

Financial Inclusion and Poverty Reduction among Rural Women in Sub-Saharan Africa: Evidence from Nigeria

Nduka Elda Vitalis Okolo-Obasi ¹; Emmanuel Ejiofo Nwanmuoh²; Chuka Uzoma Ifediora³; Remigus Amarachi Dike⁴; Innocent Uzochukwu Ozumba⁴; and Anyachebelu Nnamdi Chijioke⁴

¹*Institute for Development Studies, Enugu Campus, University of Nigeria, Nsukka, Nigeria.* ²*Department of Marketing, Faculty of Business Administration, Enugu Campus, University of Nigeria, Nsukka, Nigeria.*

³*Department of Management, Faculty of Business Administration, Enugu Campus, University of Nigeria, Nsukka, Nigeria.* ⁴*Institute of Maritime Studies, University of Nigeria, Nsukka, Nigeria.*

Corresponding author: nduka.obasi.pg82232@unn.edu.ng

DOI: <https://doi.org/10.62154/qjmr.2024.017.010572>

Abstract

The study investigated the impact of financial inclusion on poverty reduction among rural women in sub-Saharan Africa using Nigeria evidence during the period of 2001 to 2022. The research specifically examines the effect of volume of deposit with commercial, micro loan, e-banking (POS and ATM), and non-interest banking on poverty reduction. The result of a multiple regression analysis using Ordinary Least squared OLS) method carried out with data collected from Central Bank of Nigeria (CBN) which covering a period of 22 years (between 2001- 2022) shows that both e-banking and non-interest banking have serious positive link with financial inclusion and have made significant impact on poverty reduction in Nigeria. Also deposit with commercial banks and micro loans has link with financial inclusion but has made no significant impact positive or negative on poverty reduction in Nigeria. Hence, the study recommended that the Government and Central Bank of Nigeria as policy maker and regulatory authority should provide a policy framework that will address the financial exclusion of low-income group particularly in the rural areas.

Keywords: Financial Inclusion, Poverty Reduction, Rural Women, Sub-Saharan Africa, Nigeria.

Introduction

Sub-Saharan Africa a very interesting geography and in the heart of the massive and green landscape, where the beats of life follow the seasons and the pulse of progress beats a bit contrarily, there is a longing for financial empowerment, access to opportunities, and a better tomorrow. This desire is imprinted into the faces of rural communities, where the promise of financial inclusion shines as an inspiration of hope (Uduji et al, 2023; 2024a; 2024b, Nwanmoh et al 2024a; 2024b; 2024c). Africa's rural setting is a needlepoint of miscellaneous cultures, languages, and traditions, but it's also a wall-hanging laced with economic inequalities (Erlando et al, 2020; Ezenwakwelu et al, 2022, Okolo-Obasi & Uduji, 2023). For tons of million rural Africans, accessing basic financial services remains a distant dream (Ukabi et al, 2023; Asongu, 2019a, 2019c). The gap between urban and rural financial

inclusion is evident, but it's a gap that cries for bridging. Studies like Bayero (2015), Ayogu and Agu (2015); Broxiova and Kangoye (2016), Akobeng (2017), Ayambila et al (2017), Agri et al (2018) Akinyemi & Adejumo (2018) Aribaba et al (2019), Uduji and Okolo-Obasi (2020a, 2023b), Central Bank of Nigeria (2023). Taiwo et al (2016) Aja et al (2024), Noted that over 62% of Africans living in the rural communities are not financially included.

In Nigeria, report of the Enhancing Financial Innovation & Access (EFInA) (2020), approximately 38.6% of Nigerians (approximately 75, 600,000 persons) are still financially excluded. While the overall financial exclusion rate declined, the rural-urban divide persists, with rural areas bearing the brunt of exclusion. Hence, deepening financial services by mobilizing savings, facilitating payments and trade of goods and services, and promoting efficient allocation of resources will play a critical role in facilitating economic growth and, directly broadening access to finance, contributing to poverty reduction (Oluwatayo (2014) Obisesan & Adeyonu (2018), Uduji and Okolo-Obasi (2020a, 2020b, 2022c), BitPesa (2023). Financial institutions are better placed to assess and award credit to new business initiatives and through this process, poverty reduction takes place as more poor people get involved in productive business ventures.

Nigeria's government introduced the National Financial Inclusion Strategy (NFIS) in 2012, and promoted it as a key driver in becoming one of the world's largest economies, yet it appears the programmes moves with snail speed (Cicchello et al, 2021) while the goal of NFIS is to decrease the number of Nigerians without access to financial services from 46.3% to 20% by the year 2020, evidence shows that large percentage of Nigerians are still excluded. Despite being Africa's largest economy, only 30% of Nigerian adults have an account at a formal banking institution (Raza et al, 2019; Simatele et al, 2021; Okolo-Obasi & Uduji, 2021; Simatele & Maciko, 2022). Currently, more women are excluded than men especially in the rural communities, hence the yearning by both the middle and low-income earners to be financially inclusive persists (Abel et al, 2018; Njideka, 2021; Salawu & Fasakin, 2023; Uduji and Okolo-Obasi (2024).

The World Bank considers an individual financially included if such person has access to a bank account or digital wallet (mobile money) (Ibekwe et al (2021; Urama, 2023) The 2022 Global Findex Report indicates that about 1,890,000,000 adults are presently unbanked globally and 4% of these are Nigerians. This horrendous happening has two side effects as it promotes de-savings with the financial institutions, and predisposes the low-income earners to save with informal financial institutions like social clubs and other third party, thus engendering risks and financial exclusion (Kabukuru & Afande, 2016; Lakuma et al, 2019). It is on this note that Central Bank of Nigeria introduce a new framework for Non-Interest Financial Institutions to further deepen financial inclusion in Nigeria with the hope that Islamic bank products would help bring into the banking sector a large number of the country's population (especially in the northern parts) that had been coxswained away from organized conventional financial services, due to their aversion to interest and interest-based products (Knomad, 2023). This introduction appears not to have not in the expected way improved financial inclusion of the rural populace.

While financial inclusion, as evidenced by numerous studies, is critical for providing savings, payment, credit, and risk management solutions to people with a variety of requirements, thereby increasing loan formation and capital accumulation and increasing investment and economic activity to reduce poverty, Majority of the rural women in Nigeria are yet fully excluded (Ene, & Inemesit, 2015). This has continually hindered efficient allocation of productive resources and resource use, hence increasing cost of capital for the women (Morsy, 2020; Memon et al, 2022) deterring economic empowerment and inflaming poverty. While financial exclusion of women in Nigeria, its implication on household livelihood and poverty incidence is unknown with certainty, it therefore became necessary to ascertain the effect of financial inclusion and poverty reduction among women in Nigeria.

This study therefore, contributes to the debate on financial inclusion and poverty alleviation with its attempt to answer four basic questions that have received attentions in the financial inclusion literature. Hence, this study attempted to provide answers to:

- What is the rate of deposit with commercial banks and its impact on financial inclusion and poverty reduction in Nigeria?
- What is the impact of micro loan on financial inclusion and poverty reduction in Nigeria?
- Has access to internet banking, POS and ATM impacted on financial inclusion and poverty reduction in Nigeria?
- Has non-interest banking impacted on financial inclusion and poverty reduction in Nigeria?

Hypotheses Development

The credit policy for the poor and rural people involves many practical difficulties arising from the operations of financial institutions and the economic characteristics and financing needs of low-income households (Okeyo et al, 2014). For Example, commercial banking institutions require that borrowers have a stable source of income out of which principal and interest can be paid back according to the agreed terms but the income of many self-employed households is not stable (Olubiyi et al, 2022). Also, while a huge number of micro loans are needed to serve the poor, but banking institutions prefer dealing with big loans in small numbers to minimize administration expenses (Uduji & Okolo-Obasi, 2020; Obidike & Nwanmuoh, 2022).

In Nigeria, the issue of bank fees and charges by commercial banks and high lending rate by micro finance institutes places undue burden on the most vulnerable in the society, discouraging them from depositing their money with the banks or accessing credit facilities (Nizam et al, 2020). Also, the low rate of financial literacy particularly among the rural dwellers making banking and other financial services inaccessible (Chukwu et al, 2023). In addition, low information and inadequate awareness campaign makes access to financial services difficult (Olubiyi, 2022). This affects the level of understanding of financial

transaction and ability of the illiterates to take advantage of the possibilities in financial services such as the use of internet banking, Point of Sale (POS) and Automated Teller Machine (ATM) making the issue of E-channel services like inefficient. At that, most subscribers to e-channels platforms complain of poor services which maybe caused chiefly by poor internet connection, such largely discourage usage (Kairiza et al; 2017; Kim et al,2018). While these challenges manifest itself generally inform of inadequate financial infrastructure especially in the rural areas where the bulk of the financially excluded are found and therefore limits options for accessing financial services, this study hence, hypothesised that:

H01: There is no relationship between the rate of deposit with commercial banks, financial inclusion and poverty reduction in Nigeria

H02: Micro loan has not made any significant impact on financial inclusion and poverty reduction in Nigeria

H03: Access to internet banking, POS and ATM has not impacted on financial inclusion and poverty reduction in Nigeria

H04: Non-interest banking has not made significant impact on financial inclusion and poverty reduction in Nigeria.

Literature and Theoretical Underpinning

The introduction National Financial Inclusion Strategy (NFIS) in 2012 and its promotion as a key driver that will decrease the number of Nigerians without access to financial services from 46.3% to 20% by the year 2022 was a welcome development (Abdullatif et al, 2017; Chris-Nnamchi et al, 2021). These developments present an exciting opportunity for rural people especially the women entrepreneurs to participate in the banking system and other financial platforms (Adeniji, Awe & Okoroafor, 2018). Unfortunately, more women are still excluded currently (Njideka, 2014; Nkwede et al, 2020; Okolo-Obasi & Uduji, 2022). Previous research efforts, Ndako (2010), Adeoye & Evans (2016), Jukan and Softic (2016), Chowdhury et al (2017), Adeola and Evans (2017), Bozkurt et al (2018), Ogochukwu (2019), Chinoda & Kwenda (2019), Nguyen (2020), Jia, Qiu and Yang (2021), Alexander (2021), and Timbile and Kotey (2022) Uduji et al (2019a, 2019b, 2019c, and 2019d) have painstakingly unearthed the interactions of financial inclusion and on the welfare of the poor and the determinants of financial inclusion in developing countries. According to these scholars, 16 determinants include GDP per capita, adult literacy, size of rural population, telephony and internet infrastructure, money supply, population density, income inequality and age dependency ratio. However, following the financial inclusion and poverty reduction indicators, this study assessed the importance of financial inclusion in reducing poverty in Nigeria.

Financial Inclusion and Poverty Reduction

The use of and access to financial services is one of the major drivers of economic growth (Ghosh, 2013; Hendriks, 2019). Financial inclusion covers continuous, important, cost

effective and relevant financial services for the poor population (Lenka, 2017, Okolo-Obasi et al, 2021a). According to the Reserve Bank of India financial inclusion is the process of guarantying access to relevant resources and financial services needed by the low-income group at an affordable price in a transparent manner by the mainstream institutional players. Financial inclusion is achieved by financial literacy and financial capability (Zins & Weill, 2016).

To Khan (2011), Sharma (2016), Pal et al (2022) and Singh (2022) financial inclusion upgrades the financial standard of living for the under privileged and poor people, because it allows them to increase their commitment in their economic activities. Okafor (2012), Babajide et al (2015) Beck (2020), Uduji et al (2021a, 2021b) added that financial inclusion advances the issuance of credit to small-scale enterprises which helps as an engine of maintaining the growth of small-scale enterprises and development because credit provide an important source of income and employment for the poor and especially those in the rural area. Financial inclusion improves efficient distribution of resources through financial intermediation (Hussaini & Chibuzo, 2018). It raises income when the credit is used for an income generating activity and that same activity creates returns in excess of the loan instalment repayments, while it creates asset though the credit finance investment does not generate a significant net profit, but it creates an asset since the clients still has the investment (Lal 2018, 2021).

Poverty on the other hand is a social problem experienced by people having limited economic resources and a low standard of living (Umar, 2013, Thathsarani et al, 2021). Aduda and Kalunda (2012), Abraham (2018) Alhassan et al (2021), Uduji et al (2023) Uduji and Okolo-Obasi (2021) established that poverty is a humiliation to humanity. In Nigeria, the reality of poverty cannot be denied and the intensity of poverty on peoples' life is very alarming and worrisome (Churchill & Smith, 2020). In Nigeria, Aluko (2011), Nkwede (2015), and Okoye et al (2017) noted that the level of poverty is immensely high, with about two thirds of the population below the poverty line especially in rural areas. Poverty is robbing people of their safety, stripping people not only of safe water, adequate food, clothing and shelter, education, and health, but constantly predisposing youths to illegal migration, drug peddling, blood ritual practices and other get rich evil syndromes (Nevin & Omosomi, 2023). Poverty is not just about physical disadvantage; it is also about lack of opportunity and loss of hope, the worst causes of violence either at family level or in the general society (Homaid et al, 2018; Nwanmuoh et al, 2021). Poverty could be absolute or relative. While absolute poverty may be seen as a condition whereby people are unable to obtain adequate resources to get a minimum amount of physical health; relative poverty is a situation where persons cannot afford and enjoy a level of living standard. Alleviating the scourge of poverty entails improving the living conditions of people who are already poor (Klapper et al, 2016). Poverty alleviation may be achieved by increasing income generation which implies people having access to at least micro loans or loan facility from conventional banks for investment and productivity purpose.

Recent Developments in Financial Inclusion and Governance in Nigeria

Recent empirical enquiries Dabwor and Abimiku (2016), Mohammed et al (2017), Koomson et al (2020) adjudged that financial inclusion has prominently manifested in Nigeria with the huge sum of the money in the country residing outside the banking system. The issue of financial inclusion and governance has therefore been a “thorn in the flesh” of the Nigerian government that has received the attention of private individuals and government agencies both within and outside the country (CBN, 2014; Olubiyi et al, 2022; Nwanmuoh et al, 2024). Prior to the recent efforts to promote financial inclusion, the Nigerian economy was largely a cash-based economy with significant proportion of the narrow money stock in the form of currency outside the banking system (Lawal et al, 2023). Although the average ratio of the currency outside the banking sector to narrow money supply plummeted from 61.1 percent in the 1960s to about 44.3 percent in the 1970s and later trended downward to 40.9 percent in the 1980s (Uduji et al, 2020a, 2020b). The decline in the ratio was attributable to a combination of developments such as increased literacy and Government policies directed towards encouraging financial sector growth (Taiwo et al, 2016; Aja et al, 2024).

Since 2005, the Nigerian financial services have witnessed accelerated activities by both the government and the regulatory authorities aimed at deliberately promoting policies that are intended to grow financial inclusion. Such activities include Financial System Strategy 2020; Microfinance Policy; Non-Interest Banking, E-banking Products, Electronic Payment System and Cashless (Cashlite) Polic (Nkwede et al, 2020; FSS 2020).

Microfinance Policy - The government, in 2005 launched the National Microfinance Policy which provided the supervisory and regulatory framework that will not only facilitate the growth of privately-owned microfinance institutions but also permits and facilitate the participation of mostly the third sector institutions, including market associations, cooperatives, non-governmental organisations, self-help groups, in the microfinance model (Ibekwe et al, 2021). These institutions together remain the major vehicle for the inclusion of the large and many users of the informal sector where the bulk of the unbanked exist (Obidike & Nwanmuoh, 2022). By the end of December 2011, following the increased confidence and activities of the microfinance banks, the assets and liabilities of the MFBs had reached N190.7 billion from just N55.1 billion in 2006 (Okoye et al, 2017). The loans and advances given by MFBs also increased from a mere N16.0 billion to over N67.6 billion for the same period. The CBN/Government recently revised the microfinance policy to strengthen the institutions and reposition them for enhanced service delivery creating a more responsive sub-sector (World Bank, 2018; Zetzsche et al, 2020).

Non-interest Banking - The Central Bank of Nigeria CBN introduced a new framework for Non-Interest Financial Institutions (NIFIs) in June 2011 and had granted 2 preliminary licences as at end of December 2011 (Uduji and Okolo-obasi, 2023a; 2023b). The Islamic bank products is expected to help bring into the banking sector a large number of the country's population that had hitherto steered away from the organised conventional financial services, due to their aversion to interest and interest-based products (Umar 2011,

Asongu et al 2020a, 2020b). It was also expected to help to attract foreign direct investment (FDI), especially from the middle East and Southeast Asia where a lot of investors have funds waiting to be invested in Shariah-compliant financial products as evidenced by the exponential growth in international Sukuk (Uduji and Okolo-Obasi, 2017; Nwanmuoh, 2022). It was projected that this specialised form of banking would further deepen Nigeria's financial market.

E-banking Products and Electronic Payment System - The Central Bank of Nigeria has in the recent times stepped-up the campaign for banks to invest heavily in other low-cost branchless channels such as ATMs, point-of sale (POS) etc (Babajide et al, 2015; Nwanmuoh et al, 2022; Urama, 2023) The number of ATMs deployed by end of 2011 stood at 9,640, giving an average of 11 ATMs per 100,000 adults which was a very good development. A review of the level of progress made so far on the CBN cash-less project in Nigeria shows that the number of deployed and active Point of Sale (POS) grew from 5,300 in June 2010 to 68,874 as at December 2021.

To promote the Mobile money mode of payment, the Central Bank of Nigeria, in august 2011, granted licences to 14 mobile payment providers (Chukwu et al, 2023). By end of January 2012, the 14 mobile payment operators were reported to have recorded 35,971 transactions worth N228 million (Okolo-obasi et al 2024). With over 80 million Nigerians known to carry a mobile phone, compared with the between 25 - 30 million banked Nigerians, patronage of this medium of payment has the potential to grow at geometric progression (Ene, & Inemesit, 2015).

Theoretical Underpinning

Systems Theory of Financial Inclusion

This study is anchored on Systems theory of financial inclusion and according to Ozili (2020), the systems theory of financial inclusion states that financial inclusion outcomes are achieved through the existing sub-systems which financial inclusion rely on, and that a greater financial inclusion will have positive benefits for the systems it relies on. To Cull & Morduch (2018), a significant change in a sub-system (one part of the system) can significantly affect the expected financial inclusion outcome. For instance, imposing regulations on economic agents and suppliers of financial services can align their interest with that of the users of basic financial services, and can compel economic agents and suppliers of financial services to offer affordable and quality financial services to users within defined rules that protect users of financial services from exploitation and price discrimination (Bika et al, 2022). In line with this theory, the rural communities will be financially included if the financial regulatory authorities in Nigeria will increase the loan to deposit ratio of commercial and Microfinance bank's loan to rural populace.

Theory of Financial Deepening and Poverty Reduction Link

The issue of finance-poverty reduction through economic development link has received much attention in the literature with divergent views (Panigrahi & Yadav, 2023) but there

are two channels through which financial sector deepening can impact on poverty reduction (Li et al (2022). First is the indirect channel through economic growth and the second is the direct channel through gaining access to financial services. To Christabell and Vimal (2012) Churchill and Marisetty (2020) Chibango (2014), Uduji and Okolo-Obasi (2019), a deep and mature financial system will lead to greater availability of financial services to all levels of society, lead to the increase in money being intermediated (the ratio of money supply to GDP) and increased access to finance. By mobilizing savings, facilitating payments and trade of goods and services, and promoting efficient allocation of resources, the financial sector is seen as playing a critical role in facilitating economic growth which in turn will reduce poverty (ADB, 2009, Arif et al Azimi, 2022). More so, as the financial system performs its function of intermediation, businesses are able to access finance including the SMEs and the Micro businesses, especially in the rural areas (Kuada, 2021). For example, in the present economic situation of Nigeria, many people have gone into agro allied businesses thereby providing employments (Abraham & William (2015). Definitely Ayensu (2017), Uduji & Okolo-Obasi (2018) noted that SMEs labour intensive units employing more people than the bigger factories. It therefore implies that as more businesses access finance, there is room for growth and for more people to be employed thereby reducing poverty.

Materials and Method

Research Design

The study adopted causal-relationship method of research design to investigate the impact of financial inclusion on poverty reduction in Nigeria. It provides an analytical approach to determine the relationship between financial inclusion variables (i.e., Deposit with Commercial Banks, Micro Loan to Individual & Small Businesses, internet banking technology as well as non interest banking transaction in a year) on poverty reduction measured by poverty index and per capita income.

Sources of Data

Data used in this study was obtained from Central Bank of Nigeria (CBN) Publications & Statistical Bulletins, National Bureaus of Statistics (NBS) and World Development Indicators published by the World Bank. The variables for which data were sourced include; deposit with commercial banks, micro loan to individual & small businesses, mobile banking transactions, non interest banking transaction, poverty index and per capita income for the period of 2001 to 2022.

Model Estimation Technique

The analysis in this study was based on time series data due to the linearity nature of the model formulated, Ordinary Least Square (OLS) estimation techniques of regression analysis was employed in obtaining the numerical estimates of the coefficients in the model using Statistical Package for social Science (SPSS).

Model Specification

In order to assess the relationship between the dependent variables and independent variables this study specify poverty reduction as a function of financial inclusion variables such as Deposit with Commercial Bank (DCB), Micro Loans to Individual and Small Businesses (MLN), E-banking Transactions (EBT) and Non-Interest Banking (NIB). Mathematically the equation is as follows.

$PR = f(DCB + MLN + EBT + NIB)$, econometrically, the model is stated thus:

$$PR = \beta_0 + \beta_1 DCB + \beta_2 MLN + \beta_3 EBT + \beta_4 NIB + \mu \quad \text{Equation 1}$$

Because poverty reduction is measured by per capita income (PCI) in Nigeria, this study used a regression model to determine relations between financial inclusion and poverty reduction in Nigeria.

Therefore, the above econometrics model in equation 1 was modified to accommodate the variables in stochastic forms.

$$PCI = \beta_0 + \beta_1 DCB + \beta_2 MLN + \beta_3 EBT + \beta_4 NIB + \mu \quad \text{Equation 2}$$

Where; PCI stands for Per Capital Income in Nigeria, DCB stands for Volume of Deposit with Commercial Banks; MLN indicates Volume of Micro Loans to Individuals and Small Businesses; EBT = Volume of e-based Banking Transaction; NIB = Volume of Non-Interest Banking Transactions and μ represents stochastic error term. Also β_0 stands for constant representing the intercept in the model; $\beta_1 \beta_2 \beta_3 \beta_4$ represent the coefficients of the independent variables in the model.

Analytical Technique

This study employed OLS technique to estimate the multiple regression models because the model is linear in parameters as demanded by the OLS approach (Uduji and Okolo-obasi 2024). The OLS is extensively used in regression analysis primarily because it is appealing and mathematically much simpler than other econometric techniques (Nwanmouh et al, 2023). Also, this method is preferred because of its attractive statistical properties of linearity, un-biasness and efficiency in the class of unbiased estimator which made it one of the most powerful and popular method of estimation.

Pre-Estimation Tests

Unit Root Test: This test is conducted to ascertain the level of stationarity of the variables under consideration, since the time series variables are generated through a stochastic process. Augmented Dickey-Fuller test is applied following the decision rule: if the absolute value of the Augmented Dickey-Fuller (ADF) test is greater than the critical value at 5% level

of significance, 1st difference and 2nd difference, conclude that the variables under consideration are stationary; if otherwise, they are not.

Co-integration Test: The co-integration test is conducted to establish a long run relationship between the variables under consideration. ADF test on the regression residuals is used to test for co-integration among the variables. The ADF unit root test on the residuals works with the same decision rule as unit root test.

Error Correction Mechanism (ECM): An error correction mechanism is a dynamical system with the characteristics that the deviation of the current state from its long-run relationship will be fed into its short-run dynamics. ECM is not a model that corrects the error in another model; the models are a category of multiple time series models that directly estimate the speed at which a dependent variable Y returns to equilibrium after a change in an independent variable X (Wun et al, 2019). ECMs are a theoretically driven approach useful for estimating both short-term and long-term effects of one-time series on another. ECMs are useful models when dealing with co-integrated data but can also be used with stationary data.

Statistical Criteria

This aims at the evaluation of the statistical reliability of the estimates of the parameters. In this line, the R^2 , t-statistics and F-statistics will be employed to test the coefficient, hypotheses overall significance of the regression.

Granger Causality Test: Granger Causality test is conducted to establish the direction of causality among the variables of interest. This test is undertaken to investigate whether there is a degree of causation of one variable on the other. The essence of causality analysis, using the granger causality test, is to actually ascertain whether a causal relationship exists between two variables of interest.

Post-Estimation Test

Multi co-linearity Test: In this study, the test for linear relationship among the variables used in the model would be performed to see if there is high co-linearity among variables or not. This is in line with the assumptions of Classical Linear Regression Model of “no high or perfect multi-co-linearity”. The correlation matrix is used for this test. If the correlation coefficient between two variables exceeds 0.8, then such variables have high multi co-linearity test.

Findings and Discussions

Descriptive Statistics

Analysis (Table 1) indicates that DCB data showed the minimum value of 1.96 and maximum value of 9.80 with the mean 4.1709 while the standard deviation is 1.7674

implying that there is low variation in the data. The MLN mean value is 0.4001 with maximum value of 0.7840 and the minimum value of 0.1633 with a standard deviation value of 0.0949. The standard deviation is lower than the mean value; this indicated that the data have low data variation. The mean showed that the average of micro loans to individuals and small business is 40.01% from all financial institution in Nigeria. For E-Banking Transactions (EBT), the mean or average is 38.4502; for the maximum value of 98.0000 and the minimum value of 0.0000 with a standard deviation of 30.7662. The standard deviation is lower than the mean value; this shows that the data have low variation data. The mean indicated that 38.45% volume of mobile banking transactions.

For Non-Interest Banking (NIB), the mean value is 0.1479; the maximum and minimum values are 0.9441 and 0.0238 respectively and the standard deviation value of 0.0787. The standard deviation is lower than mean value and this indicated that the data have low variation data.

Table 1: Descriptive Statistic Results

Measures	DCB	MLN	EBT	NIB	PCI
Mean	4.170860	0.400105	38.450192	0.147882	0.582538
Median	4.248682	0.392000	40.180000	0.143374	1.000000
Maximum	9.800000	0.784000	98.00000	0.944132	1.000000
Minimum	1.960000	0.163334	0.000000	0.023814	0.000000
Std. Dev.	1.767421	0.094928	30.766169	0.078694	0.481431
Skewness	0.504044	1.030593	0.129406	1.374646	0.376937
Kurtosis	3.256008	3.958785	1.651826	12.79194	1.124982
Observations	22	22	22	22	22

Source: Authors Computation

For Per Capita Income (PCI) descriptive statistics, the mean or the average is 0.5825; the maximum value of 1.0000 and the minimum value of 0.0000 with standard deviation value of 0.4814. The standard deviation is lower than the mean value and this indicated that the data have low variation data. The mean value shows that the Per Capita Income in Nigeria reached 58.25% on average.

Stationarity Test

Table 2: Augmented Dickey Fuller Unit Root Test Results

Variable	ADF Statistics	t - Statistics at 5%	Order of Integration	Remarks
PCI	-5.385092	-2.948404	I(1)	Stationary
DCB	-6.410766	-2.948404	I(1)	Stationary
MLN	-5.831352	-2.948404	I(1)	Stationary
MBT	-4.575883	-2.948404	I(1)	Stationary
NIB	-4.890758	-2.948404	I(1)	Stationary

Source: Authors Computation

The Unit Root Test result (Table 2) shows that 5% level of significance all the variables in the model: Per Capita Income (PCI); Deposit with Commercial Banks (DCB); Micro Loan (MLN); Mobile Banking Transactions (EBT) and Non-Interest Banking (NIB) are integrated of order one i.e. $I(1)$ at first differencing, this indicates the presence of stationarity. To ascertain whether the variables have a sustainable long run relationship or are stable over time Auto Regressive Distribution Lag (ARDL) Bounds of Co-integration test was conducted.

Co-Integration Test

The Co-Integration test result (Table 3) presents the calculated F-Statistics together with the critical bounds values. The result shows that the calculated value of the F-Statistics (i.e. 5.846) for the bound test for co-integration exceeds the upper bound critical value of 4.091 at 5% level.

Table 3: ARDL Bounds Co-Integration Results

Test Statistic	Value	Significance Level	Lower Bound $I(0)$	Upper Bound $I(1)$
F-Statistic	5.846219	10%	2.351	3.469
		5%	2.384	4.091
		1%	2.846	5.636

Source: Authors Computation

This affirms that there is existence of co-integration among the variables – PCI, DCB, MLN, EBT and NIB. Based on this, we conclude that there is support for long-run relationship between the financial inclusion variables and poverty reduction.

Long-Run Parameter of the ARDL Model

Table 4: Long-Run Parameter of the ARDL Model

Variable	Coefficient	Standard Error	t-Statistics	Probability Value
PCI	113.7305	65.562819	27.8127	0.1246
DCB	0.3254	0.040367	12.6465	0.0036
MLN	0.2573	0.030760	9.8145	0.0013
EBT	-0.2314	0.014509	-1.9088	0.0004***
NIB	0.1506	0.023386	0.6287	0.0007***
C	0.0163	0.000528	23.0356	0.6547

Source: Authors Computation

Analysis (Table 4) shows the long-run relationship between the variables. It can be deduced from the table that 1% increase in the volume of Deposit with Commercial Banks (DCB) would yield about 0.33% rise in Per Capita Income (PCI) and also when Micro Loans (MLN) to individuals and small & medium business rises by 1%, PCI by 0.25%. While 1% increase in Mobile Banking Transactions (EBT) would bring about a drop in PCI by 0.23% resulting from

direct relationship between literacy level and poverty and when Non-Interest Banking (NIB) rises by 1%, PCI tends to increase minimally by 0.15% this is a reflection of lower growth rate in Non Interest Banking in Nigeria.

Analysis (Table 5) presents the short run relationship between the variable. The different coefficient in the Error Correction Model (ECM) results shows the different contributions of the respective variable to Poverty Reduction in Nigeria measured by Per Capita Income (PCI). From the result, the coefficient autonomous to PCI is positive; this implies that when all variables are held constant there will be an increased variation to the tune of 15.4931 units resulting in reduction in poverty level in Nigeria. Also, volume of Deposit with Commercial Banks (DCB) and Micro Loans (MLN) produce a significant positive impact on Poverty Reduction to tune of 18.0255 and 24.5821, respectively. While volume of Mobile Banking Transaction (EBT) and Non-Interest Banking (NIB) minimally produce a positive impact on Poverty Reduction as measured by PCI by 5.8701 and 3.7846 units respectively. The result of Error Correction Term ECM (-1) is negative and statistically significant as expected. The ECM (-1) value of -0.35182 indicate an initial distortion in the model, there is convergence towards long-run equilibrium by 35.2% annually. In other words, the speed of adjustment of the dependent variable to equilibrium is 35.2% yearly.

Furthermore, the value of R-Squared (R^2) is 0.5482; this shows that there exists a positive relationship between the explanatory variables (i.e., DCB, MLN, EBT, and NIB) and the dependent variable – Per Capita Income (PCI). While the Adjusted R^2 value show that the explanatory variable explained 51% of the total variation in the dependent variable (PCI). The unexplained variation may be due to other variables not captured in the model.

The t-statistics at 5% significant level i.e., 95% confidence interval shows that DCB is statistically significant at 1.8246 and also MLN is significant at 1.5634. While EBT and NIB are both insignificant at 0.1395 and 0.2478 respectively.

Error Correction Model (ECM) Test

Table 5: Error Correction Model (ECM) Test

Dependent Variable:	PCI		
Method:	Least Square		
Date:	16/12/23	Time:	10:52
Sample:	2001 - 2022		
Included observations:	22		

Variable	Coefficient	Standard Error	t-Statistic	Prob.
C	15.4931	154.3371	9.0765	0.7835
PCI	89.5481	233.4235	2.9518	0.8526
DCB	18.0255	2.3934	2.8246	0.5368
MLN	24.5821	2.8165	2.5634	0.8425
MBT	5.8701	0.3566	0.2395	0.4564
NIB	3.7846	0.5256	-1.2478	0.5962
ECM(-1)	-0.3518	0.0255	-5.3248	0.0000
R-Squared	0.5482	Mean dependent var		5.34E-17
Adjusted R-Squared	0.5073	S.D dependent var		48.6361
S.E of regression	543.2734	Akaike info criterion		14.3855
Sum squared resid.	15148109	Schwarz criterion		14.5631
Log likelihood	-24.6330	Hannan-Quinn criterion		14.1375
F-statistic	2.9351	Durbin Waston		1.7863
Prob (F-statistic)	0.8930			

Source: Authors Computation

The F–statistics on the other hand, gives a value of 2.9351 which shows that there is joint significance of the parameter estimated and this confirms that the estimate is statistically significant at 5% level of significance. This implies that the model has a good fit. Also, the Durbin Watson is at 1.7863 this signifies that there is positive autocorrelation in the disturbance or error term.

Granger Causality Test**Table 6:** Pairwise Granger Causality Test Result

Date: 16/12/23 Time: 14:13

Sample: 2001 2022

Lags: 2

Null Hypothesis:	Obs	F-Statistic	Probability
DCB does not Granger Cause PCI	22	1.48604	0.2473
PCI does not Granger Cause DCB		1.23869	0.3209
MLN does not Granger Cause PCI	22	2.58124	5.E-03
PCI does not Granger Cause MLN		0.38206	0.6319
MBT does not Granger Cause PCI	22	0.36327	0.6803
PCI does not Granger Cause MBT		0.53725	0.5725
NIB does not Granger Cause PCI	22	2.65517	0.0735
PCI does not Granger Cause NIB		0.30135	0.5643
DCB does not Granger Cause MLN	22	4.38872	0.0278
MLN does not Granger Cause DCB		4.85452	0.0324
DCB does not Granger Cause MBT	22	1.43357	0.6574
MBT does not Granger Cause DCB		0.13249	0.5483
MLN does not Granger Cause MBT	22	1.06523	0.3124
MBT does not Granger Cause MLN		0.43900	0.4729
MLN does not Granger Cause NIB	22	2.04378	0.0732
NIB does not Granger Cause MLN		1.53565	0.3145
NIB does not Granger Cause DCB	22	3.40479	0.0281
DCB does not Granger Cause NIB		0.24218	0.8437
MBT does not Granger Cause NIB	22	2.14857	0.0854
NIB does not Granger Cause MBT		4.35413	0.0030

Source: Authors Computation

The result of the Granger Causality Test indicates that there are unidirectional relationships between PCI and DCB, MLN, MBT and NIB with causality runs from DCB to PCI, MLN to PCI, EBT to PCI and NIB to PCI.

Test of Hypotheses

Hypothesis I: *There is no relationship between the rate of deposit with commercial banks, financial inclusion and poverty reduction in Nigeria.* The t-statistics (calculated value) = 2.825 and t-statistics (tabulated value) = 2.093 at 5% significant level. As the decision rule states that, we accept the hypothesis if t-stat(cal) is greater than t-stat(tab), and here, the t-cal of 2.825 is higher than the t-tab of 2.093 at 5% significance level. We therefore accepted the null hypothesis and concluded that deposit with commercial banks has not made a significant impact on financial inclusion to affect poverty reduction in Nigeria.

Hypothesis II: *Micro loan has not made any significant impact on financial inclusion and poverty reduction in Nigeria.* The t-statistics (calculated value) = 2.563 and t-statistics (tabulated value) = 2.093 at 5% significant level. As the decision rule states that, we accept the hypothesis if t-stat(cal) is greater than t-stat(tab), and here, the t-cal of 2.563 is higher than the t-tab of 2.093 at 5% significance level. We therefore accepted the null hypothesis and concluded that micro loan has not made any significant impact on financial inclusion and poverty reduction.

Hypothesis III: *Access to internet banking, POS and ATM has not impacted on financial inclusion and poverty reduction in Nigeria.* The t-statistics (calculated value) = 2.031 and t-statistics (tabulated value) = 2.093 at 5% significant level. As the decision rule states that, we accept the hypothesis if t-stat(cal) is greater than t-stat(tab), and here, the t-cal of 2.031 is higher than the t-tab of 2.093 at 5% significance level. We therefore rejected the null hypothesis and concluded Access to internet banking, POS and ATM has not impacted on financial inclusion and poverty reduction in Nigeria.

Hypothesis IV: *Non-interest banking does not have a significant relationship on poverty reduction in Nigeria.* The t-statistics (calculated value) = 1.248 and t-statistics (tabulated value) = 2.093 at 5% significant level. As the decision rule states that, we accept the hypothesis if t-stat(cal) is greater than t-stat(tab), and here, the t-cal of 2.031 is higher than the t-tab of 2.093 at 5% significance level. We therefore rejected the null hypothesis and concluded that Non-interest banking does not have a significant relationship on poverty reduction in Nigeria.

Generally, this study revealed that financial inclusion exerts significant impact on poverty reduction as measured by per capita income and improve the standard of living in the rural Nigeria. This finding agrees with Ayogu and Agu (2015), Hussaini and Chibuzo (2018) and Ibekwe et al (2021) in that increase in financial inclusion increases saving, thereby enhancing investment and increase in investment reduces poverty. However, on specific note, deposit with commercial banks and micro loans have not exert significant impact but have equally no negative contribution to the reduction in poverty level. While this finding refutes the assertion of Nkwede (2015), Abraham and William (2015), it is in line with Hussaini and Chibuzo (2018) Alhassan et al (2021) Nwanmuoh et al (2024a 2024b, 2024c),

in that micro loan to low-income earner and small business owners should increase per capita income and by extension reduces poverty level. However, the administrative bottlenecks attached to micro loans in Nigeria have force would-be borrowers, especially at rural community level to look the way money lender due to easy access (Uduji et al, 2018). Unfortunately, the local money lenders in their greedy attitude divest the rural Nigerians of the profit made in their investment leading to a vicious cycle of poverty.

E-banking transaction measured with access to ATM and POS is found to exert insignificant and positive impact on financial inclusion and poverty reduction in Nigeria. The finding agrees with Okoye et al (2017) Churchill and Smith (2020), in that such has made access to remittances from abroad easier to the rural people. This simply follows that with the level of remittance flowing to the rural communities which are accessible through the E-banking platforms, access to finances increases thereby increasing investment without borrowing which in turn reduced poverty. Also, the result of the study noted that, non-interest banking positively enhances financial inclusion and poverty reduction and were statistically insignificant under the reference period. This while disproving Babajide et al (2015), Ukabi et al (2023), equally confirms that positions of Nwanmuoh et al (2023), Salawu and Fasakin (2023), Lawal et al (2023) in that; funds like sukuk fund of the Islamic banks have helped many rural dweller and farmers especially in the northern Nigeria to increase their investment in productive ventures. This investment in turn increases availability and affordability of basic need, hence, to a reasonable extent poverty is reduced.

Concluding Remarks

In conclusion, the findings of this study indicated that financial inclusion of the rural women is a major tool in the alleviation of household poverty in rural Nigeria. Therefore, Policy Makers (the Government), Regulatory Authorities (the Central Bank of Nigeria) and the Financial management institutions should pursue the followings: improved access to POS and registration of more providers to enhance provision of the machines required. Also if commercial banks will increase the rural penetration, such will improve access of financial services and will improve the culture of savings of earnings of rural dwellers and this will translate into re-investment which will further reduce the poverty level in Nigeria. Hence, it is expedient that, microfinance institutions should be more strengthened to make available credit to lower income groups so as to improve their access to financial services, which in turn will enable them to partake in productive activities and experience increased standard of living.

Declaration of Conflicting Interests and Funding

The authors declared no potential conflicts of interest with respect to the research, authorship and/ or publication of this article. Also, this work was fully self-sponsored by the Authors as we received no funding from any source.

References

- Abdullatif, A.S., Omar, R.B., & Udin, M.B.M. (2017). Theories of poverty to the integrative theory: A comparative analysis: accordance to the situation of Iraq. *Journal of Humanities and Social Science*, 22 (5), 47-50.
- Abel, S., Mutandwa, L. & Le, R. P. (2018). A Review of Determinants of Financial Inclusion. *International Journal of Economics and Financial Issues*, 8(3): 1–8.
- Abraham T. A. and William M. F. (2015). Financial Innovation and Poverty Reduction: Evidence from Northern Nigeria. *Working paper series African Microfinance Week*.
- relationship between financial sector development and unemployment in Nigeria, *Asian Economic & Financial Review*, 3(10), 1361- 1370.
- Alhassan T. F., Guryanov S. A., and Kouadio A. J., (2021). The impact of mobile money, remittances, and financial development on innovative growth in sub-Saharan Africa. *Econ. Reg.*, 8(4), 363–384, doi.org/10.17059/EKON.REG.2021-1-21
- Arif, I., Afshan, S., & Sharif, A. (2016). Resistance to mobile banking adoption in a developing country: evidence from modified TAM. *Journal of Finance and Economics Research*, 1(1), 25–42. <https://doi.org/10.20547/jfer1601104>
- Asongu, S.A., Uduji, J.I., and Okolo-Obasi, N.V.E. (2020a). "Political Instability and Political Terror: Global Evidence on Persistence" *Journal of Public Affairs*, 20(3): e2119, <http://doi:10.1002/pa.2119>
- Asongu, S.A., Uduji, J.I., and Okolo-Obasi, N.V.E. (2020b). "Foreign Aid Volatility and Lifelong Learning" *International Journal of Education Economics and Development*, 11(4): 370-406, <http://doi:10.1504/IJED.2020.10030587>
- Asongu, S.A., Uduji, J.I., and Okolo-Obasi, N.V.E. (2019a). "Homicide and Social Media: Global Empirical Evidence". *Technology in Society*, 59 (November) 101188, <https://doi.org/10.1016/j.techsoc.2019.101188>
- Asongu, S.A., Uduji, J.I., and Okolo-Obasi, N.V.E. (2019b). "Transfer Pricing and Corporate Social Responsibility: Arguments, views and Agenda" *Mineral Economics*, 32(3): 353-363, <https://doi:10.1007/s13563-019-00195-2>
- Asongu, S.A., Uduji, J.I., and Okolo-Obasi, N.V.E. (2019c). "Thresholds of External Flows for Inclusive Human Development in sub-Saharan Africa" *International Journal of Community Well-Being*, 2(2-4): 213-233, <https://doi:10.1007/s42413-019-00037-7>
- Ayensu A. E. (2017). The Impact of Financial Inclusion On Poverty Reduction In Some Selected Sub-Saharan Africa Countries.
- Ayogu, D. U. & Agu, E. O. (2015). Assessment of the contribution of women entrepreneur towards entrepreneurship development in Nigeria. *International Journal of Current Research and Academic Review*, 3(10):190-207
- Azimi M. N. (2022). New insights into the impact of financial inclusion on economic growth: A global perspective. *PloS one*, 17(11), e0277730.
- Babajide, A. A., Adegboye, F. B., & Omankhanlen, A. E. (2015). Financial inclusion and economic growth in Nigeria. *International Journal of Economics and financial issues*, 629-637.
- Beck, T. (2020). Fintech and Financial Inclusion: Opportunities and Pitfalls", Development Bank Institute, July. Fintech and Financial Inclusion: Opportunities and Pitfalls", ADBI Working Paper, no 1165, Tokyo: As. ADBI Working Paper, no 1165, Tokyo: Asian Development Bank Institute, July.
- Bika, Z., Subalova, M., & Locke, C. (2022). Microfinance and small business development in a transitional economy: Insights from borrowers' relations with microfinance organisations in Kazakhstan. *The Journal of Development Studies*, 58(1), 183-203
- Central Bank of Nigeria (2023). National Financial Inclusion Strategy Summary Report. 23.

- Chris-Nnamchi J. N, Ifediora C. U., Nwanmuoh, E.E. Eneh N. C. J. (2021). Assessing the Online Shopping Behaviour of Nigerian Youths International Journal of Science and Management Studies 4(3),105-114: 10.51386/25815946/ijsms
- Chukwu, K. O, Ngini, S O, Nwanmuoh, E.E., Elechi, S J., and Akunna, C.R. (2023) Causal Relationship between Fiscal Responsibility Act and Economic Growth of Nigeria (1997-2021) International Journal of Advanced Multidisciplinary Research 3(2):401-408
- Churchill S. A and Smith R. (2020). Financial inclusion and poverty: Micro level evidence from Nigeria.
- Churchill, S.A. and Marisetty, V.B. (2020), Financial inclusion and poverty: a tale of forty-five thousand households. *Applied Economics*, 52(16), 1777-1788, doi: 10.1080/00036846.2019.1678732
- Divya, K. (2014), Banks on wheels for financial inclusion: A case study. *International Journal of Research in Computer Applications and Management*, 4 (9), 36-40
- Dabwor, T., & Abimiku, A.C. (2016). Poverty incidence in Nigeria: does financial deepening matter? *Journal of Economics and International Finance*, 8 (6), 56-65.
- Ene, E. E., & Inemesit, U. A. (2015). Impact of microfinance in promoting financial inclusion in Nigeria. *Journal of Business Theory and Practice*, 3(2), 139-158.
- Erlando A., Riyanto F. D., and Masakazu S., (2020). Financial inclusion, economic growth, and poverty alleviation: evidence from eastern Indonesia, *Heliyon*, 6(10).
- Ezenwakwelu, C. A., Nwakoby, I.C., Egbo, O.P., Nwanmuoh, E. E., Duruzo, C. E, and Ihegboro I. M. (2022). Business Ethics and Organisational Sustainability. *International Journal of Entrepreneurship* 24(3),1-12
- Gabor, D., & Brooks, S. (2017). The digital revolution in financial inclusion: international development in the Fintech era. *New Political Economy*, 22(4), 423-436. Gupta, P., & Singh, B. (2013). Role of literacy level in financial inclusion in India Empirical evidence. *Europe*, 10-4.
- Hussaini U. and Chibuzo I. (2018). The effects of financial inclusion on poverty reduction: The moderating effects of microfinance. *International Journal of Multidisciplinary Research and Dev.*
- Ibekwe, A. O; Ogonnia, A. A.; Ibekwe, A. I.(2021). Financial Inclusion and Entrepreneurship Development in Nigeria. *JETMASE Vol 3(1): 90 –104*
- Jayakumari, A.G. (2015), Financial inclusion: An Indian outlook, Research. *Journal of Social Science & Management*, 4(11) 1-5.
- Koomson I, Villano R. A. and Hadley D. (2020) Effect of Financial Inclusion on Poverty and Vulnerability to Poverty: Evidence Using a Multidimensional Measure of Financial Inclusion. *Soc Indic Res* 149, 613–639 <https://doi.org/10.1007/s11205-019-02263-0>
- Kuada, J. E. (2021). Financial inclusion and small enterprise growth in Africa: Emerging perspectives and research agenda, AGDI Working Paper, No. WP/21/084, African Governance and Development Institute (AGDI), Yaoundé
- Lal, T. (2021), Impact of financial inclusion on economic development of marginalized communities through the mediation of social and economic empowerment, *International Journal of Social Economics*, 48(12),1768-1793. <https://doi.org/10.1108/IJSE-12-2020-0830>
- Lawal, A.T. Olubiyi, T. O. & Bello F. (2023). Financial Inclusion and Rural Entrepreneurship: Demand-Side Review of Central Bank of Nigeria Programmes for Small and Medium-Sized Enterprises. *International Journal of Accounting and Management Sciences*. 2(4), 377-394 <https://doi.org/10.56830/IJNZ1133>
- Lakuma, C. P., Marty, R. & Muhumuza, F. (2019): Financial Inclusion, Micro, Small and Medium Enterprises Growth in Uganda. *Journal of Innovation and Entrepreneurship* 8(15).
- Lenka S. K. and Sharma R. (2017). Does Financial Inclusion Spur Economic Growth in India? *Journal of Developing Areas*, 51(1), 215–228, 2017, <https://doi.org/10.1353/jda.2017.0069>

- Memon, A., Akram, W., Abbas, G., Chandio, A. A., Adeel, S., & Yasmin, I. (2022). Financial Sustainability of Microfinance Institutions and Macroeconomic Factors: A Case of South Asia. *South Asian Journal of Macroeconomics and Public Finance*, 11(1), 116-142
- Mohammed I. J, Mensah L and Gyeke-Dako A. (2017). Financial Inclusion and Poverty Reduction in Sub-Saharan Africa. *African Finance Journal, Volume 19 Part 1*.
- Nizam R., Karim Z. A., Rahman A. A., and Sarmidi T., (2020). Financial inclusiveness and economic growth: new evidence using a threshold regression analysis. *Economic research-ekonomska istrazivanja*, 33(1), 1465– 1484, <https://doi.org/10.1080/1331677X.2020.1748508>
- Nkwede, F. (2015). Financial Inclusion and Economic Growth in Africa: Insight from Nigeria. *European Journal of Business and Management*, 7(35).
- Nwanmuoh, E.E., Okolo-Obasi, N.E.V., Anene, J.N., Uwakwe, I.V., Udu, F.T, Amuka, I. and Emeter, P.O. (2024c). Agricultural Marketing and Sustainable Household Food Security in Sub-Saharan Africa: Evidence from Nigeria. *African Journal of Agricultural Science and Food Research* 17(1),225-248 <https://doi.org/10.62154/ajasfr.2024.017.010501>
- Nwanmuoh, E.E., Okolo-Obasi, N.V.E., Dibua, E.C., Udu, F.T., Amuka, I., and Emeter, P.O. (2024b). Public Relations Practitioners Leadership Skills as Determinants of Effective Communication in Organizations: Setting the Agenda with Evidence from South-East, Nigeria. *African Journal of Management and Business Research* 16(1),206-232 <https://doi.org/10.62154/ajmbr.2024.016.010433>
- Nwanmuoh, E.E., Okolo-Obasi, N.E.V., Imo, G.I., Udu, F.T and Emeter, P.O. (2024a). Public Relations Political Advertising Campaign and Voters' Attitude: Evidence from 2023 General Election in South-East Nigeria. *African Journal of Humanities and Contemporary Education Research* 15(1),342-367 <https://doi.org/10.62154/fba92141>
- Nwanmuoh E.E., Chi, A.N., Ogbuka,J.C., Ifediora, C., Ugbam, C. O., and Imo,G.I. (2023). Effect of public relations planning on human resource management performance of the Independent National Electoral Commission in Nigeria. *Cogent Social Sciences* (2023), 9: 2222571 <https://doi.org/10.1080/23311886.2023.2222571>
- Nwanmuoh, E.E., Dibua, E.C., Amaife, H. T., Obi-Okonkwo, L. C., and Abdulganu. M. (2022). Public Relations: An Effective Tool for Gender Equality and National Development. *International Journal of Science Academic Research* 3 (2), 3451-3455.
- Nwanmuoh, E.E., Dibua, E. C., Amaife, H. T. and Obi-Okonkwo, L. C. (2021). Public Relations Strategies: A Veritable Tool for Conflict Resolution, Peace Building, Democracy and National Development. *International Journal of Science Academic Research* 2(7),1893-1897
- Nwanmuoh, E.E. (2020). Rethinking Public Relations and Community Development in Nigeria. *International Journal of Innovative Development and Policy Studies* 8(3):77-82.
- Nwanmuoh, E. E., Dibua, E. C., Onyegbuna, C. M., & Friday, E. C. (2024). Information Communication Technology (ICT) and the Effective Growth of SMEs in Anambra State, Nigeria. *International Journal of Capacity Building In Education And Management*, 6(5), 19-30
- Obidike, E. E. and Nwanmuoh, E. E. (2022). A Comparative Assessment of the Implementation of Integrated Coastal Zone Management Policies in Developing Countries. *Global Scientific Journals* 10(7),2141-2159
- Obisesan, A. &Adeyonu, A. (2018). Financial Inclusion of Arable Crop Farmers in Nigeria. Paper Presentation at the 30th International Conference of Agricultural Economist held at Vancouver July 28- August 2, 2018.
- Okolo-Obasi, N.V.E., Nwanmuoh, E.E., Iyke-Ofoedu, M.I., Okoro, D. P., Ikpo, K.P., Ezuke, C.S., Ogbu-Nwali, O and Emeter, P.O. (2024a). Government Policies and Business Start-Ups in Sub Saharan Africa: The Fate of Entrepreneurship Among Young People in Nigeria. *African Journal of Management and Business Research*, 17(1),378-400.

- Okolo-Obasi, N.V.E., Nwanmuoh, E.E., Nkwonta, N., Iyke-Ofoedu, M.I., Okoro, D.P., Ikpo, K.P., Ogbu-Nwali, O., Ezuke, C.S., Ewelukwa, O.N., Emezue, I.J. (2024). The Impact of "Jakpa" on Educational, Healthcare and Housing Development of Rural Communities in Nigeria: Evidence from South-Eastern Region. *African Journal of Humanities & Contemporary Education Research* 17(1), 333 – 360 <https://doi.org/10.62154/ajhcer.2024.017.010535>
- Okolo-obasi, N.V.E., Nwanmouh, E.E., Anene, J.N., Uwakwe, I.V., Udu, F.T., Nkwonta, N., Okoro, D.P., Ikpo, K.P. (2024) "Strategic Public Relations Practices and Consumer Buying Behaviour in sub-Saharan Africa: A study of Nigeria's Fast Moving Consumer Goods Industry" *African Journal of Management and Business Research* 17(1)356-377. <https://doi.org/10.62154/ajmbr.2024.017.010533>
- Okolo-Obasi, E. N., & Uduji, J. I. (2023). Government enterprise and empowerment program (GEEP) and women's performance in entrepreneurship development in Nigeria, *Development in Practice*, <https://doi.org/10.1080/09614524.2023.2178639>
- Okolo-Obasi, N.V.E. and Uduji, J.I. (2022). The Impact of National Home Grown School Feeding Programme (NHGSFP) on Rural Communities in Nigeria. *Journal of Economic and Administrative Sciences*, <https://doi.org/10.1108/JEAS-10-2021-0211>
- Okolo-Obasi, N.V.E., Uduji, J.I. and Asongu, S.A. (2021a). Strengthening Women's Participation in the Traditional Enterprises of sub-Saharan Africa: The Role of Corporate Social Responsibility Initiatives in Niger Delta, Nigeria. *African Development Review*, 32: S78-S90, <https://doi.org/10.1111/1467-8268.12484>
- Okolo-Obasi, N.V.E. and Uduji, J.I. (2021). Does Agri- Business/ Small and Medium Enterprise Investment Scheme (AGSMEIS) Impact on Youth Entrepreneurship Development in sub-Saharan Africa? Evidence from Nigeria. *Journal of Economic and Administrative Sciences*, <https://doi.org/10.1108/JEAS-05-2021-0094>
- Okoye, L. U., Adetiloye, K. A., Erin, O., & Modebe, N. J. (2017). Financial Inclusion as a Strategy for Enhanced Economic Growth and Development. *Journal of Internet Banking and Commerce*, 22(S8), 1-14
- Olubiyi, T.O.; Jubril, B.; Sojinu, O.S.; Ngari, R. (2022). Strengthening gender equality in small business and achieving sustainable development goals (SDGs), Comparative analysis of Kenya and Nigeria. *Sawala Jurnal Administrasi Negara*, 10(2), 168-186.
- Panigrahi, S.K. & Yadav, K.P. (2023). A Study on the Impact of Financial Inclusion on Rural Development in Odisha. Tuijin Jishu. *Journal of Propulsion Technology* 44(2),639-652
- Salawu M. B. & Fasakin I. J. (2023). Financial Inclusion and Choice of Business Enterprises Among Entrepreneurs in Rural Nigeria. *Russian Journal of Agricultural and Socio-Economic Sciences* 10(142), 109-119: 10.18551/rjoas.
- Sharma, D. (2016). Nexus between financial inclusion and economic growth: Evidence from the emerging Indian economy. *Journal of Financial Economic Policy*, 8(1), 13–36
- Thathsarani, U., Wei, J., & Samaraweera, G. (2021). Financial Inclusion's Role in Economic Growth and Human Capital in South Asia: An Econometric Approach. *Sustainability*, 13(8), 4303. doi:10.3390/su13084303
- Uduji, J.I. and Okolo-Obasi, N.V.E. (2024). Nigeria for Women Project (NFWP) and social cohesion in rural livelihoods. *Journal Of Enterprising Communities People and Places in the Global Economy* <http://doi.org/10.1108/JEC-01-2024-0010>
- Uduji, J.I., Okolo-Obasi, N.V.E., Uduji J.U., Emengini, S. E., Odoh L.C., Iyadi, R. (2024a). Capacity Development for Small Scale Women Entrepreneur and Corporate Social Responsibility in Nigeria's Niger Delta Region. *Social Responsibility Journal* <http://doi.org/10.1108/SRJ-03-2024-0199>
- Uduji, J.I., Okolo-Obasi, N.V.E., Nnabuko, J.O., Ugwuonah, G.E. and Onwumere, J.U. (2024b). Inter-communal violence in sub-Saharan Africa: The role of corporate social responsibility in Nigeria's oil producing region. *Recourses Policy Journal*, <https://doi.org/10.1016/j.resourpol.2024.104882>

- Uduji, J.I., Okolo-Obasi, N.V.E., Nnabuko, J.O., Ugwuonah, G.E. and Onwumere, J.U. (2023). Mainstreaming gender sensitivity in cash crop market supply chain: the role of CSR in Nigeria's oil producing community. *Journal of Agribusiness in Developing and Emerging Economies*, <https://doi.org/10.1108/JADEE-09-2023-0228>
- Uduji, J.I. and Okolo-Obasi, N.V.E. (2023a). Government Enterprise and Empowerment Programme (GEEP) and Women's performance in Entrepreneurship Development in Nigeria. *Development in Practice*, <https://doi.org/10.1080/09614524.2023.2178639>
- Uduji, J.I. and Okolo-Obasi, N.V.E. (2023). Analysis of Rural Women's Access to Financial Services and Corporate Social Responsibility in Nigeria's Niger Delta region. *African Journal of Science, Technology, Innovation and Development*. <https://doi.org/10.1080/20421338.2023.2296673>
- Uduji, J.I. and Okolo-Obasi, N.V.E. (2023b). Gender and Food Security in Nigeria: The Role of Corporate Social Responsibility in the Oil Producing Communities. *Journal of Global Responsibility*, 15(1): 125-150 <https://doi.org/10.1108/JGR-07-2022-0067>
- Uduji, J.I. and Okolo-Obasi, N.V.E. (2022a). Gender-Sensitive Responses to Climate Change in Nigeria: The Role of Multinationals' Corporate Social Responsibility in Oil Host Communities. *Journal of Global Responsibility*, 14(1): 89-110, <https://doi.org/10.1108/JGR-05-2022-0040>
- Uduji, J.I. and Okolo-Obasi, N.V.E. (2022b). Gender Inequalities in Rural Labour Markets: The Role of Corporate Social Responsibility in Niger Delta, Nigeria. *Journal of Enterprising Communities: People and Places in the Global Economy*, <https://doi.org/10.1108/JEC-05-2022-0073>
- Uduji, J.I. and Okolo-Obasi, N.V.E. (2022c). Building Social Capital through Rural Women's Groups: The Role of Corporate Social Responsibility in Oil Host Communities. *Journal of Business and Socio-economic Development*, <https://doi.org/10.1108/JBSED-07-2022-0079>
- Uduji, J.I., Okolo-Obasi, N.V.E. and Asongu, S.A. (2021a). Sustainable Peacebuilding and Development in Nigeria's Post-Amnesty Programme: The Role of Corporate Social Responsibility in Oil Host Communities. *Journal of Public Affairs*, 21:e2200, <http://doi:10.1002/pa.2200>
- Uduji J.I. and Okolo-Obasi, N.V.E. (2021). Empowerment of Rural Young People in Informal Farm Entrepreneurship: The Role of Corporate Social Responsibility in Nigeria's Oil Producing Communities. *Journal of Enterprising Communities: People and Places in the Global Economy*, 16(6):924-947, <https://doi/10.1108/JEC-04-2021-0054>
- Uduji, J.I., Okolo-Obasi, N.V.E. and Asongu, S.A. (2021b). Does Growth Enhancement Support Scheme (GESS) Contribute to Youth Development in Informal Farm Entrepreneurship? Evidence from Rural Communities in Nigeria. *Journal of Enterprising Communities: People and Places in the Global Economy*, 15(3):451-476, <http://doi:10.1108/JEC-06-2020-0116>
- Uduji J.I. and Okolo-Obasi, N.V.E. (2020). Youth Empowerment in Non-Timber Forest Products (NTFPs) of sub-Saharan Africa: The Role of Corporate Social Responsibility in Niger Delta, Nigeria. *Journal of Enterprising Communities: People and Places in the Global Economy*, 14(5): 729-752, <https://doi/10.1108/JEC-08-2017-0066>
- Uduji, J.I., Okolo-Obasi, N.V.E. and Asongu, S. A. (2020a). Sustaining Cultural Tourism through Higher Female Participation in Nigeria: The Role of Corporate Social Responsibility in Oil Host Communities. *International Journal of Tourism Research*, 22(1):120-143, <https://doi.org/10.1002/jtr.2323>
- Uduji, J.I., Okolo-Obasi, N.V.E. and Asongu, S.A. (2020b). Analysis of Farmers' Food Price Volatility and Nigeria's Growth Enhancement Support Scheme. *African Journal of Science, Innovation and Development*, 13(4): 463-478, <https://doi.org/10.1080/20421338.2020.1814516>
- Uduji, J.I. and Okolo-Obasi, N.V.E. (2019). Corporate Social Responsibility in Nigeria and Youth in Sustainable Traditional Industries Livelihood in Oil Producing Communities. *Journal of International Development*, 31(7): 658-678, <https://doi:10.1002/jid.3432>

- Uduji, J.I., Okolo-Obasi, N.V.E. and Asongu, S. A. (2019a). Does CSR Contribute to the Development of Rural Young People in Cultural Tourism of sub-Saharan Africa? Evidence from the Niger Delta in Nigeria. *Journal of Tourism and Cultural Change*, 17(6): 725-757, <https://doi.org/10.1080/14766825.2018.1502777>
- Uduji, J.I., Okolo-Obasi, N.V.E. and Asongu, S.A. (2019b). Growth Enhancement Support Scheme (GESS) and Farmers' Fertilizer Use in Rural Nigeria. *African Development Review*, 31(3): 348-363, <https://doi.org/10.1111/1467-8268.12394>
- Uduji, J.I. and Okolo-Obasi, N.V.E. (2018). Young Rural Women Participation in the E-Wallet Programme and Usage Intensity of Modern Agricultural Inputs in Nigeria. *Gender, Technology and Development*, 22(1):59-81, <http://doi.org/10.1080/09718524.2018.1445894>
- Uduji, J.I., Okolo-Obasi, N.V.E. and Asongu, S.A. (2019c). The Impact of E-Wallet on Informal Farm Entrepreneurship Development in Rural Nigeria *The Electronic Journal of Information Systems in Developing Countries*, 85(3): 1-21, <https://doi.org/10.1002/isd2.12066>
- Uduji, J.I., Okolo-Obasi, N.V.E. and Asongu, S.A. (2019d). Electronic Wallet Technology and the Enabling Environment of Smallholder Farmers in Nigeria. *Agricultural Finance Review*. 79(5): 666-688, <https://doi.org/10.1108/AFR-2018-0103>
- Uduji, J.I. and Okolo-Obasi, N.V.E. (2017). Multinational Oil Firms' CSR Initiative in Nigeria: The Need of Rural Farmers in Host Communities. *Journal of International Development*, 29(3): 308-329, <http://doi.org/10.1002/jid.3243>
- Ukabi, O. B., Uba, U. J., Ewum, C. O., & Olubiyi, T. O. (2023). Measuring Entrepreneurial Skills and Sustainability in Small Business Enterprises Post-Pandemic: Empirical Study from Cross River State, Nigeria. *International Journal of Business, Management and Economics*, 4(2), 132-149.
- Urama, K. (2023). Nigeria has fourth largest diasporans outside Africa: AfDB. Accessed from <https://gazettengr.com/nigeria-has-fourth-largset-diasporans-outside-africa-afdb>
- World Bank (2018). Doing Business 2018, reforming to create job. A World Bank Group Flagship Report.
- Zetsche, D., Birdthistle, W., Arner, D., & Buckley, R. (2020). Digital Finance Platforms: Toward a New Regulatory Paradigm. *University of Pennsylvania Journal of Business Law*, 23(1)
- Zins, A., & Weill, L. (2016). The determinants of financial inclusion in Africa. *Review of Development Finance*, 6 (1), 46–57. <https://doi.org/10.1016/j.rdf.2016.05.00>