FINANCIAL INCLUSION, MACROECONOMIC STABILITY AND POVERTY ALLEVAITION IN NIGERIA

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Abstract
The study empirically evaluates how financial inclusion and macroeconomic stability affect poverty reduction in Nigeria from 2009 to 2023. Specifically, the study considered how bank account per head, inflation rate, number of bank branches, and bank loans to rural dwellers influence poverty index. Data came from the Central Bank of Nigeria statistical bulletin, the World Bank database, and the National Bureau of Statistics. The study employed the descriptive statistics, unit root, and ARDL techniques at the 5% significant level. The unit root test revealed that the variables had mixed stationarity; necessitating the ARDL F-bound test the shows the absence of long-run form. The findings show that bank loans to rural dwellers is positive and significant to poverty index, inflation rate is positive but insignificant to poverty index, and number of bank branches and bank account per head are negative and insignificant to poverty index in Nigeria. The research concludes that the number of bank accounts per person is the primary factor of financial inclusion that has a substantial impact on the poverty index in Nigeria. Therefore, the research recommends that banks should lower the lending rates and collateral requirements for rural residents in order to enhance financial inclusion and simultaneously alleviate poverty in Nigeria.

Keywords: *Instability, Income inequality, Banks, Sustainability*

1.0 Introduction

Adopted in September 2015, the seventeen-goal sustainable development agenda aims to eradicate extreme poverty, safeguard the planet, and guarantee that all people live in prosperity and harmony by the year 2030 (Adeleke & Olomola, 2022). To achieve social, economic, and environmental sustainability in a balanced way, it is necessary to attend to each of these areas separately, since doing so will impact the results of each. This would result in a number of worldwide changes, including an end to poverty, famine, AIDS, and gender inequality. Despite the fact that numerous studies have looked at the connections between the 17 goals for various countries and regions, they have all come to the same conclusion: the first SDG, which is to alleviate poverty, has a synergistic relationship with many of the others, and

every other SDG benefits from efforts to reduce inequality and poverty (Breuer et al., 2019; Pradhan, 2019; Kroll et al., 2019; Lusseau et al., 2019). For this reason, we must not lose sight of the fact that many people throughout the world are still fighting for access to food, water, and shelter, and that inequality and poverty are among the greatest threats mankind faces.

Roughly 736 million people are still living on less than $1.90 per day, according to the 2015 UNDP report. Half of the poor in Sub-Saharan Africa (SSA) are children and young adults, which has a negative impact on the region's economy. Income inequality has been growing over the last several decades, prompting calls for action on a worldwide scale and leading to stricter oversight of financial markets and institutions. The wealthiest one percent of earners took home 22 percent of the world's income in 2016, while the poorest half took home only 10 percent (SDG Index, 2019). Nigeria was placed 126th out of 151 nations on the inequality-adjusted human development index.

Emerging from a recession in the third quarter of 2015 with a negative growth rate of -2.3%, the Nigerian economy has lately experienced expansion. As of 2019, the growth rate has increased to 2.55%, but this has not translated into a better standard of living or a reduction in poverty levels. Poverty was at 42.9% in 2019 and the income inequality gap at 59.8% (CBN, 2019; SDG Index, 2019). Furthermore, according to a 2018 study by the World Bank, Nigeria now has more impoverished people than India. Additionally, it was found that 82 million Nigerians are living in severe poverty, meaning that their daily income is less than N684. This was further supported by data from OXFAM (2017), which showed that the number of Nigerians living below the poverty line rose from 69 million in 2009 to 112 million in 2010, making up 69% of the population. Furthermore, income inequality is soaring, with Nigeria ranking dead last out of 157 nations in the measure for both 2017 and 2018 (IMF, 2018).

Reducing economic development, worsening health, and other results, and having a profound impact on residents are all reasons why poverty is harmful (Keeley, 2015). After the 2008 financial crisis, researchers began paying closer attention to the effects of inequality on other macroeconomic variables. They found that inequality hinders intergenerational mobility, increases social risks, reduces aggregate demand, underinvests in human capital, and directly affects growth (Uruakpa, Kalu, & Ufomadu, 2019). The analysis from the International Monetary Fund states that unless inequality is addressed, the majority of the world's population would be living in severe poverty by 2030, making it impossible to alleviate poverty. Since disparity is associated with slower average growth and shorter growth periods, it follows that increasing inequality is a major danger to economic stability and the elimination of poverty (Uruakpa, et al., 2017). So, these are serious economic issues caused by mismanagement of resources and ineffective leadership.

Since the global economic recession of 2008 and a hot topic in discussions about sustainable development around the world, there has been widespread agreement that financial inclusion is a policy instrument that has considerably boosted growth, decreased poverty, and increased inequality (Park & Mercado, 2015). There is no universally agreed-upon definition of financial inclusion due to the concept's breadth; nonetheless, the term often suggests that low-income people should have easier access to financial

services. It is defined by the International Monetary Fund as the ease with which households and businesses may get and make use of formal financial services (IMF, 2018), while according to Sarma (2008), it is the process by which the financial system is made available to and used by all members of society.

Consequently, the importance of financial inclusion in fighting poverty and inequality has recently come to light, leading to a number of reforms aimed at the financial sector that aim to achieve these goals (Jahan et al., 2019). There has been a dramatic uptick in the use of financial inclusion techniques in recent years, as a result of policymakers' efforts to broaden access to the financial sector for previously marginalised populations. There has been an uptick in developed-world use of it, as the worldwide Findex database for 2017 shows that 1.2 billion people have an account as of 2011 and 515 million as of 2014 (Adeleke & Olomola, 2022). Furthermore, the percentage of individuals having an account with a bank or a mobile money provider has increased from 62% to 69% worldwide.

Some might say that a country's markets may become more unstable if they provide longer-term financial services. One crucial point brought up by Garcia (2016) is the possibility of a connection between financial inclusion and stability. Author posits that financial market risks may increase due to the uncontrolled nature of the financial system and the quick expansion of credit that results from financial inclusion and its tools. Financial stability has been a top priority for policymakers and regulators since the 2007–2009 Global Financial Crisis, which taught us a lot about systemic risks (Cihak, Mare & Melecky, 2016; Morgan & Pontines, 2018). Banks planned to lend to hazardous borrowers in almost every developing and industrialised nation in the years leading up to the crisis.

The potential downsides of increasing access to financing seem to be a pre-collapse financial system trigger. A counterargument, however, is that low-income people are likely to maintain their financial conduct as normal, even as financial crises occur, therefore the hazards of financial inclusion are not systemic. Borrowers are responsible for repaying their debts, whereas savers keep their money (Hannig & Jansen, 2010). Increasing access to financial services for all members of society is the goal of financial inclusion. The implication is that if more people could deposit money, the deposit base would be more diverse, making the financial system stronger and the economy more stable.

Many empirical studies have looked at how financial inclusion and development affect poverty reduction (Chaturvedi, 2022; Bolarinwa et al., 2021; Alvarez-Gamboa et al., 2021; Olaniyi et al., 2022; Essel-Gaisey & Chiang, 2022; Aracil et al., 2022; Dong et al., 2022), but the literature on financial economics has neglected to examine the role of macroeconomic stability in the Nigerian financial inclusion-poverty nexus. Therefore, our research addresses that information gap. This research seeks to address the issue of poverty in Nigeria by examining the relationship between financial inclusion and macroeconomic stability.

2.0 Literature Review

2.1. Conceptual Framework

2.1.1 Financial Inclusion

"Financial inclusion" means bringing traditionally underserved communities, like artisans, into the mainstream of banking

services so that they, too, may improve their economic and social standing via increased access to business capital. In other words, if Nigeria's financial system were more inclusive, the negative consequences of financial exclusion would be less severe. The National Financial Inclusion plan was developed in 2012 by the Central Bank of Nigeria and other stakeholders with the aim of boosting access to financial services throughout the nation by 80% by 2020. The goal of "financial inclusion" is to link people and small and medium-sized enterprises (SMEs) who are not already part of the financial system to a stable and useful system of financial services. Taking into account critical growth factors in the country's environment, it aims to bring Nigeria up to worldwide standards (CBN, 2020). With this in mind, we may state that financial inclusion has taken place when all adult families in a country have easy access to a variety of formal financial services that meet their requirements, improving their well-being and reducing poverty all at once.

Individuals with low incomes who are financially integrated and actively engage in society are more likely to have stability, according to Mohammed, Mensah, and Gyeke-Dako (2017). Life is undeniably made easier when people and businesses have access to financial services that enable them to prepare for the future as well as for the unexpected. Having access to banking services and other financial products, such as loans and advances, may raise a household's quality of living (World Bank, 2018). This creates additional opportunities for individuals and families to withstand economic storms, establish enterprises, invest in healthcare or education, and reduce risk. Research conducted by the development finance agency revealed that 53 percent of the population lacked access to formal banking services in 2008. Financial innovation and inclusiveness have not been fully implemented, according to the assessment. Financial inclusion, a component of financial development, reduced the number of excluded individuals to 46.3%, which led to a significant improvement in the country's economic status (CBN, 2010).

2.1.2 Household Poverty in Nigeria

"Any dwelling in which one or more people are permanently residing" is the definition of a household according to the Nigeria Bureau of Statistics (NBS), 2022. Any kind of group of individuals might fit the bill, even those of the same family. Sociology, microeconomics, and governance models often use families as their primary study units. The Bank's data from April to May 2020 shows that over a third of Nigerian households with children were impacted by the outbreak. Even after the epidemic subsided in October 2020, many households with children between the ages of 5 and 18 had not yet registered them for school (World Bank, 2020). According to the World Bank (2020), attendance in urban areas declined by 25% while in rural regions it fell by 12%. About 40.1% of Nigerians live below the poverty line, as reported in the 2018–19 national monetary poverty line and the National MPI (2022). Not only that, but 63% of people are considered multidimensionally impoverished. While 42% of people in cities are poor, 72% of people in rural regions are (NBS 2022). One way to look at household poverty is by comparing the impact of the country's available government strategic programmes on the quality of life of its citizens over time.

2.2 Theoretical Framework

2.2.1 Public Good Theory of Financial Inclusion

Those who believe in the importance of financial inclusion as a social benefit argue that everyone should have the opportunity to use banking services. The obvious conclusion is that nobody should be able to utilise financial services just because someone else can. The public good approach states that in order for a family or rural resident to be financially integrated, they should not be charged a fee to create an account, save money, borrow money for business operations, or utilise banking apps like ATMs to perform transactions. Ozili (2020) argues that the government should subsidise this so that economically deprived people may participate as it is a public good. Governments should be responsible for providing formal financial services to the public, argue Aggarwal and Klapper (2013). Technological and banking innovations, however, have made it possible for individuals to access efficient financial services (Ozili, 2018). Public and commercial organisations should work together to increase the quality of formal financial services for all citizens (Arun & Kamath, 2015).

2.2.2 Institutional Theory of Financial Inclusion

Financial inclusion and household adoption of formal financial sectors are both impacted by non-market structures or institutions, as the concept posits. Theoretically, financial inclusion has the potential to reduce the level of financial exclusion in the nation (Ozili, 2022). A well-structured financial services sector would inspire even more confidence in the country's new development strategy and innovations among the public who are deeply dedicated to the inclusion plan. Because of the obvious benefits, this could encourage the unbanked to seek out traditional banks so that they can meet their financial obligations. But many don't trust the connection because of all the scams, very expensive fees, bank failures, and hefty transaction costs. As a ripple effect affects homes, there will be widespread financial exclusion and bank runs. Economic development efforts may be armed with the weapon of financial inclusion via families, firms, and well-designed financial programmes, asserts Ozili (2022).

The authors Demirguç-Kunt and Klapper argue that financial inclusion has the potential to reduce inequality and speed up a country's economic growth (2013). Demirguç-Kunt et al. (2017) noted that people may benefit more from the advancements if they put less emphasis on consumption, saved more for future investments, and were more adventurous. According to the argument for improved financial inclusion in economic growth, rising family income is a direct result of increased investment in assets, which in turn leads to higher household production. Ozili (2022) argues that cultural norms and practices have a significant impact on how individuals see investment options, payment methods, loan availability, and savings.

2.2.3 Vulnerable group theory of financial inclusion

As the most vulnerable population in times of economic downturn, the idea argues that low-income citizens should be the ones to get financial inclusion services. In order to help them have access to finances when they need them, it is vital to integrate them financially in the financial services network. Those who aren't very vulnerable but nonetheless require access to traditional

banking services were not taken into account by the hypothesis (Ozili, 2020).

2.3 Empirical Review

Both rural and urban regions of Nigeria were examined by Taiwo and Omonigho (2023) in relation to financial inclusion. The research employed analysis of variance (ANOVA) to determine the results. The research used a questionnaire to collect data about the frequency, quality, and utilisation of financial inclusion services. Costs associated with accessing financial services have a substantial effect on financial inclusion services, as shown by the statistics. Thus, it is advised that financial services be pushed by raising awareness, educating the public, and offering incentives.

A study conducted in north central Nigeria looked at the connection between financial inclusion and literacy-based poverty reduction (Cholom, Gyang, & Innocent, 2022). Questionnaires were used to gather data for the research, which employed an equation model approach. In this research, economic education and the reduction of poverty served as the independent factors. Findings show that financial education significantly correlates with reducing poverty in North Central Nigeria.

Research by Ozoh, Nwogwugwu, and Nwokoye (2022) looked at how financial inclusion affected household welfare in Nigeria. The research utilised data from the World Bank's Findex 2017 and concentrated on households with members aged 15 and above. They looked at financial inclusion metrics such branch count, ATM usage, mobile money agents, deposit accounts, mobile money accounts, loans, and income quintile as a way to gauge family wellbeing. Consistent with the premise, the results show that financial indicators have a positive effect on household well-being.

According to Ozili (2022), who examined the effects from 2014 to 2017, the only year where financial inclusion in Nigeria rose relative to global Findex measures was 2014. The poorest, the least educated, the oldest, and the most illiterate had the worst performance on all indicators of financial inclusion in 2017. The study found that last year there was a sharp drop in financial inclusion.

In their 2022 study, Arowolo, Ibrahim, Aminu, Olanrewaju Ashimiu, and Kadiri looked at how smallholder farming families in Oyo State, Nigeria, were able to diversify their livelihoods after being financially included. A multistage sampling strategy was used to acquire primary data from a well-structured questionnaire. The data estimation procedure used a questionnaire to recruit 400 people at random. It seems that smallholder farmers were better at juggling several tasks since their revenue came from a variety of sources. The capacity of smallholder farming households to diversify their income streams is positively correlated with the following variables: the age, gender, marital status, and education level of the household head; the number of people living in the household; the total area of land farmed; the primary source of income; the accessibility to credit; and the possession of a bank account.

Eze and Alugbuo (2021) assessed how financial inclusion contributed to alleviating poverty in Nigeria. The analysis relied on secondary data sourced from the 2017 World Bank Global Findex. Access to financial services, especially via self-employment, contributed to the alleviation of poverty in Nigeria, according to the report. Since more individuals should have access to banking services—crucial to a thriving economy—the study recommends that the

government increase its efforts to promote financial inclusion.

Financial inclusion and gender-induced poverty in Nigeria were examined by Bello, Oyedokun, and Adeolu-Akande (2021) from 2002 to 2019. The research used commercial bank deposits, branches, and borrowers as financial inclusion indicators; proxies for poverty reduction were used as the poverty index. The research made use of a unit root test, a method for examining co-integration, and a vector auto regression estimate. Finding that financial inclusion factors statistically decrease poverty in Nigeria (-0.004 and -0.008, respectively) is achieved by analysing the coefficients of commercial bank branches and commercial bank deposits.

Adegbite and Machethe (2020) used smallholder farming in Nigeria to determine the gender gap in access to formal financial services. The results show that there is a significant gender gap in Nigeria when it comes to access to financial services; men had more options than women.

Ayopo, Isola, Okafor, Akhanolu, Achugamonu, and Osuma (2020) looked at the connections and difficulties of financial inclusion for Nigeria's low-income group from 2016 to 2020. All 475 low-income individuals were randomly selected from the six states that comprise Nigeria's South-West geographical zone; 348 of them held an account with a formal financial institution, while 127 did not. Looking at the numbers, it's clear that persons with a bachelor's degree or above, especially males, who are employed, have bank accounts, and can use the internet, benefit more from financial inclusion. Some people are more likely to be financially excluded from the banking system if their income is erratic or if they are unemployed, according to further study. A lack of trust in the bank, excessive bank fees, and expensive maintenance expenses all play a role in this issue.

Using data collected in Nigeria from 2004 to 2019, Aribaba, Adedokun, Oladele, Babatunde, Ahmodu, and Olassehinde (2020) determined the extent to which the financial inclusion approach assisted low-income earners in escaping poverty. Programmes to increase access to financial services in Nigeria increased per capita income and reduced poverty, according to the available empirical data.

Okoye, Adetiloye, Erin, and Modebe (2020) used the ordinary least squares (OLS) approach to assess the influence of financial inclusion on the growth and development of Nigeria's GDP from 1986 to 2015. Based on the data we have, it seems that private sector financing has not significantly increased economic progress in Nigeria.

Ogbeide and Igbinigie (2019) used OLS multivariate regression to determine the impact of financial inclusion on poverty reduction in Nigeria from 2002 to 2015. Higher incomes, lower poverty rates, and better quality of life were all associated with commercial bank branches. There was no statistically significant correlation between the number of people with commercial bank deposits and the decrease of poverty during the reference period. The number of ATMs that promote financial inclusion and the number of people who borrow from commercial banks per 1000 were positively correlated with income output, however this link did not reach statistical significance.

3.0 Methodology

The present study made use of an Expost facto methodology. The reason for this is because the researcher is unable to

influence the outcome as the study is based on data obtained from already-concluded occurrences. Several sources provided the data used for this research. These included the Statistical Bulletin of the Central Bank of Nigeria, the Nigeria Bureau of Statistics, and the World Bank database. Since composite data is only available for the years 2002–2022, that is the timeframe that will be covered in the research. At the 5% level of significance, the research used the following methods: unit root, descriptive statistics, and Autoregressive

Distributed Lag (ARDL). Here is the study's model:

POV = f(BAH, BLRD, NBS, IFR)

$POV_t = \beta_o + \beta_1 BAH_t + \beta_2 BLRD_t + \beta_3 NBS_t + \beta_4 IFR_t + \mu_t$ 3.2

$\beta_1 < 0$, $\beta_2 < 0$, $\beta_3 < 0$, and $\beta_4 > 0$

Where, POV = Poverty index, BLRD = Bank loans to rural dwellers, BAH = Bank account per head, NBS = Number of bank branches, IFR = Inflation rate (as proxy for macroeconomic stability as seen in Vo, Van, & Vo, 2019), β_o = Intercept, β_1, β_2, β_3, and β_4, = Constant parameters, μ_t = Error term

The ARDL Estimates is given as;

$$\Delta POV_t = \beta_1 + \sum_{i=1}^{p} \beta_2 POV_{t-i} + \sum_{i=1}^{q} \beta_3 \Delta BAH_{t-i} + \sum_{i=1}^{q} \beta_4 \Delta BLRD_{t-i} + \sum_{i=1}^{q} \beta_4 \Delta NBS_{t-i} + \sum_{i=1}^{q} \beta_5 \Delta IFR_{t-i} + e_t \quad 3.3$$

4.0 Results and Discussions

Table 4.1 Descriptive Results

	POV	BAH	BLRD	NBS	IFR
Mean	53.22429	104802.0	9272.521	5418.667	12.87048
Median	50.88000	78495.60	8150.885	5454.000	11.98000
Maximum	72.00000	951391.0	18448.66	9984.000	23.80000
Minimum	33.10000	8993.090	954.6288	3010.000	6.600000
Std. Dev.	9.751407	196672.5	5847.763	1633.377	4.410063
Skewness	0.668677	0.255766	0.018752	0.973338	0.864467
Kurtosis	2.260256	1.803875	1.650429	2.464131	2.163050
Jarque-Bera	1.624219	2.554657	1.594906	5.456547	2.638822
Probability	0.443921	0.289423	0.450475	0.065332	0.267293
Sum	1117.710	2200842.	194722.9	113792.0	270.2800
Sum Sq. Dev.	1901.799	7.74E+11	6.84E+08	53358407	388.9731

Source: E-views Output 10

The yearly averages of POVR, BAH, BLRD, NBS, and IFR are 53.22429, 104802.0, 9272.521, 5418.667, and 12.87048. These values are shown in Table 4.1. The maximum and minimum values for POVR, BAH, BLRD, NBS, and IFR are 72.00 and 33.10, 951391.0 and 8993.090, 18448.66 and 954.6288, 9984.00 and 3010.00, and 23.80 and 6.60, respectively. From their averages, POVR, BAH, BLRD, NBS, and IFR deviate by 9.751407%, 196672.5%, 5847.763%, 1633.377%, and 4.410063%, respectively. With skewness values of 0.668677, 0.255766, 0.018752, 0.973338, and 0.864467, respectively, POVR, BAH, BLRD, NBS, and IFR are appropriately characterised. Since their values (2.260256, 1.803875, 1.650429, 2.464131, and 2.163050) are less than 3, POVR, BAH, BLRD, NBS, and IFR are considered platykurtic. With p-values (0.443921, 0.289423, 0.450475, 0.065332, and 0.267293, respectively) above 5%, the J-Bera stat test shows that POVR, BAH, BLRD, NBS, and IFR follow a normal distribution.

Table 4.2: Unit Root Output (ADF)

Variable	ADF t-statistics	Critical Value 5%			Order of Integration	Prob.
		1%	5%	10%		
POV	-4.858720	-3.831511	-3.029970	-2.655194	I(0)	0.0002
BAH	-4.136315	-3.808546	-3.029970	-2.650413	I(0)	0.0050
BLRD	-4.366560	-3.831511	-3.029970	-2.655194	I(1)	0.0033
BBS	-5.615497	-3.857386	-3.040391	-2.660551	1(1)	0.0003
IFR	-4.932926	-3.857386	-3.040391	-2.660551	I(1)	0.0011

Source: Extracted from Eview-10

We found mixed integration when we ran the unit root test on POVR, BAH, BLRD, NBS, and IFR. The ARDL limits test model, as suggested by Peseran, Shin, and Smith (2001), was used as a means to evaluate the model's long-run connectivity, taking into account both the outcomes and the quantity of data.

4.3 ADRL Bounds Test Model.

ARDL Long Run Form and Bounds Test
Dependent Variable: D(POV)

F-Bounds Test — Null Hypothesis: No levels relationship

Test Statistic	Value	Signif.	I(0)	I(1)
			Asymptotic: n=1000	
F-statistic	2.154055	10%	2.45	3.52
k	4	5%	2.86	4.01
		2.5%	3.25	4.49
		1%	3.74	5.06

t-Bounds Test — Null Hypothesis: No levels relationship

Test Statistic	Value	Signif.	I(0)	I(1)
t-statistic	-2.947790	10%	-2.57	-3.66
		5%	-2.86	-3.99
		2.5%	-3.13	-4.26
		1%	-3.43	-4.6

Source: Extracted from Eview-10

To accept the null hypothesis, use an F-statistic less than 1(0), and to accept the alternative hypothesis, use an F-statistic greater than one, according to the ARDL

limits test choice. The F-statistics and the 10%, 5%, 2.5%, and 1% cases were shown in the bound test's results. There is a long-run link among POVR, BAH, BLRD, NBS, and IFR, as shown by the co-integration bounds test findings above. The F-statistics is 2.154055, which is below the crucial values of 1(0) and 1(1) at the 5% level of significance. Consequently, the research just provides estimates for the short-run test.

4.4 ADRL SHORT-RUN MODEL.

Dependent Variable: POV
Method: ARDL
Dynamic regressors (1 lags, automatic): BAH BLRD NBS IFR
Fixed regressors: C
Selected Model: ARDL(1, 0, 0, 0, 1)

Variable	Coefficient	Std. Error	t-Statistic	Prob.*
POV(-1)	0.001860	0.127049	0.014643	0.9887
BAH	1.57E-05	5.33E-06	2.952283	0.0213
BLRD	-0.001864	0.000971	-1.920619	0.0962
NBS	-0.002109	0.001091	-1.933039	0.0945
IFR	0.002204	0.001162	1.897528	0.0996
C	57.60540	7.245333	7.950691	0.0001

R-squared	0.943085	Mean dependent var	51.32684
Adjusted R-squared	0.853646	S.D. dependent var	8.104922
S.E. of regression	3.100634	Akaike info criterion	5.365719
Sum squared resid	67.29752	Schwarz criterion	5.962207
Log likelihood	-38.97433	Hannan-Quinn criter.	5.466669
F-statistic	10.54453	Durbin-Watson stat	1.610081
Prob(F-statistic)	0.002378		

Source: Extracted from Eview-10

The lag of POV is positive (0.001860) but minor (0.9887) compared to the present POV. This explains why the prior period's point of view has no major effect on the present period's point of view, and hence it is not autoregressive. BAH is positive (1.57E-05) and significant (0.0213) in POV. This explains why a one-unit increase in BAH causes an increase in POV of 1.57E-05. BLRD is negative (-0.001864) and negligible (0.0962) in POV. This explains how a one-unit increase in BLRD causes a 0.001864-unit decrease in POV. NBS is negative (-0.002109) and negligible (0.0945) in POV. This explains how a one-unit increase in NBS causes a 0.002109-unit decrease in POV. IFR is positive (0.002204) but negligible (0.0996) from PO's perspective. This explains how a one-unit increase in IFR causes a 0.002204-unit increase in POV.

The corrected R-square reveals that changes in POV are driven by 85.4% of changes in BAH, BLRD, NBS, and IFR, with the remaining 14.6% not accounted for in the model. The Durbin Watson result is 1.610081, indicating that the outcome is within the model's allowed limits. The F-stat p-value of 0.002378 indicates that the model is well-fitted.

4.2 Discussion of Findings

Deposit money bank account per head (DMBAPH) has a significant and beneficial impact on Nigeria's poverty index. This illustrates that an increase in the number of

individuals creating accounts, whether in savings accounts or other types of packages, would worsen the problem of poverty among households in Nigeria. The results are in direct opposition to the study's initial predictions. This might be attributed to the fact that most individuals who open bank accounts only use them for the purpose of withdrawing funds that are provided to them. This conclusion offers substantial support to the research conducted by Okoye et al. (2020), Ogbeide and Igbinigie (2019), and Bello et al. (2021), who argue that financial inclusion plays a crucial role in reducing poverty in Nigeria.

However, the Bank Loan to Rural Area (BLRD) in Nigeria has a detrimental and little effect on poverty reduction. This study provides evidence to a significant degree that augmenting bank loans to rural regions (BLRD) would decrease household poverty in Nigeria, but not to a significant level. Furthermore, it suggests that providing a loan to a rural resident would enable them to make investments, so improving their quality of life by increasing their income. Nevertheless, these loans have requirements such as expensive collateral and interest rates, which prevent them from achieving their intended consequence. This study does not provide substantial evidence to support the research of Okoye et al. (2020), Ogbeide and Igbinigie (2019), and Bello et al. (2021), which argue that financial inclusion plays a crucial role in reducing poverty in Nigeria.

The coefficient of the number of deposit money bank branches (NDMBB) shows a negative correlation and a limited impact on the Nigerian Poverty Index. The financial inclusion plan in Nigeria is effectively reducing poverty by increasing the number of bank branches, which allows more individuals to access cash for business activities. Consequently, they obtain benefits that help them escape poverty. Nevertheless, the lack of proper access to bank branches for rural inhabitants is a serious issue caused by the strategic placement of these branches in limited locations.

While there is a positive correlation between the inflation rate (IFR) and the poverty index, the impact of inflation on poverty is minimal. This suggests that a rise in the inflation rate in Nigeria is likely to lead to an increase in the amount of poverty. This is because inflation erodes the buying power of the population by causing a rise in the cost of goods and services without a corresponding increase in income.

5.0 Conclusion and Recommendations

5.1 Conclusion

The study empirically evaluates how financial inclusion and macroeconomic stability affect poverty reduction in Nigeria from 2009 to 2023. Specifically, the study considered how bank account per head, inflation rate, number of bank branches, and bank loans to rural dwellers influence poverty index. The study employed the descriptive statistics, unit root, and ARDL techniques at the 5% significant level. The study found strong support for bank account per head as the main aspect of financial inclusion that significantly influence poverty index in Nigeria.

Using time series data from the Central Bank of Nigeria statistical bulletin, the World Bank database, and the National Bureau of Statistics, among others. The study's variables included the Poverty Index (PI) as a dependent variable representing household poverty, Deposit Money Bank account per head (DMBAPH), Deposit Money Bank loans to rural areas (DMBLRA), mobile

banking usage (MBU), and the number of Deposit Money Bank branches (NDMBB) as predictor variables. The technique included the Unit Root Test, Autoregressive Distributive Lag Bounds Test, ARDL Error Correction Test, and Granger Causality Test. Using the ADF test, all of the variables utilised yielded mixed stationarity findings of 1(1) and 1(0), facilitating the adoption of the ADRL model. The ARDL test result and bound test outcome suggest the existence of a long-run positive connection between the variables used. The ARDL Error correction test findings demonstrate that all of the variables are both negative and significant with the criterion variable, with the exception of Deposit money banks account per head (DMBAPH), which has a positive and significant association in the model. As a result, the study concludes that financial inclusion is a critical tool for reducing poverty among Nigerian families throughout the study period.

5.2 Recommendations

Given the above conclusion, the study recommends that:

I. Banks could contemplate decreasing the interest rate imposed on rural residents and lowering the requirements for collateral in order to foster financial inclusion and simultaneously alleviate poverty in Nigeria.

II. The bank should contemplate establishing mini-branches in rural regions in order to facilitate a positive kind of financial inclusion that would contribute to the reduction of the poverty index in Nigeria.

References

Adegbite, O. O., & Machethe, C. L. (2020). Bridging the financial inclusion gender gap in smallholder agriculture in Nigeria: An untapped potential for sustainable development. *World Development*, 127, 104755.

Adeleke, O. K. & Olomola, P. A. (2022). An empirical investigation of financial inclusion, poverty and inequality in Nigeria. Redeemer's University Journal of Management and Social Sciences, 5(2), 1-17.

Aggarwal, S., & Klapper, L. (2013). Designing government policies to expand financial inclusion: Evidence from around the world. *The Journal of Finance, 56(3)*, 1029-51.

Alvarez-Gamboa, J., Cabrera-Barona, P., & Jacome-Estrella, H. (2021). Financial inclusion and multidimensional poverty in Ecuador: A spatial approach. *World Development Perspectives*, 22, 1-15.

Aracil, E., Gomez-Bengoechea, G., & Moreno-de-Tejada, O. (2022). Institutional quality and the financial inclusion-poverty alleviation link. Empirical evidence across countries. *Borsa Istanbul Review*, 22(1), 179-188.

Aribaba, F. O., Adedokun, J. O., Oladele, R., Babatunde, A.D., Ahmodu, A.O., Olassehinde S. A. (2020). Financial inclusion scheme and poverty alleviation in Nigeria (2004 – 2019*). Acta Universitatis Danubiu*S, 16(4), 220-233.

Arowolo, A. O., Ibrahim, S. B., Aminu, R. O., Olanrewaju A. E., Ashimiu, S. M. and Kadiri, O. J.(2022). Effect of financial inclusion on livelihood diversification among smallholder farming households in Oyo State, Nigeria.

Nigeria Agricultural Journal, 53(1), 67-75.

Arun, T., & Kamath, R. (2015). Financial inclusion: Policies and practices. *IIMB Management Review,* 27(4), 267-287.

Ayopo, B. A. Isola, L. A., Okafor., T., C., Akhanolu, I., A., Achugamonu, B. U. & Osuma, G. (2020). Financial inclusion among low-income groups in Nigeria triggers and barriers. *Academy of Entrepreneurship Journal*.20(25), 1-10.

Bello, S. A., Oyedokun, G. E., & Adeolu-Akande, M. A. (2021). Financial inclusion and gender-induced poverty in Nigeria. *International Journal of Research in Business and Social Science 10(8,*) 266-274.

Bolarinwa, S. T., Olaoye, O. O., Ullah, W., & Agbi, B. (2021). Does financial development really matter for poverty reduction in Africa? *Forum for Social Economics*, 1, 1-19.

Breuer. A., Janetschek. H., & Malerba. D. (2019). Translating Sustainable development goal (SDG) interdependencies into policy advice sustainability. *MDPI*, 11(7), 1-17.

CBN (2019). Central Bank of Nigeria Annual Report and Statement of Accounts (Various Issues).

Central Bank of Nigeria (2010). National financial inclusion strategy

Central Bank of Nigeria (2020). Annual reports

Chaturvedi, P. (2022). The role of small finance banks in promoting financial inclusion in India. *International Journal of Multidisciplinary*, 7(5), 8-15.

Chollom, P. T., Gyang, P. Y., & Innocent, K. C. (2022). Effect of financial inclusion and literacy on poverty reduction in north central Nigeria*. International Journal Of Economics, Commerce And Management*, 7, 98-110

Cihak, M., Mare, D. S., & Melecky, M. (2016). The nexus of financial inclusion and financial stability: A study of trade-offs and synergies. *Journal of Management Sciences*, 3(7), 1-17.

Demirgüç-Kunt, A. & Klapper, L. (2013). Financial inclusion in Africa: An overview. *Policy Research Working Paper No. 6245*. The World Bank, Washington, D.C.

Demirgüç-Kunt, A., Klapper, L., & D. Singer. (2017). *Financial inclusion and inclusive Growth: A review of recent empirical evidence.* Washington, DC: The World Bank.

Dong, K., Taghizadeh-Hesary, F., & Zhao, J. (2022), "How inclusive financial development eradicates energy poverty in China? The role of technological innovation. *Energy Economics*, 109, 1-16.

Essel-Gaisey, F., & Chiang, T. F. (2022). Turning the tide on environmental poverty in Ghana: Does financial inclusion matter? *Sustainable Production and Consumption*, 33, 88-100.

Eze, E., & Alugbuo, J. C. (2021). Financial inclusion and poverty reduction in Nigeria: A survey-based analysis. *GSC*

Advanced Research and Reviews, 7(3), 075–084.

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

Hannig, A., & Jansen, S. (2010). *Financial inclusion and financial stability*. Current policy issues.

IMF (2018). Nigeria: Selected issues country report, No. 18/64. https://www.imf.org/en/Publications/CR/Issues/2018/03/07/Nigeria-Selected-Issues-4570

Jahan. S. J., Jamaludin. F., Sodsriwiboon. P. & Sullivan. C. (2019). *The financial inclusion landscape in the Asia-pacific region: A dozen key findings*. International Monetary Fund No. 19/79

Kroll. C., Warshold.A. & Pradhan. P. (2019). Sustainable development goals (SDGs): Are we successful in turning trade-offs into synergies? Palgrave Communication 5 (140).

Lusseau. D. & Mancini. F. (2019). Income-based variation in sustainable development goals interaction networks. *Nat Sustain*, 2 242-247.

Mohammed, J. I., Mensah, L., & Gyeke-Dako, A. (2017). Financial inclusion and poverty reduction in Sub-Saharan Africa. *African Finance Journal*, 19(1), 1–22.

Morgan, P., & Pontines, V. (2018). Financial stability and financial inclusion: The case of SME lending. *The Singapore Economic Review*, 63(1), 111-124.

Nigeria Bureau of Statistics (2022). Multidimensional Poverty Index Result.

Ogbeide, S. O., & Igbinigie, O. O. (2019). Financial inclusion and poverty alleviation in Nigeria.. *Accounting and Taxation Review, 3*(1), 42-54.

Okoye, L. U., Adetiloye, K. A., Erin, O., & Modebe, N. J. (2020) Financial inclusion: A panacea for balanced economic development. 28th IBIMA Conference: Theme -Vision 2020: Innovation Management, Development Sustainability, and Competitive Economic Growth. 4384 -4395.

Olaniyi, C. O., Dada, J. T., Odhiambo, N. M., & Vo, X. V. (2022). Modelling asymmetric structure in the finance-poverty nexus: empirical insights from an emerging market economy. *Quality and Quantity*, Vol. 57, 453-487.

OXFAM (2017). Inequality in Nigeria. Exploring the drivers. OXFAM International

Ozili, P. K. (2018). Impact of digital finance on financial inclusion and stability. *Borsa Istanbul Review*, 18(4), 329-340.

Ozili, P. K. (2020). *Financial inclusion research around the world: A review*. In Forum for social economics (pp. 1-23). Routledge.

Ozili, P. K. (2022). Financial inclusion in Nigeria: An overview. *International Journal of Banking and Finance*, *17*(2), 1-24.

Ozoh, N. J., Nwogwugwu, U. C., & Nwokoye, S. E. (2022). Impact of financial inclusion on household welfare in Nigeria. *Asian Journal of Economics, Business and Accounting*, 22(1), *1-18.*

Park, C-Y. & Mercado, R. (2015). *Financial inclusion, poverty and income inequality in developing Asia*. ADB Economics Working Paper Series, No. 426.

Pesaran, H.M., Shin, Y., & Smith, R. (2001). Bounds testing approaches to the analysis of level relationships. *Journal of Applied Econometrics*, *16*(3), 289-326.

Pradhan. P. (2019). Antagonists to meeting the 2030 Agenda. *Nat Sustain* 2, 171-172.

Sarma, M. (2008). *Index of Financial Inclusion*. Indian Council for Research on International Economic Relations Working Paper No. 215

SDG Index and Dashboard report (2019). *The sustainable development goals centre for Africa*. SDG Center for Africa and Sustainable Development Solutions Network.

Taiwo, O. S., & Omonigho, S.U. (2023). Financial inclusion in rural and urban Nigeria: A quantitative and qualitative approach. *International Journal of Economics and Finance,* 15(11), 64-82.

Uruakpa. N. I., Kalu. U. E., & Ufomadu. O. A. (2019). Impact of financial inclusion on economic growth of Nigeria. *International Journal of Sustainable Development*, 12 (2), 46-58.

Vo, A. T., Van, L. T-H., Vo, D. H. (2019). *Financial inclusion and macroeconomic stability in emerging and frontier markets*. Instituto Complutense de Análisis Económico: Working Paper no 1901.