# LEVERAGING FINANCIAL INCLUSION FOR BANK PROFITABILITY IN NIGERIA (2000–2019)

**James Essien AKPAN[1*]**


## ABSTRACT

*This study examines the banking industry in Nigeria over the period of twenty years (2000-2019) with the aim of empirically examining the relationship between financial inclusion and bank profitability. It made use of the available secondary data for this duration to assess the degree to which financial institutions in the country leveraged on financial inclusions to enhance banking profitability. Time series data spanning the period 2000 to 2019 were collected from the Central Bank of Nigeria Statistical bulletin and other secondary sources. The study relied on multiple regression as its major instrument of analysis. The result showed that, the number of commercial bank branches over time was positively associated with bank profitability, while bank average loans to rural communities was negatively related to profitability. The study concludes that, financial inclusion enhanced bank profitability within the period under study. The study therefore recommends that government should foster security in semi-urban and rural areas in order to engender increased financial inclusion and hence bank profitability in the country.*


**Keywords:** Financial Inclusions; Bank Branches; Rural Area Loans; Bank Profitability
**JEL Classification:** G21, N27, R51

## INTRODUCTION

Financial inclusion, which is a policy objective aimed at enabling individuals and businesses have access to useful and affordable financial products and services that meet their needs such as transactions, payments, savings, credit and insurance delivered in a responsible and sustainable way, has emerged as a crucial policy tool for governments worldwide aiming to stimulate economic growth, reduce poverty, and enhance the efficiency of financial resource allocation. Onaolapo (2015) defines financial inclusion as the practice that ensures the accessibility, availability and usage of formal financial systems to all segments of a population. In many developing economies, the principle of financial inclusion has become a significant driver of growth in the banking sector.

Martinez (2016) emphasises that financial inclusion is an important policy tool employed by governments to expedite efficient allocation of productive resources,

[1] Department of Economics, Nigeria Police Academy, Wudil, Kano State, Nigeria.
[*] Email: jamesakpan@polac.edu.ng; ORCiD: https://orcid.org/0009-0007-9570-0788

stimulate growth, reduce poverty, and significantly develop day-to-day financial management. Moreover, it helps reduce the growth of informal sources of credit, such as money lenders, which are often exploitative. Access to financial services provides the poor with the comfort of saving money reliably outside their wards and reduces the risks they face due to economic tremors. The Nigerian banking industry plays a pivotal role in the nation's economy through financial intermediation and the provision of robust credit and payment systems. Nwala and Abubakar (2017) assert that the viability of any nation's economy depends largely on the health of its banking sector. Recognising this, the Nigerian government has implemented various measures to establish an efficient and effective banking system, including supervision, regulations, and reforms aimed at promoting economic growth and enhancing the financial performance of banks (Aruwa & Naburgi, 2014).

In a world where economic growth often fails to reach the most vulnerable, financial inclusion emerges as a beacon of hope. Nigeria, like many developing nations, faces the challenge of extending financial services to its low-income population, particularly in rural areas. Despite global efforts, a staggering 2.5 billion adults worldwide remain without access to formal financial services, highlighting the urgency of this global challenge (World Bank, 2019).

**Financial Inclusion in Nigeria**

Nigeria's financial inclusion landscape paints a stark picture: only 23.8% of adults have formal bank accounts, and less than 10% engage in mobile money transactions. The contrast with other developing nations is striking – while 32% of South Africans access credit, a mere 2% of Nigerians do. In the realm of formal payment systems, Nigeria's 21.6% pales in comparison to South Africa's 46%.

The experience of financial sector performance in Nigeria has been one mixed with unpredictable feelings and loss of public confidence as a prolonged result of failed commercial financial institutions in the country over the last three decades. The nation had consistently suffered from the sudden closure of commercial banks across major cities in the country with no financial compensation or assured insurance/ financial accountability of public funds. This attitude led to the loss of confidence in the financial institutions across the nation as the public often likened financial institutions to Ponzi schemes built for a given period aimed at amassing public funds for a selected few political gladiators in government (Ejelonu & Okafor, 2022).

Majority of rural population still favoured the use of local savings associations against formal financial institutions during a period of continued financial exclusion from 2008, where approximately 60% of the population was financially excluded from formal financial services. However, this trend gradually adjusted between 2012 and 2014 following improved financial consolidation, improved financial sector regulation and asset quality measures of commercial banks in the country. It is worthy of noting that the Central Bank of Nigeria (CBN) actually encouraged cashless policy, while enhancing rural community access to financial institutions (CBN, 2023).

Furthermore, one could attribute the sudden peak in financial inclusion in Nigeria to the National Financial Inclusion Strategy (NFIS) of 2012, with its spillover impacting positively on the preceding years. However, the most notable improvement in financial inclusion in the country started in 2016 with the promotion of banking agents, support of mobile money services and financial literacy programmes of the Central Bank of Nigeria. However, despite improvement in financial inclusion related policy frameworks by the apex bank, the desired objective of financial inclusivity has not been achieved as barely more than half {74%} of the population are included in formal financial services in the country (Ejelonu & Okafor, 2022).

The North-West is the region with the highest number of excluded population. About 47% of the entire population is financially excluded (CBN, 2018). It is worthy of note that the region remains a significant stronghold of insurgency in the country causing insecurity in the region and therefore creating an unfavourable business environment for the financial sector coupled with relatively low literacy level compared to other regions, leading to financial exclusion. However, the South-Western region of the nation boasts of significant level of financial inclusion in the country, with over 95% of the entire population in the region financially included, while just 5% remains excluded. This trend is followed closely by the South-South with significantly lower level of financial exclusion compared to Northern Nigeria. While the nation still battles to improve the degree of financial inclusion across the economy, it is worthy of noting that the financial access deficiency concerns of the government must shift from national approach to more formal regional approaches, taking into account regional peculiarities in addressing these issues.

Nigeria’s world ranking on financial inclusion statues does not spur international confidence on the present financial capabilities of the commercial institutions in the economy, especially given Nigeria's ranking of 135 out of 176 countries on the financial inclusion index. The country's recent slip to 146th place in the World Bank's Ease of Doing Business Report further emphasises the urgency for change (World Bank, 2023).

### Objectives of the Study

The general aim of this study is to examine how financial institutions in Nigeria have leveraged on financial inclusion for increased profitability in Nigeria. The specific objectives are:

1. To determine the extent to which the number of deposit money bank (DMB) branches influence commercial banks profitability.
2. To evaluate whether commercial banks loans to rural areas have significant impact on bank's profitability.

### Research Questions

In order to attain the above stated objectives, the following research questions were carefully selected:

1. To what extent does the number of deposit money bank (DMB) branches influence commercial banks profitability?
2. Do commercial banks loans to rural areas have significant impact on bank's profitability?

## REVIEW OF LITERATURE

### Conceptual Literature

The World Bank (2017) defines financial inclusion as the way financially excluded and underserved people in a society have access to a range of available financial services without any discrimination. Aduda and Kingoo (2015) view financial inclusion as a process of making available an array of financial services, at a fair price and at the right place without any form of discrimination to all members of the society by the service provider. Also, Hariharian and Marktanner (2016) conceptualise financial inclusion as a strategy aimed at increasing the number of people in the society who have access to formal financial services.

In the study of Sarma and Pias (2014), financial inclusion is defined as the provision of wide range of financial services such as savings, insurance services, credits, remittance and payment services. CBN (2016) asserts that financial inclusion is a state where financial services are delivered by a range of providers, mostly the private sector, to reach everyone who could use them. Specifically, it means a financial system that serves as many people as possible in a country, and financial inclusion links people to banking services including their attendant benefits (Kama & Adigun, 2013). Accessibility to financial services has increasingly become an area of interest for policymakers due to its far-reaching economic and social implications (Nwanne, 2015).

In many developing economies, the principle of financial inclusion has become a significant driver of growth in the banking sector. The banking sector in Nigeria adopts the policy of financial inclusion by ensuring accessibility to financial services for all population segments; financial inclusion offers a pathway to economic empowerment and stability for millions of previously underserved individuals.

Financial inclusion remains a significant challenge in Nigeria despite the country's status as Africa's fintech giant. According to the World Bank (2021), 36% of Nigerian adults still lack a formal bank account. This exclusion is particularly pronounced in rural areas, where access to financial services is limited. The Enhancing Financial Innovation & Access (EFInA) survey of 2021 revealed that only 56% of rural residents are financially included, highlighting a stark urban-rural divide (Enhancing Financial Innovation & Access [EFInA], 2021).

The obstacles to financial inclusion in Nigeria are multifaceted. Lack of trust in financial institutions, inadequate financial literacy, and the high cost of banking services are primary barriers. A survey by EFInA found that more than half of Nigerian adults have limited financial literacy and capability, particularly in financial planning (Moghalu, 2014). Furthermore, the distance to financial access points is a more significant obstacle in Nigeria compared to other countries in the region (Dashi et al., 2016).

Despite these challenges, there are opportunities for improvement through technological advancements. The rapid growth of the fintech industry in Nigeria presents a promising avenue for expanding access to financial services. However, the uptake of digital financial services, particularly mobile money, lags behind peer countries. As of 2020, while 44.8% of Nigerian adults were banked, only 5.7% were served by other formal channels such as mobile money operators (CBN, 2020). This suggests a significant untapped potential in the digital financial services sector.

The gender gap in financial inclusion also remains a concern. In 2020, 21.3 million adult women (20% of Nigeria's adult population) were financially excluded, compared to 17 million men (World Bank, 2020). Addressing this disparity, along with improving access in rural areas, will be crucial for achieving comprehensive financial inclusion. The Central Bank of Nigeria's deputy governor, Aishah Ahmad, noted an 8% gender gap in financial inclusion, underscoring the need for targeted interventions to bring more women into the formal financial system (Ahmad, 2019).

Although the CBN has been implementing various policies and processes to enhance financial inclusion in the country, there still exist gaps which must be bridged in order for the excluded to be included. The inability of a large portion of the financially excluded populace to meet the basic Know Your Customer (KYC) requirement and absence of unique identification data management system remain one of the systemic challenges for high financial inclusion rate to be attained. However, the KYC process has been receiving a lot of fine-tuning by the Bank through the tiered approach and other considerations which aims at easing some of the stringent requirements of the KYC procedures for the low-income financially excluded to be included. In order to reduce the stringency of the KYC process, deposit money banks (DMBs) have now been mandated to accept the Voters card as a valid means of identification for account opening.

It is also of great concern that the various electronic channel platforms such as automated teller machine (ATM), point of sale (POS) machine and mobile banking platforms have not performed optimally as they should. E-channel requests and services are at best delayed or experience incessant downtimes more often than not where low-income groups are dominated. However, the end-to-end deployments of technologies into the financial sector is gradually making it possible to open an account, request for ATM card, deposit funds and withdraw funds without actually queuing in our financial institutions today.

With financial inclusion via financial outreach (geographical and demographical) and branch network penetration, banks can serve a wide range of customers potentially at a reduced cost once necessary infrastructures are in place (Berger, Hassan & Zhou, 2010). While banks extend deposit facilities to a large pool of customers, they are able to attract a large number of retail deposits which are often cheaper than wholesale funding. Thus, greater diversification in financial services associated with financial inclusion in mobilising deposits which enhances bank performance (Ahamad & Mallick, 2017).

The greater financial inclusion is also likely to influence the overall level of lending opportunity of banks. By reaching out to unbanked areas while extending small credits, banks can reduce distance and build strong relationship with customers. The study of Deng and Elyasiani (2008) corroborates that distance between lender and borrower undermines efficacy of banking services through intensification of asymmetric information problem.

Deng and Elyasiani (2008) also find that diversification across more remote areas (in our case, the areas where financial services are hardly available) is associated with greater value enhancement. Therefore, when banks diversify to regions where more unbanked population are located, they are better able to understand the nuances of the local household/firm environment. This tends to reduce default risk, cost of monitoring and enhance lender-borrower proximity, and relationship, which in turn enhance banks return (Ahamad & Mallick, 2017).

Commercial bank performance, as reiterated by Bessler and Bittelmeyer (2016), is an indicator of how banks have transformed their assets to generate revenue in day-to-day business operations. Performance also reflects how external parties assess a bank's ability to operate in the long run. Consequently, bank managers are under constant pressure from a wide spectrum of stakeholders for better performance, resulting in conflicts of interest and subsequent agency costs borne by shareholders (Watts & Zimmerman, 2019).

Deposit money banks in Nigeria serve as the primary platform and delivery vehicle for financial inclusion activities in the payment-credit systems. Iwejor (2018) suggests that increased financial inclusion has the potential to bring more people into the banking network, potentially leading to improved financial performance for banks through increased service patronage and a broader clientele base. This study is motivated by the need to examine the current state of financial inclusion in Nigeria and its implications for the performance of commercial banks. By exploring this relationship, we can gain valuable insights into how financial inclusion strategies can be leveraged to enhance bank profitability while simultaneously contributing to broader economic development goals.

## Theoretical Framework

*Sustainability Theory*

This work is anchored on the sustainability theory developed by Felix Ekardt in 1986 which describes a form of economy and society that is lasting and can be lived on a global scale. The society-changing potential of the claim: 'More justice between generations, more global justice – at the same time' faces the problem of getting out of sight. Sustainability is just not the general claim to take social, economic, and environmental policy serious and to strike a sound balance between these aspects. Sustainability theory tries to explain the potential for long-term maintenance of well-being, which has ecological, economic, political and cultural dimensions in the long run.

The public good theory of financial inclusion argues that the delivery of formal financial services to the entire population, ensuring that there is unrestricted access to finance for everyone should be treated as a public good for the benefit of all members of the population. As a public good, individuals cannot be excluded from using formal financial services and they cannot be excluded from gaining access to financial services. The theory emphasises that individuals should enjoy basic financial services without paying for it. The Systems theory of financial inclusion states that financial inclusion outcomes are achieved through the existing systems, whether economic, social or financial systems, which financial inclusion relies upon and as a result, greater financial inclusion will have positive benefits for the system it relies on. This theory lays emphasis on the fact that government should formulate and implement policies that encourage financial inclusion as this will affect the overall wellbeing of the system.

**Empirical Review**

Razaq, Ibrahim, Abdullahi and Shaibu's (2018) study on the impact of financial inclusion on financial performance of DMBs in Nigeria indicated that the number of bank branches and usage of banking services have no significant impact on the financial performance of DMBs in Nigeria. The study concludes that micro, small and medium enterprises (MSMEs) financing as a measure of financial inclusion improves financial performance of DMBs in Nigeria. The study recommends that CBN and the Nigeria Deposit Insurance Corporation (NDIC) should also encourage DMBs through their regulatory and supervisory functions to give priority to small and medium enterprises (SMEs) financing in Nigeria.

Kumar, Acahrya and Thrikawala's (2021) study on financial inclusion and bank profitability with evidence from a developed market indicated that branch contraction reduces the profitability of Japanese banks, although the numbers of loan accounts and automated teller machines (ATMs) do not affect bank profitability. Among bank-specific variables, cost management, credit risk management, and bank size are the key drivers of profitability. Iqra and Samreen (2015) carried out research on the impact of financial inclusion on banks profitability – an empirical study of banking sector of Karachi, Pakistan. The findings and results of the research indicate that there is an insignificant relationship amongst the variables.

Fadi (2019) examined the role of financial inclusion in promoting banks' performance using data of 189 countries. The study found evidence that financial inclusion via the instrumentality of improved bank branches, bank penetration influences banks to realise more returns and decreased risk. Likewise, Odero and Ibrahim (2018) evaluated financial inclusion and financial performance of Kenya banks employing measures of financial literacy programme, usage of agents and representatives, enhanced proliferation of ATMs and mobile banking services. The result showed that financial inclusion measures positively and significantly impact on Kenya banks performance.

Okafor (2018) notes that access to financial services for the hundreds of millions of currently excluded individuals worldwide would create possibilities for a large depository of savings, investable funds, and global wealth creation. This implies that access to customised and bespoke financial services for low-income earners will promote enormous capital accumulation, credit creation, and an investment boom, providing a massive source of cheap long-term investable capital.

Equally, Soriano (2017) examined the dynamics of financial inclusion and its impact on the financial performance of 63 India, Southeast Asia, and Africa Fintech start-up companies and found that financial service experiences, strategic partnerships with financial institutions and e-commerce significantly and positively correlate with financial inclusion variables of active customers. More so, the study established that financial inclusion positively and significantly influences the financial performance, measured by yearly revenue.

Bernini and Brighi (2017) studied the effect of financial inclusion (bank branches expansion and efficiency) on local economic growth in Italy. The study found evidence that improved bank branches enhance revenues. Similarly, Iqbal and Sami (2017) ascertained financial inclusion and economic growth in India over a seven-year period. Findings showed a positive and significant effect of bank branches, with an insignificant effect for ATMs growth.

Lisa and Jacolin (2016) focused on the effects of financial inclusion on the performance of companies using firm-level data in seventy-nine (79) countries. The study found evidence that financial inclusion positively and significantly impacts on companies' growth; this positive effect is amplified when banks are less concentrated especially in the urban areas.

Nwosa and Isiaq (2013) carried out a study on the impact of banks' loan to rural areas in Nigeria. They observed that banks loan to the rural areas had insignificant impact on return on assets of commercial banks in Nigeria both in the long and short run. Based on the findings, the study recommended the need for greater deliberation and conscious effort by the government in ensuring that loans are given to ultimate users.

**Gap in the Literature**

Although a number of research have been carried out in the subject area and most affirm the importance of financial inclusion in bank profitability and economic development, this work stands out as it investigates the role of financial inclusion in Nigeria using data from the banking sector in the country. As research in this area remains limited, particularly concerning the link between financial inclusion and commercial bank performance, this study aims to bridge that gap. By exploring this crucial relationship, we seek to uncover strategies that can simultaneously boost bank profitability and extend financial services to the underserved, paving the way for a more inclusive and prosperous Nigeria.

## METHODOLOGY

The study utilised *ex post facto* research design, as the design allows the examination of events that have occurred. This method gives robust freedom to assess the relationship between the regressed and the regressors in the model, therefore pinpointing likely cause and effect over time. The choice of this approach was enshrined by the study's desire to unearth the influence of financial inclusion on commercial banks performance. The study employed time series data from the year 2000 to 2019. The study's nature encourages the use of secondary data type, which were obtained from the Central Bank of Nigeria Statistical Bulletin, National Bureau of Statistics, Nigerian Interbank Settlement System (NIBSS) and annual reports of the Nigeria Deposit Insurance Corporation (NDIC).

## TECHNIQUES OF DATA ANALYSIS

The data collected were analysed using multiple regression of the Ordinary Least Square (OLS) method to establish the relationship between the independent and dependent variables. According to Kothari (2004), regression analysis is concerned with the study of how one or more variables affect changes in another variable. The study model was defined as the empirical approach used by Abubakar, Hassan, Ismaila and Abdulkarim (2019) who examined financial inclusion and financial institution profitability.

$$ROA_{t-1} = \beta_0 + \beta_1 logMSF_{t-1} + \beta_2 logRFI_{t-1} + \beta_3 logPBS_{t-1} + \beta_4 logNBR_{t-1} + \beta_5 logUBS_{t-1} + e_{t-1} \quad (1)$$

The model was grossly adjusted to fit in the context of the present research with the inclusion of more financial inclusion indicators such as - Pricing of Banking Services ($PBS$; Weighted average lending rate); Number of Bank Branches of DMBs ($NBR$) and Usage of Banking Services ($UBS$; Deposits of rural branches of DMBs). The choice for the change of variables is necessitated to have a comprehensive analysis of the variables under study. However, in order to have a research devoid of manipulation, the researcher decided to make changes to the variables. The following model is formulated for the study:

$$ROA = f(NDB, CBL, ACA) \quad (2)$$

$$ROA = \beta_0 + \beta_1 NDB + \beta_2 CBL + \beta_3 ACA + \mu_t \quad (3)$$

Where $ROA$ is return on assets; $NDM$ is number of deposit money bank branches; $CBL$ is commercial banks loans to rural areas; $ACA$ is average current account balances of deposit money banks; $\beta_0$ - the constant; $\beta_1$, $\beta_2$, $\beta_3$ = coefficients or the parameters and $\mu$ is the error term.

### Data Synthesis

In order to carry out data synthesis in view of arriving at data driven decision and insightful research policy recommendation and conclusions, the study analysed the trend relationship between commercial banks return on assets and financial inclusion proxy {number of deposit money banks branches} across the country. This is establishing the nature of linear relationship and present a visual overview of this association. Furthermore, the study regressed for the description of the data points, in order to statistically characterize the data based on their individualistic characteristics over time, while multiple regression was explored to address the relationship between the regressors and the regressed in the model for the study duration.

**Trend Diagnostics**

Trend analysis is aimed to access the degree of variations in a linearised relationship between the dependent variable and the regressors. Here, we are interested in identifying any persistent pattern of flow between return on assets and financial inclusions parameters over time.

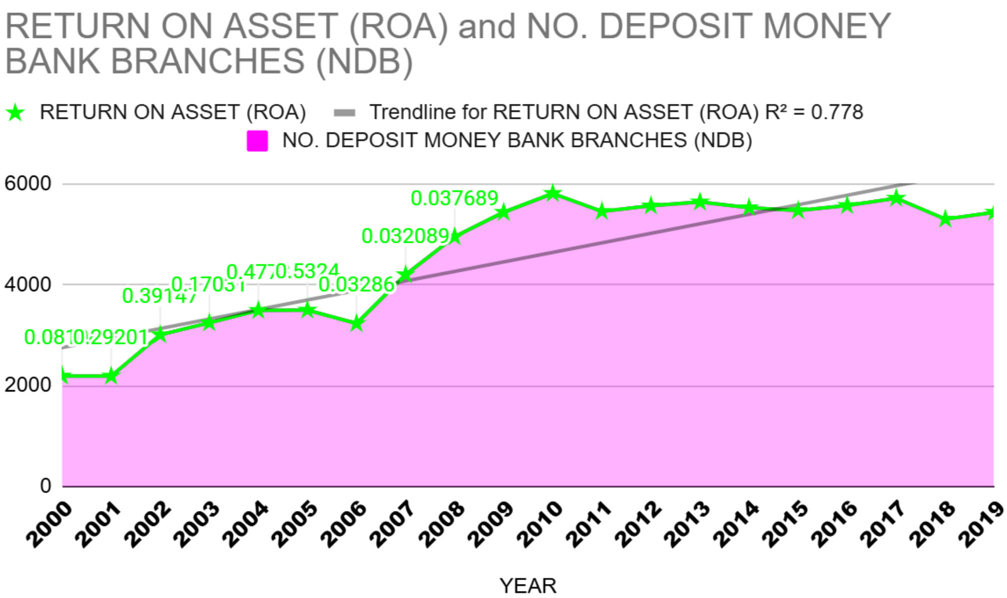


**Fig 1: Trend of commercial banks return on assets and financial inclusion in Nigeria**
Source: Author's Research Compilation

A causal approach toward commercial banks return on assets and number of banks in the country over the period of this investigation is indicative of a significant positive relation. For the period, we visually could see that, the number of commercial banks availability was additively related to ROA of financial institutions in the country over time. Thus, in the year 2000, with lesser spread of commercial banks in Nigeria, we also witnessed that, the growth in commercial banks return on assets was low, while an incremental rise in the number of commercial bank branches across the nation as a result of improved government policies and stiffer financial sector regulations, commercial banks return on assets also increased significantly. The trend therefore suggests a positive additive linear relationship between the number of financial institutions in the country and banks ROA. However, the finding grossly contradicts the result obtained by Abubakar, Hassan, Ismaila and Abdulkarim (2019**)** who examined the impact of financial inclusion on financial performance of DMBs in Nigeria and asserted that the number of financial institutions at any point in time had no impact on ROA.

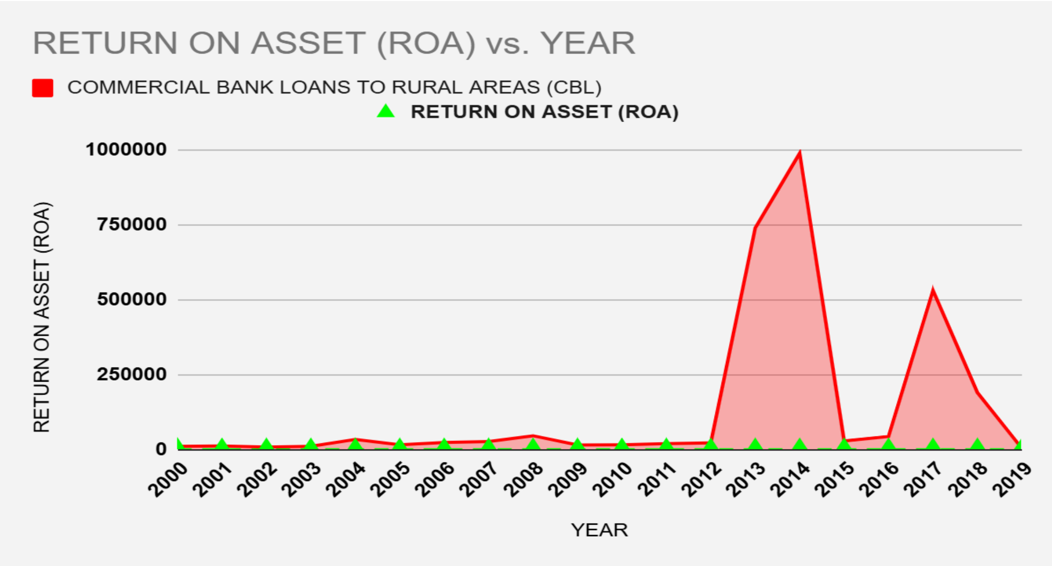


**Fig 2: Trend of commercial banks return and rural area loan extension in Nigeria**
Source: Author's Research Compilation

The study carried out by Abubakar, Hassan, Ismaila and Abdulkarim (2019**)** found that commercial banks loans to Medium Scale Enterprises had a significant effect on banks ROA, but loans to rural communities had a negative deductive impact over banks return on assets as of the point of their investigation. The graphical representation above clearly supports their findings, as incremental gestures towards rural community loans only resulted in decline of banks ROA over time.

From Table 1, we can see that on average the return on assets (ROA) stood at 0.285000 while number of deposit money bank branches (NDB), commercial bank loans to rural areas (CBL) and average current account balances of deposit money banks stood at 4546.950, 139720 and 293.7285 respectively during the 20 years understudied. The mid-value for return on assets series is 0.230000. The mid-value for number of deposit money bank branches (NDB), commercial bank loans to rural areas (CBL) and average current account balances of deposit money banks stood at 5368.500, 23427.29 and 217.2250, respectively.

**Table 1: Descriptive Statistics**

| | ROA | NDB | CBL | ACA |
|---|---|---|---|---|
| **Mean** | 0.285000 | 4546.950 | 139720.0 | 293.7285 |
| **Median** | 0.230000 | 5368.500 | 23427.29 | 217.2250 |
| **Maximum** | 1.180000 | 5809.000 | 988587.9 | 935.9100 |
| **Minimum** | 0.020000 | 2193.000 | 4730.800 | 19.29000 |
| **Std. Dev.** | 0.266310 | 1264.269 | 277416.5 | 243.1296 |
| **Skewness** | 1.900585 | -0.672065 | 2.177011 | 1.029906 |
| **Kurtosis** | 7.327375 | 1.890663 | 6.320920 | 3.452126 |
| **Jarque-Bera** | 27.64589 | 2.531093 | 24.98835 | 3.706039 |
| **Probability** | 0.000001 | 0.282085 | 0.000004 | 0.156763 |
| **Sum** | 5.700000 | 90939.00 | 2794400. | 5874.570 |
| **Sum Sq. Dev.** | 1.347500 | 30369131 | 1.46E+12 | 1123128. |
| **Observations** | 20 | 20 | 20 | 20 |

Source: Author's Computation

The values of the standard deviation indicate that the standard error of the sample mean of estimating the true population mean of the return on assets is 0.266310 while number of deposit money bank branches (NDB), commercial bank loans to rural areas (CBL) and average current account balances of deposit money banks stood at 1264.269, 277416.5 and 243.1296 respectively. Thus, the standard deviation figures represent the aggregated contributions of number of deposit money bank branches (NDB), commercial bank loans to rural areas (CBL) and average current account balances of deposit money banks to the performance of commercial banks in Nigeria within the period of 20 years of the study.

Finally, the nature of the distribution of data measured by the skewness, kurtosis and Jacque-Bera statistics shows that return on assets, number of deposit money bank branches (NDB), commercial bank loans to rural areas (CBL) and average current account balances of deposit money banks have normal distributions. This is evident from their probability scores.

## RESULTS AND DISCUSSION

The analysis on leveraging financial inclusion on the banks profitability in Nigeria was carried out for a period of 20 years, following the availability of time series data. Empirical outcome from synthesis of time series data on financial inclusion indicators and commercial banks profitability measure [Return on Investment] depicts an adjusted R-squared ($R^2$) of 0.279670 [27.96%]. This by implication signifies that the number of deposit money bank branches (NDB), commercial bank loans to rural areas (CBL) and average current account balances of deposit money banks only accounted for the 27.96% of variations in commercial banks profitability index during this period, while 72.04% of variations are accounted for by other financial inclusion indicators captured by the error term in the study model. The measure for commercial banks profitability used in the model as return on assets was positive in itself, thereby implying that the financial inclusions proxies used in the study rarely influence the position of banks profitability for the study period, which was earlier confirmed by the values of adjusted $R^2$. Furthermore, the number of commercial bank branches across the country revealed a positive additive influence over commercial banks profitability trends as confirmed by Jimoh, Shittu and Attah (2019) through their research titled empirical explanation on the impact of financial inclusion instruments on performance of Nigerian banks. However, commercial banks loans to rural communities had a negative influence over their financial profitability; the negative position of banks loans to rural communities further raises the question surrounding defaulting tendencies of rural dwellers in loan repayment and other moral hazards associated with running financial transaction in rural communities in Nigeria. This result is supported by Abubakar, Hassan, Ismaila and Abdulkarim (2019**),** whose empirical findings only supported issuing of loans to medium scale enterprises and not local rural communities over time.

**Table 2: Multiple Regression Analysis**

**Dependent Variable: ROA**

| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
|---|---|---|---|---|
| C | 0.436051 | 0.120878 | 3.607363 | 0.0024 |
| NDB | 5.62E-05 | 3.02E-05 | -1.861142 | 0.0812 |
| CBL | -3.90E-08 | 1.24E-07 | 0.313942 | 0.7576 |
| ACA | 0.000185 | 0.000160 | -1.159453 | 0.2633 |
| R-squared | 0.393406 | Mean dependent var | | 0.131608 |
| Adjusted R-squared | 0.279670 | S.D. dependent var | | 0.158161 |
| F-statistic | 3.458928 | Durbin-Watson stat | | 1.613417 |
| Prob(F-statistic) | 0.041460 | | | |

Source: Author's Computation

From the regression analysis conducted in Table 2, the number of deposit money bank branches had a positive and statistically insignificant influence on banks profitability measured by return on assets of Commercial Banks in Nigeria. This is depicted by the coefficient value of 5.62E-05 and the probability value of 0.0812 > 0.05. Based on this, the null hypothesis is accepted while the alternative is rejected. This implies that the number of deposit money bank branches has no significant impact on banks profitability in Nigeria.

The result of this research is supported by similar research conducted by Jimoh, Shittu & Attah (2019) on the impact of financial inclusion on the performance of banks in Nigeria which found that the number of deposit money bank branches has no significant effect on banks profitability. Their study concludes that improvement in the quality of financial services will attract more customers to the bank and boost their performance. It is thus recommended that more ATMs, POS and branches be put in place for better inclusive finance.

Findings from the regression analysis conducted above reveal that commercial banks loans to rural areas had negative association with commercial banks profitability indicator as of the time of this empirical review. Thus, the economic implications on banks profitability over time is that improving or enhancing the degree of commercial banks loans to rural communities in Nigeria on the average will result in the decline in the performance of banks profitability. Furthermore, that the probability values of 75.76% was grossly higher than 0.05% in absolute terms, further expresses the insignificant influence of extending more loans to rural communities on banking system profitably over the study period (Ejelonu & Okafor, 2022).

This outcome is in direct consonance with the empirical assertions of Olaoye, Adedeji and Ayeni-Agbaje (2018) on commercial bank lending to rural areas and profitability of commercial banks. They found out that commercial banks loans to rural areas have no significant impact on return on assets. Their study recommends that in order to address this, Nigeria's government should recognise the impact of loans to rural areas in Nigeria and attach importance to the growth of SMEs by encouraging banks to assist with loans because it constitutes a major tool in boosting employment in the rural areas.

More so, Nwosa and Isiaq (2013) carried out a study on the impact of banks loan to rural areas in Nigeria. They observed that banks' loan to the rural areas had insignificant impact on return on assets of commercial banks in Nigeria both in the long and short run. Based on the findings, the study recommended the need for greater deliberation and conscious effort by the government in ensuring that loans are given to ultimate users.

## CONCLUSION

Based on the findings, the study concludes that the variables of financial inclusion (number of deposit money bank branches, commercial banks loans to rural areas and average current account balances of deposit money banks) have insignificant impact on the commercial banks' probability in Nigeria over the study duration. This result is strongly linked to inabilities of commercial banks' branches in rural communities in the country to effectively operate on breakeven scale, as the dwindling number of deposit and banking patronage ensures that these institutions return more in liabilities than profit. The access of rural communities to certain financial services such as loans for agricultural engagement have not been fully effective as a contractual arrangement, as most still view such private ventures as government properties, hence are quick to conclude that loans are government funds and hence the urgency for repayment at due dates become grossly bias leading to more bad debt to financial institutions in the country (Ejelonu & Okafor, 2022).

The issues of insecurity and natural disasters such as excessive flooding that hampers the performance of agriculture have been at the background of defaulting tendencies for loan re-payment in the country. Moreso, the continued destruction of farmlands by Fulani herders in the country has proven more impactful on agricultural produce than any other known issues. While one could directly associate poverty and hunger in Nigeria to gross insecurity, even as the public interest has been on government inefficiencies, but a critical review of societal insecurity and food insecurity in Nigeria reveals that hunger and poverty are directly influenced by increased insecurity across the nation over time.

Financial institutions in the local communities therefore shut down operation as a result of gross insecurity in the country over time. Based on the foregoing, we concluded that while financial inclusion indicator of increased number of banking branches strongly influences banking profitability in the country, sustained growth in insecurity leading to increased poverty, hunger and starvation will continue to widen the gap in financial inclusivity agenda of the government. This is because the Nigerian landscape has developed a divergent dynamic among universally known indicators of financial inclusion to identify insecurity as the major source of deprivation and regional economic performance disparity in the country.

**Policy Framework Recommendations**

The results obtained have shed light on the nature of data driven decision and policies that the government of Nigeria must foster in order to attain financial inclusivity and financial sector stability over time. Thus, the following recommendations were made in consideration of physical and economic conditions in alignment with the above empirical results.

1. **Multiplicity of Commercial Banks:** Keeping in mind that the most devastating issues in Nigeria currently are not economically oriented alone, many consider the economy as the major source of poverty across the nation, while neglecting the influence of rural communities on urban settlement food security and price stability. Through this empirical research, we can conclude that insecurity and not economic indicators remains the chief predictor of Nigeria's many problems. Therefore, while encouraging the

creation and multiplicity of commercial bank branches in rural communities in the country over time, the need to enhance strong security framework across the country remains an outstanding issue. The government is therefore implored to regionalise the security system in Nigeria by introducing state policing, while also enabling a suitable framework for local government policing. The advocacy is for the security system to also reflect the true federal system practiced in the country in order to enhance security stability from the rural background up to the centre of government.

2. **Insuring Loan Security:** Even as attaining financial inclusion remains a major economic welfare objective of the government over time, the fight against insecurity has proven abortive given the emergence of new terror groups in Northern Nigeria. These issues make extending commercial banks loans to such communities very difficult and an expression of wrong profitability index decision of managers at financial institutions to undertake. Therefore, in such cases, the study advocates that banks do not only get involved in financing of agricultural produce in such hostile regions but should also collaborate with the Ministry of Agriculture and Bank of Industry to ensure that their capitals are recouped at the earliest possible time. The aim is to encourage agricultural or food bank in Nigeria to purchase agricultural produce from farmers at the point of harvest, repay farm input capital and re-imburse profits to farmers.

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