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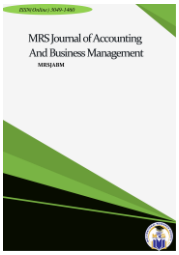

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# IMPACT OF FINANCING SMALL AND MEDIUM ENTERPRISES ON SUSTAINABLE DEVELOPMENT IN NIGERIA

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**Abstract:** *The study examines the impact of financing SMEs on sustainable development in Nigeria for the period of 1992-2023 with the data obtained on Poverty reduction (POV), proxy for sustainable development, commercial bank credit SMEs (CBSM), microfinance credit to SMEs (MFSM), aid and grant to SMEs (AGS), credit scheme to SMEs (SCS), and prime lending rate (PLR) proxy for cost of borrowing. The study employed an autoregressive distributed lagged model (ARDL-ECM). The error correction model (ECM) result showed that the speed of adjustment is 93%, which means that about 93% disequilibrium in previous period is restored into equilibrium in the subsequent periods. The study went further to reveal that in the short run, CBSM, MFSM, and AGS have a positive significant impact on sustainable development while SCS and PLR have a negative significant impact on sustainable development in Nigeria, respectively. In the long run, MFSM and PLR have a negative significant impact on sustainable development in Nigeria but CBSM has a negative insignificant impact on sustainable development. However, AGS and SCS have a positive significance on sustainable development through poverty reduction in Nigeria. The study concluded that SMEs financing has significant impact on sustainable development visa viz poverty reduction. Hence, the study recommends that monetary authorities should reduce lending rates to single digit with the intention to create jobs, reduce poverty, and achieve economic stability and sustainability. Government should focus more on creating an enabling environment for business instead of giving aid and grants that will not reach the target audience, and the Central Bank of Nigeria (CBN) should partner with microfinance institutions in Nigeria to disburse free interest loan to SMEs with a view to reduce poverty in Nigeria.*

**Keywords:** *Sustainable Development, Financing, Commercial Banks Credit, Microfinance Bank Credit, Nigeria, and ARDL.*

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## Introduction

Small and Medium Enterprises (SMEs) play a pivotal role in the economic and social development of nations, particularly in developing countries like Nigeria. They serve as engines for job creation, income generation, innovation, and poverty alleviation (Adebisi & Gbegi, 2021). With over 37 million SMEs contributing nearly 50% of Nigeria's Gross Domestic Product (GDP) and accounting for over 80% of employment, these enterprises are integral to the nation's efforts towards inclusive and sustainable growth (National Bureau of Statistics [NBS], 2020). However, despite their critical importance, SMEs in Nigeria continue to face substantial constraints, particularly in access to finance, which hampers their ability to grow and contribute meaningfully to sustainable development (Agbadagbe, Musa & Ismail, 2024).

Financing is a crucial determinant of SME performance and their potential to drive sustainable development (Magaji, Ismail & Musa, 2025). Adequate financing enables SMEs to invest in innovation, adopt environmentally friendly technologies, expand operations, and enhance productivity (Ismail, El-Yaqub & Eke, 2025; Ogar et al., 2020). However, traditional financial institutions often consider SMEs high-risk borrowers due to their limited collateral, informal structures, and weak credit histories. This results in limited access to credit, which in turn stifles entrepreneurial innovation and slows down the pace of socioeconomic development (Oladele & Oseni, 2019). Consequently, the financing gap has emerged as a significant bottleneck in realizing the full development potential of SMEs in Nigeria (El-Yaqub, Usman, Musa & Ismail, 2024).

Sustainable development, as defined by the United Nations, involves meeting the needs of the present without compromising the ability of future generations to meet their own needs (United Nations, 2015). This multidimensional concept encompasses economic growth, environmental protection, and social inclusion. SMEs, when adequately financed, can contribute to all three pillars of sustainability (El-Yaqub & Ismail, 2025). They create jobs, especially for youth and women, promote equitable economic participation, and can lead in adopting green business practices

(Adegbite & Machethe, 2020). Therefore, understanding the link between SME financing and sustainable development is essential for formulating effective policy interventions.

In Nigeria, several government-led initiatives such as the Small and Medium Enterprises Development Agency of Nigeria (SMEDAN), the Bank of Industry (BoI), and the Central Bank of Nigeria (CBN) intervention funds have sought to improve SME access to finance (El-Yaqub, Ismail & Bappayo, 2024). Despite these efforts, the impact remains limited due to issues such as poor implementation, bureaucratic bottlenecks, and weak institutional support (Yahaya & Bello, 2021). Additionally, many SMEs are unaware of or unable to access these financing opportunities due to capacity and information gaps, further exacerbating their financial exclusion. This persistent challenge necessitates a re-evaluation of financing mechanisms and their alignment with sustainable development objectives.

This study seeks to assess the impact of financing SMEs on sustainable development in Nigeria, focusing on the extent to which financial access enables SMEs to contribute to economic, social, and environmental progress. By examining the effectiveness of current financing strategies and their alignment with sustainability goals, this research aims to provide empirical insights that can inform policies geared towards enhancing the contribution of SMEs to Nigeria's sustainable development agenda. The findings will be particularly relevant for policymakers, financial institutions, development agencies, and SME operators striving to foster inclusive and sustainable economic growth.

## Literature Review and Conceptual Framework

### Conceptual review

#### *Small and Medium Enterprises (SMEs)*

The concept of Small and Medium Enterprises (SMEs) refers to business entities that maintain revenues, assets, or a number of employees below a certain threshold, varying across countries and institutions. In Nigeria, SMEs are defined by the Small and Medium Enterprises Development Agency of Nigeria (SMEDAN) as businesses with 10 to 199 employees and asset base (excluding land and buildings) between ₦5 million and ₦500 million (SMEDAN & NBS, 2020). SMEs are considered the backbone of economic development due to their capacity to generate employment, drive innovation, and contribute significantly to GDP (Adebisi & Gbegi, 2021). They play a key role in industrial development by promoting local content, enhancing entrepreneurship, and facilitating equitable income distribution (Adegbite & Machethe, 2020). However, SMEs often face structural challenges such as inadequate access to finance, poor infrastructure, and limited technical capacity, which hinder their ability to scale and sustain operations. As such, understanding the dynamics and contributions of SMEs is essential for designing effective development policies aimed at inclusive and sustainable economic growth in developing economies like Nigeria (Oladele & Oseni, 2019).

#### *Concept of SMEs Financing*

The concept of SMEs financing refers to the provision of financial resources and services necessary for the establishment, growth, and sustainability of small and medium enterprises. Financing can come in various forms, including loans, equity investments, grants, microfinance, and credit guarantees, provided by banks, government agencies, development finance institutions, and private investors (Adegbite & Machethe, 2020). Access to finance is critical for SMEs to invest in equipment, expand production, improve technology, and hire skilled labor, thereby enhancing their productivity and competitiveness (Ogar et al., 2020). However, in Nigeria, SMEs often face significant financing constraints due to high interest rates, lack of collateral, poor financial records, and stringent lending conditions by commercial banks (Adebisi & Gbegi, 2021). These challenges hinder their potential to contribute meaningfully to economic development and job creation. As a result, improving access to affordable and sustainable financing for SMEs is essential for promoting entrepreneurship, reducing poverty, and achieving long-term economic growth (Yahaya & Bello, 2021).

#### *Sustainable Development*

Sustainable development is a holistic approach to growth that seeks to meet the needs of the present generation without compromising the ability of future generations to meet their own needs. It encompasses three interconnected dimensions: economic growth, social inclusion, and environmental protection (United Nations, 2015). The concept emphasizes long-term development strategies that balance productivity with equity and environmental sustainability. In developing countries like Nigeria, sustainable development involves efforts to reduce poverty, promote inclusive economic opportunities, ensure access to quality education and healthcare, and protect natural resources (Adegbite & Machethe, 2020). The United Nations' 2030 Agenda for Sustainable Development, which includes 17 Sustainable Development Goals (SDGs), serves as a global framework guiding countries toward achieving inclusive and resilient growth. SMEs can play a vital role in this process by creating jobs, supporting innovation, and adopting environmentally friendly practices when given adequate support and financing (Ogar et al., 2020). Therefore, promoting sustainable development requires coordinated efforts across sectors, with a particular focus on empowering key economic actors like SMEs.

### Theoretical Review

#### *Pecking Order Theory*

The Pecking Order Theory This financial theory, originally proposed by Myers and Majluf (1984), suggests that firms prefer internal financing first, and only seek external financing when internal resources are insufficient. When external financing is necessary, firms tend to prefer debt over equity due to the lower risk of information asymmetry and control loss. Applied to SMEs in Nigeria, this theory helps explain why many small businesses rely heavily on personal savings and informal sources of capital rather than approaching formal financial institutions. The limited access to formal credit, often due to high collateral requirements and stringent lending conditions, pushes SMEs to adopt financing structures that may hinder their capacity to grow sustainably (Adebisi & Gbegi, 2021). Understanding this theoretical framework is crucial in addressing the financing challenges faced by Nigerian SMEs and developing policies that can support sustainable development through improved access to finance.

#### *Empirical Review*

Akintayo et al. (2024) explore credit accessibility for SMEs in Osun State, Nigeria, emphasizing the crucial role played by microfinance institutions and government initiatives in delivering financial aid to these enterprises. Despite this support, SMEs still face significant funding difficulties due to limited awareness of

available financing options and complicated application procedures. The study emphasized that enhancing access to financial information and simplifying the loan application process could significantly improve SMEs' chances of securing needed funding.

Ibrahim El-Yaqub and Magaji (2024) conducte an empirical assessment of how bank sector funding affects Nigerian SMEs, using annual data from 1991 to 2020. The study incorporated variables such as credit to private enterprises and indicators of government final expenditure, using the Autoregressive Distributed Lag (ARDL) model to capture both short- and long-term dynamics. The findings showed that a 5% increase in credit by banks leads to a 5% rise in SME output over a decade.

Ediri (2024) examine how access to credit financing influences the sustainability of small and medium-sized enterprises in Nigeria's markets. The ARDL model revealed both short- and long-term relationships among the study variables. The findings indicated that credit availability to the private sector positively contributes to sustained SME growth in the long term. However, rising interest rates and unequal loan distribution negatively affect business growth in both the short and long run. The study further identified systemic challenges and inconsistent regulatory policies as key barriers to effective credit disbursement to SMEs.

Mokuolu and Oluwaleye (2023) analyze the role of SMEs in mitigating unemployment in Nigeria, using the Parsimonious Error Correction Model, descriptive statistics, and ARDL co-integration for post-estimation validation. Their results showed that while loans from Deposit Money Banks (DMBs) promote long-term industrial development, they exert a considerable negative effect on SMEs' short-term growth.

El-Yaqub, Musa, and Ismail (2024) assesse the influence of monetary policy on Nigeria's economic growth from 1986 to 2021 using the ARDL methodology. The findings, based on ARDL bounds testing, revealed a long-term relationship between monetary policy variables and GDP growth. Vector Error Correction Model (VECM) results indicated that in the short term, broad money supply (LM2) and export levels (LEXC) exert a slightly stronger effect on GDP than bank credit to the private sector (LBCP) and interest rate (INT). In the long term, LM2 and LEXC had a significantly greater impact than INT and LBCP. The study concluded that Central Bank policies significantly influence Nigeria's economic growth, recommending that restrictions on private-sector lending be eased and that monetary strategies encourage both domestic and foreign investment through market-based interest and exchange rate systems.

Ismail, Musa, and Magaji (2025) evaluate how financial inclusion affects SME performance, productivity, and sustainability in rural areas of Abuja, Nigeria. Using logistic regression analysis, the study found a statistically significant relationship between financial access and SME outcomes, with performance odds ratio at 1.379, productivity at 1.59, and sustainability at 0.65 ($p < 0.05$). These results highlight financial inclusion as a crucial driver of rural SME resilience and development. The authors advocated for wider access to financial services, enhanced financial literacy, and the adoption of digital financial technologies to address specific rural challenges.

El-Yaqub, Ismail, and Eke (2024) investigate the influence of commercial bank credit on SMEs in Nigeria from 1992 to 2022 using the ARDL model. Stationarity tests indicated that variables such as SME profit (SMEP) and lending rate (LENR) were level stationary, while credit to SMEs (CLSME) and total money supply (TMS) became stationary after first differencing. ARDL bounds testing confirmed long-term associations among variables. The Error Correction Model (ECMt-1) demonstrated a 95% annual speed of adjustment, indicating a strong tendency to return to equilibrium after short-term disruptions. The findings showed that CLSME negatively impacted SMEP in the short term but positively in the long term. LENR had a positive significant short-term effect but was insignificant in the long term. Conversely, TMS positively affected SMEP in the short term and negatively in the long term. The study concluded that commercial bank credit significantly influences SME performance and recommended that banks prioritize SME lending, while monetary authorities should adopt interest rate policies that support business growth and job creation.

## Material and Methods

### Research Design

The study used an ex-post facto research design to study variable connections, and the analysis relied on secondary data resources. This research applied an ex post facto design because of its distinctive research features. The study starts with a descriptive analysis to learn more about the data's features and how it was organised. Several statistical analyses were then carried out, such as stationary tests (ADF), cointegration tests, bound tests (ARDL bound tests), ARDL short-run and long-run analyses, and post-estimation tests. All research data obtained came from secondary sources in the form of quantitative measurements. The information about commercial bank credit SMEs (CBSM), microfinance credit to SMEs (MFSM), aid and grants to SMEs (AGS), and credit schemes to SMEs (SCS), along with the prime lending rate (PLR), stems from the Central Bank of Nigeria (CBN) Statistical Bulletin, 2023, as does poverty reduction (POV) as a for sustainable development from World Bank Development Indicators, 2023.

### Model Specification

The model specification defines the connection between independent variables with dependent variables. The research utilizes Ediri's (2024) model by making the following modifications for studying financing SMEs effects on sustainable development in Nigeria:

SMEGDP = f(CPS, LR, SLA) - - - - - - - - 3.1

SMEGDP = $\beta$0+$\beta$1CPS+ $\beta$2LR +$\beta$3SLA+ Ut - - - - - - 3.2

Where:

SMEGDP= SME Output (Contribution of SMEs to GDP)

CPS = Credit to the private sector

LR = Lending rate

SLA = SMEs loan

$\beta$0= Constant

$\beta$1- $\beta$3 =coefficients of independent variables

Ut = error term.

However, the model is modified to capture the objectives of this study. The model introduced disaggregated variables on loan

to SMEs (Commercial bank credit SMEs and microfinance credit to SMEs), aids and grant, and SMEs credit SMEs. Again, the model used poverty reduction for depended variable as proxy for sustainable development. Therefore, the model to be estimated for this study is as follows:

POV = f(CBSM, MFSM, AGS, SCS, PLR) - - - - - - 3.3

POV = $\alpha_0$+ $\alpha_1$CBSM+ $\alpha_2$MFSM+ $\alpha_3$AGS+ $\alpha_4$SCS+ $\alpha_5$PLR+ εt - - 3.4

Instructively, the ARDL Model is specified as:

$$\Delta POV_t = \emptyset 0 + \sum_{j=1}^{m} \emptyset_{1j} \Delta POV_{t-j} + \sum_{j=1}^{m} \emptyset_{2j} \Delta CBSM_{t-j} + \sum_{j=1}^{m} \emptyset_{3j} \Delta MFSM_{t-j} + \sum_{j=1}^{m} \emptyset_{4j} \Delta AGS_{t-j} + \sum_{j=1}^{m} \emptyset_{5j} \Delta SCS_{t-j} + \sum_{j=1}^{m} \emptyset_{6j} \Delta PLR + \theta_1 CBSM + \theta_2 MFSM_{t-1} + \theta_3 AGS_{t-1} + \theta_4 SCS_{t-1} + \theta_5 PLR_{t-1} + \theta_6 ECM_{t-1} \quad - - - - - - - - 3.5$$

Where:

POV = Poverty reduction (proxy for sustainable development)

CBSM = commercial bank credit SMEs

MFSM = microfinance credit to SMEs

AGS = aid and grant to SMEs

SCS = credit scheme to SMEs

PLR = prime lending rate (proxy for cost of borrowing)

$\alpha_0$ – is the intercept

$\alpha_1 – \alpha_5$ are Coefficients to be estimated,

ε = error term

$\phi_1$- $\phi_6$ = Long run Coefficients of ARDL Model

$\theta_1 – \theta_5$ = short run coefficients of ARDL_ECM

$\theta_6$ = ECM Coefficients that measures the speed of adjustment

**A priori Expectations**

This is the expected sign that independent variables should have on dependent variable based on theory. Theoretically, it is expected that commercial bank credit SMEs (CBSM), microfinance credit to SMEs (MFSM), aid and grant to SMEs (AGS), credit scheme to SMEs (SCS) should have negative signs with poverty reduction (POV) proxy for sustainable development. This implies that if there is increase in these variables, poverty level should reduce significantly. That is, $\alpha_1$, $\alpha_2$, $\alpha_3$, $\alpha_4$ <0 while prime lending rate should have positive relationship with poverty reduction (POV) proxy for sustainable development which means if there if increase in lending rate, poverty level should increase as well. That is, $\alpha_5$> 0.

**Variable Measurement and Discussion**

This study focused on analyzing the impact of impact of financing SMEs on growth and sustainable development in Nigeria with the following variables; poverty reduction (POV), proxy for sustainable development, commercial bank credit SMEs (CBSM), microfinance credit to SMEs (MFSM), aid and grant to SMEs (AGS), credit scheme to SMEs (SCS), and prime lending rate (PLR) proxy for cost of borrowing.

Poverty reduction (POV) was used as a proxy for sustainable development. It used to measure poverty level (*P*OV), is the poverty headcount ratio ($PHR$), which is the percentage of the Nigerian population surviving on less than $5.50 per day, from the WDI which represents the threshold indicator that level of poverty below the assumed benchmark of $5.50 per day. Commercial bank credit SMEs (CBSM) measured in billions of Naira, microfinance credit to SMEs measured in billions of Naira (MFSM), aid and grant to SMEs (AGS) measured in billions of Naira, credit scheme to SMEs (SCS) measured in billions of Naira, and prime lending rate (PLR) measured in percentage which is a proxy for cost of borrowing.

**DATA PRESENTATION, ANALYSIS AND DISCUSSION OF RESULTS**

**Data Presentation**

The study examined the impact of financing SMEs on sustainable development in Nigeria with the following data. Poverty reduction (POV), proxy for sustainable development, commercial bank credit SMEs (CBSM), microfinance credit to SMEs (MFSM), aid and grant to SMEs (AGS), credit scheme to SMEs (SCS), and prime lending rate (PLR) proxy for cost of borrowing from 1992-2023.

**Descriptive Statistics**

**Table 1: Descriptive Statistics**

| | POV | CBSM | MFSM | AGS | SCS | PLR |
|---|---|---|---|---|---|---|
| Mean | 55.80063 | 49.79473 | 38125.55 | 304.0731 | 150.8735 | 17.79433 |
| Median | 56.93000 | 40.97235 | 35628.63 | 348.5450 | 138.2082 | 17.57032 |
| Maximum | 72.00000 | 355.0375 | 83567.56 | 593.1800 | 258.7257 | 29.80000 |
| Minimum | 33.10000 | 10.74789 | 1314.000 | 13.15000 | 79.85829 | 11.48313 |
| Std. Dev. | 10.43738 | 62.51782 | 33043.07 | 197.8999 | 43.96460 | 3.569842 |
| Skewness | -0.480920 | 3.818153 | 0.128172 | -0.249072 | 0.869488 | 1.052243 |
| Kurtosis | 2.130392 | 19.05105 | 1.299160 | 1.592713 | 3.183237 | 5.667714 |
| | | | | | | |
| Jarque-Bera | 2.241806 | 421.2656 | 3.944759 | 2.971471 | 4.076821 | 15.39408 |
| Probability | 0.325985 | 0.000000 | 0.139125 | 0.226336 | 0.130236 | 0.000454 |
| Sum | 1785.620 | 1593.431 | 1220018. | 9730.340 | 4827.952 | 569.4185 |
| Sum Sq. Dev. | 3377.104 | 121162.8 | 3.38E+10 | 1214095. | 59919.46 | 395.0570 |
| Observations | 32 | 32 | 32 | 32 | 32 | 32 |

**Source: E-View Version 10 Output, 2025**

The descriptive statistics are presented in Table 1 which include: the mean, median, maximum, minimum, standard deviation, skewness, kurtosis, and Jarque-Bera for the variables. The average values for POV, CBSM, MFSM, AGS, SCS and PLR are; 55.80063, 49.79473, 38125.55, 304.073, 150.8735, and 17.79433, respectively while POV, CBSM, MFSM, AGS, SCS and PLR have the minimum values of 33.10000, 10.74789, 1314.000, 13.15000, 79.85829, and 11.48313, respectively. Table1 also contains; 72.00000, 355.0375, 83567.56, 593.1800, 258.7257, and 29.80000 as maximum values for POV, CBSM, MFSM, AGS, SCS and PLR, respectively.

Kurtosis also determines how light- or heavy-tailed the dataset is in comparison to a normal distribution. Because the SCS value is near three (3), the distribution is referred to as mesokurtic, meaning that the tails are neither too heavy nor light in comparison to a normal distribution. On the other hand, the POV, MFSM, and AGS distributions are platykurtic since their kurtosis is less than three (3). However, the leptokurtic distribution of CBSM and PLR indicates that more data points will be at the tails since their kurtosis values are significantly higher than three (3), which indicates the predominance of extreme values in the data set. The tail will be longer and fatter in dispersion under these circumstances.

The Jargue-Bera (J-B) statistics show that the variables POV, MFSM, AGS and SCS are normally distributed while the J-B statistics for the variables: CBSM and PLR are non-normally distributed.

**Unit Root Test for Stationarity**

**Table 2: Unit Root Test Result**

| Time Series | ADF Statistics at level | Critical Value at level | | ADF Statistics at 1st Diff | Critical Value at 1st Diff | | Stationary Status at 5% |
|---|---|---|---|---|---|---|---|
| POV | -2.978621 | -4.284580 | 1% level | -8.335220 | -4.296729 | 1% level | (1) |
| | | -3.562882 | 5% level | | -3.568379 | 5% level | |
| | | -3.215267 | 10% level | | -3.218382 | 10% level | |
| BCSM | -0.668727 | -4.284580 | 1% level | -4.819727 | -4.296729 | 1% level | (1) |
| | | -3.562882 | 5% level | | -3.568379 | 5% level | |
| | | -3.215267 | 10% level | | -3.218382 | 10% level | |
| MFSM | -2.417226 | -4.284580 | 1% level | -5.900851 | -4.296729 | 1% level | (1) |
| | | -3.562882 | 5% level | | -3.568379 | 5% level | |
| | | -3.215267 | 10% level | | -3.218382 | 10% level | |
| AGS | -4.628672 | -4.284580 | 1% level | -9.303273 | -4.296729 | 1% level | (0) |
| | | -3.562882 | 5% level | | -3.568379 | 5% level | |
| | | -3.215267 | 10% level | | -3.218382 | 10% level | |
| SCS | -3.374123 | -4.296729 | 1% level | -6.245210 | -4.309824 | 1% level | (1) |
| | | -3.568379 | 5% level | | -3.574244 | 5% level | |
| | | -3.218382 | 10% level | | -3.221728 | 10% level | |
| PLR | -5.861897 | -4.284580 | 1% level | -5.806076 | -4.309824 | 1% level | (0) |
| | | -3.562882 | 5% level | | -3.574244 | 5% level | |
| | | -3.215267 | 10% level | | -3.221728 | 10% level | |

**Source: E-View Version 10 Output, 2025**

The unit root results for the six variables; POV, CBSM, MFSM, AGS, SCS and PLR are presented in Table 2. The results presented in Table 2 revealed the stationary status of each variable at I(0) and I(1). It was shown that POV, CBSM, MFSM, and SCS are after the first difference at 5% level of significance while AGS and PLR are stationary at level at 5% level of significance. Since the variables are mixed order of integration i.e. I(0) and I(1). Hence, the use of ARDL is justified for this study.

**Lag length Selection**

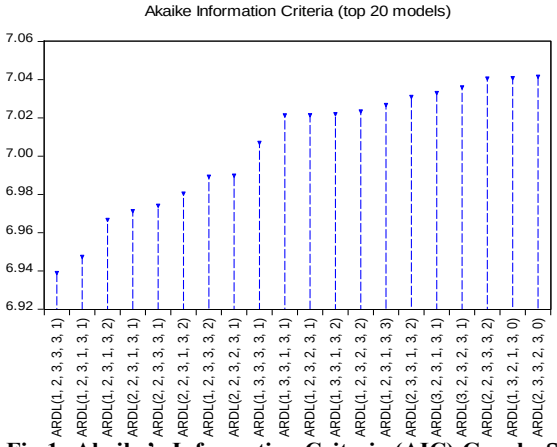


**Fig 1: Akaike's Information Criteria (AIC) Graph; Source: E-View Version 10 Output, 2025**

The best ARDL model for the study was determined using the Akaike's Information Criteria (AIC) graph. The study employed ARDL (1, 2, 3, 3, 3, 1), which is the model that is closest to zero among the top 20 models. The Akaike Selection Criterion (AIC) is used to choose the ideal lag duration.

**ARDL Bound Test Results**

**Table 3: ARDL Bound Test Results**

| F-Bounds Test | | Null Hypothesis: No levels relationship | | |
|---|---|---|---|---|
| Test Statistic | Value | Signif. | I(0) | I(1) |
| F-statistic | 4.010443 | 10% | 2.08 | 3 |
| K | 5 | 5% | 2.39 | 3.38 |
| | | 2.5% | 2.7 | 3.73 |
| | | 1% | 3.06 | 4.15 |

**Source: E-View Version 10 Output, 2025**

The values from the ARDL bound test to cointegration are presented in Table 3. A long-term link (cointegration) exists between variables according to the results of the F-Bounds Test. According to the null hypothesis there exists no equal correlation between the studied variables. The statistical model produced results indicating the existence of functional compatibility between the variables. The value of F-statistics for the model reached 4.010443 exceeding both lower and upper bounds at a 5% significance level. Therefore. The study demonstrates sufficient evidence to support cointegration between studied variables.

**ARDL Error Correction Regression**

**Table 4: ARDL Error Correction Regression**

Dependent Variable: POV

| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
|---|---|---|---|---|
| DLOG(CBSM(1)) | 5.384512 | 2.361013 | 2.280594 | 0.0485 |
| DLOG(CBSM) | 17.14087 | 3.184756 | 5.382162 | 0.0004 |
| DLOG(MFSM(1)) | -16.05496 | 3.185654 | -5.039770 | 0.0007 |
| DLOG(MFSM) | 17.28436 | 3.357977 | 5.147256 | 0.0006 |
| DLOG(MFSM(-1)) | 10.23921 | 3.394423 | 3.016480 | 0.0146 |
| DLOG(AGS) | 18.11319 | 3.342351 | 5.419296 | 0.0004 |
| DLOG(AGS(-1)) | -6.539417 | 3.027425 | -2.160059 | 0.0591 |
| DLOG(AGS(-2)) | -6.570019 | 2.788182 | -2.356381 | 0.0429 |
| DLOG(SCS(1)) | 10.74273 | 4.799286 | 2.238401 | 0.0520 |
| DLOG(SCS) | -19.74845 | 4.234083 | -4.664161 | 0.0012 |
| DLOG(SCS(-1)) | -26.28773 | 7.159086 | -3.671939 | 0.0051 |
| D(PLR) | -1.921619 | 0.717554 | -2.678014 | 0.0253 |
| CointEq(-1)* | -0.927407 | 0.135582 | -6.840212 | 0.0001 |

R-squared = 0.842551 Adjusted R-squared = 0.716592 DW = 2.491681

**Source: E-View 10 Version Output, 2025**

The short run analysis of the impact of commercial bank credit to SMEs (CBSM), microfinance credit to SMEs (MFSM), aid and grant to SMEs (AGS), credit scheme to SMEs (SCS), and prime lending rate (PLR) on sustainable development (POV) is presented in Table 4. The results show that majority of the variables have positive significant impact on growth and sustainable development while other variables reveal negative significant impact on growth and sustainable development.

In other words, the results reveal that CBSM, MFSM, and AGS have positive significant impact on sustainable development (POV) with about 1% rise in CBSM, MFSM, and AGS will lead to 171%, 172%, and 181% rise in POV, respectively on average holding other variables constant.

However, credit scheme to SMEs (SCS), and prime lending rate (PLR) have negative significant impact on sustainable development with about 1% rise in (SCS), and prime lending rate (PLR) on average holding other variables constant will lead to 197% and 19% reduction in POV, respectively.

The ECM analysis shows a negative significant value revealing how fast the system restores itself back to its long-run equilibrium state. About 93% of disequilibrium persists from the previous period until the subsequent periods achieve equilibrium. The DW value of 2.491681 indicates a lack of autocorrelation in the model due to this figure being in the proximity of two. The explanatory variables in this study explain 84% of the total variability found in the POV variable.

The values of 0.842551 indicate that the dependent variable positively relates strongly with the explanatory variables. About 84% of variation within the dependent variable (POV) could be predicted through the variables included in the model yet unexplained residuals made up 16%. Therefore, the model represents an appropriate fit.

**Long-Run Estimation Results**

**Table 5: Long-Run Estimation Results**

Dependent Variable: POV

| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
|---|---|---|---|---|
| LOG(CBSM(1)) | -6.681975 | 3.911437 | -1.708317 | 0.1218 |
| LOG(MFSM(1)) | -17.43274 | 6.268607 | -2.780959 | 0.0214 |
| LOG(AGS) | 14.73061 | 6.442529 | 2.286463 | 0.0481 |
| LOG(SCS(1)) | 43.37023 | 10.32731 | 4.199567 | 0.0023 |
| PLR | -3.997281 | 1.742528 | -2.293955 | 0.0475 |
| C | 23.38853 | 83.36489 | 0.280556 | 0.7854 |

**Source: E-View 10 Output, 2025**

The long run results were revealed in the Table 5 with positive significant impact of AGS and SCS on POV. The results show that 1% increase in AGS and SCS on average holding other variables constant will lead to 147% and 434% rise in POV, respectively.

However, MFSM and PLR have negative significant on POV with about 1% rise in MFSM and PLR will result to 174% and 40% reduction in POV on average holding other variables constant while CBSM has negative insignificant impact on POV with about 1% rise in CBSM will lead to about 67% fall in POV, holding other variables constant. The constant term (C) represents the intercept of the regression equation when all independent variables are zero. In this case, it suggests that in the absence of commercial bank credit to SMEs (CBSM), microfinance credit to SMEs (MFSM), aid and grant to SMEs (AGS), credit scheme to SMEs (SCS), and prime lending rate (PLR), the change in sustainable development (POV) is expected to increase by approximately 233% percent in the long run.

**Autocorrelation Test**

**Table 6: Q-Statistics for Serial Correlation**

| Autocorrelation | Partial Correlation | | AC | PAC | Q-Stat | Prob* |
|---|---|---|---|---|---|---|
| . *\| . \| | . *\| . \| | 1 | -0.069 | -0.069 | 0.1472 | 0.701 |
| . \|* . \| | . \|* . \| | 2 | 0.110 | 0.106 | 0.5406 | 0.763 |
| . *\| . \| | . *\| . \| | 3 | -0.082 | -0.069 | 0.7690 | 0.857 |
| . \| . \| | . \| . \| | 4 | 0.029 | 0.008 | 0.7976 | 0.939 |
| . *\| . \| | . *\| . \| | 5 | -0.153 | -0.138 | 1.6561 | 0.894 |
| . \|* . \| | . \|* . \| | 6 | 0.153 | 0.133 | 2.5488 | 0.863 |
| . \| . \| | . \| . \| | 7 | 0.015 | 0.061 | 2.5575 | 0.923 |
| .**\| . \| | .**\| . \| | 8 | -0.235 | -0.296 | 4.8752 | 0.771 |
| . *\| . \| | . *\| . \| | 9 | -0.101 | -0.122 | 5.3236 | 0.805 |
| .**\| . \| | .**\| . \| | 10 | -0.286 | -0.297 | 9.1515 | 0.518 |
| . \| . \| | . \| . \| | 11 | -0.017 | -0.033 | 9.1655 | 0.607 |
| . \| . \| | . \| . \| | 12 | -0.020 | 0.009 | 9.1875 | 0.687 |

**Source: E-View Output, 2025**

The Q-Statistics for Serial Correlation presented in Table 6 serves as a different method to test for autocorrelation in the model. The Q-statistics analysis shows no serial correlation in the residuals because every lag produces statistically insignificant results. It confirms that the residual does not exhibit serial correlation.

**Heteroskedasticity Test**

**Table 7: Heteroskedasticity Test**

Heteroskedasticity Test: Breusch-Pagan-Godfrey

| | | | |
|---|---|---|---|
| F-statistic | 0.728196 | Prob. F(18,9) | 0.7298 |
| Obs*R-squared | 16.60117 | Prob. Chi-Square(18) | 0.5507 |
| Scaled explained SS | 1.165263 | Prob. Chi-Square(18) | 1.0000 |

## Source: E-View Version 10 Output, 2025

The result of heteroskedasticity testing with Breusch-Pagan-Godfrey P-values for F-statistics equals 0.7298 while Obs*R-squared produces 0.5507 and Scaled explained SS chi-square delivers 1.0000. The result table also displays 0.728196, 16.60117, and 1.165263 for F-statistics, Obs*R-squared, and Scaled

explained SS chi-square, respectively. Based on the result, we do not reject the null hypothesis of homoscedasticity at the 5% significance level because the probability value exceeds the common threshold of 0.05. The testing results do not indicate heteroskedasticity issues.

**Normality Test**

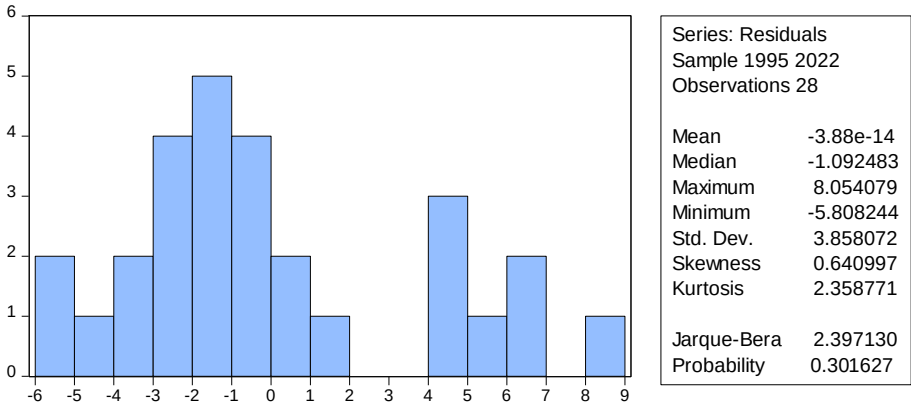


**Fig. 2: Normality Test**

**Source: E-View Version 10 Output, 2025**

The Jarque-Bera Statistics and its probability of 2.397130 and 0.301627, respectively, are displayed in Figure 2. The histogram has a bell shape, and the probability value error residual is not significant because the p-value is 0.301627, which is higher than 0.05. The error residual is implied to have a normal distribution.

**Stability Test**

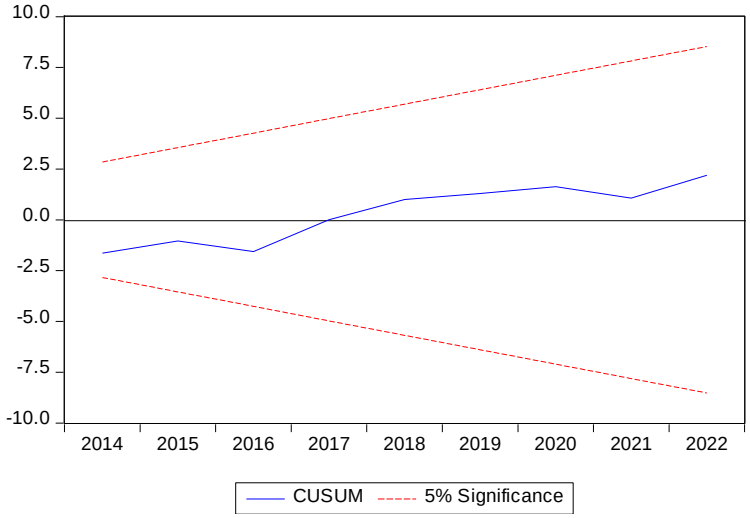


**Fig 3: CUSUM, Source: E-View Version 10 Output, 2025**

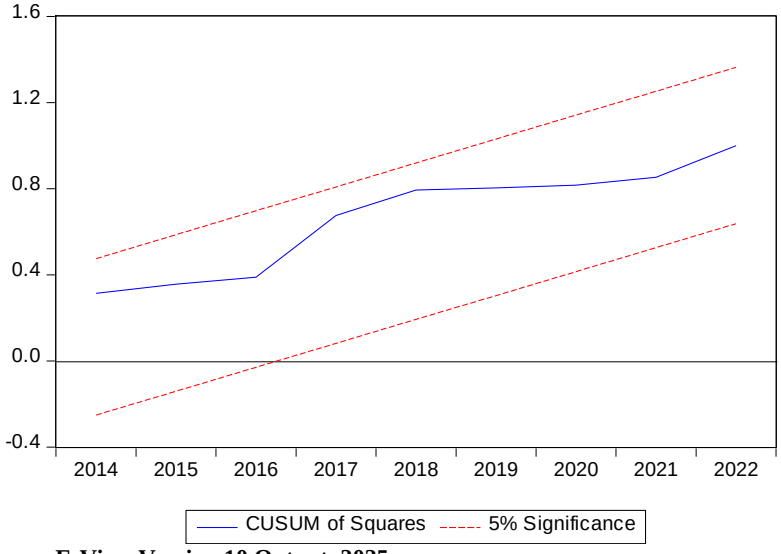


**Fig 4: CUSUM of squares, Source: E-View Version 10 Output, 2025**

The graphs in Fig 3 and Fig 4 are the CUSUM and the CUSUM of squares respectively. The plot of the CUSUM and CUSUM of squares statistics indicate that CUSUM and CUSUM of squares are within the critical bound of 5%. Therefore, it can be concluded that both the short-run and the long-run coefficients in the ARDL models are stable. Therefore, the estimated parameters can be relied upon and are good for policymaking.

**Ramsey RESET Test**

**Table 8: Ramsey RESET Test**

| Ramsey RESET Test | | | |
|---|---|---|---|
| Omitted Variables: Squares of fitted values | | | |
| | Value | df | Probability |
| t-statistic | 0.969066 | 8 | 0.3609 |
| F-statistic | 0.939089 | (1, 8) | 0.3609 |

**Source: E-View Output, 2025**

The Ramsey RESET Test is used to test for omission of important variable(s) in the model and to know if the model is well specified. This Ramsey RESET Test is shown in Table 8, and its p-value (0.3609) that is greater than 0.05 shows that the model is not misspecified and there is no issue of an omitted significant variable in the model. Hence, the estimated result can be relied upon and accepted for policy and decision-making.

## Discussion of Results

From 1992 to 2023, research into SME financing in Nigeria revealed varying impacts on growth and sustainable development, particularly in the context of poverty reduction. Commercial bank credit to SMEs (CBSM) was found to have a positive short-term influence, yet its long-term effect was negative and statistically insignificant. High interest rates and difficult loan conditions imposed by conventional banks hinder the long-term success of CBSM in reducing poverty and fostering sustainable development. Although CBSM has the potential to contribute meaningfully, these financial barriers prevent its full impact from materializing in the Nigerian economy.

Further analysis showed that microfinance loans to SMEs (MFSM) also present mixed results. In the short term, MFSM may increase poverty, but in the long run, it reduces poverty and supports sustainable development. This long-term benefit is attributed to the more accessible lending practices of microfinance institutions, which typically eliminate stringent collateral requirements and offer more flexible repayment terms than commercial banks. The implication is that microfinance can improve SME output, create employment, and support economic development, but its impact is gradual and requires sustained support over time.

Other financing methods, such as aid and grants (AGS) and SME credit schemes (SCS), also display complex outcomes. While AGS was expected to lower poverty, it instead showed rising poverty rates in both the short and long term, likely due to misallocation or corruption preventing funds from reaching the intended SMEs. Similarly, SCS showed positive short-term poverty reduction but negative long-term effects, suggesting that policy inconsistency and credit mismanagement undermine its sustainability. Additionally, high prime lending rates (PLR) had a consistently negative effect on growth and development. Reducing interest rates for SMEs, therefore, is essential for long-term poverty reduction and sustainable economic progress in Nigeria.

## Conclusion and Recommendations

This study assessed the impact of external funding mechanisms on the sustainable development of Small and Medium Enterprises (SMEs) in Nigeria. Findings revealed that microfinance credit and reduced lending rates are instrumental in lowering poverty, which in turn supports long-term sustainable development. Conversely, commercial bank credit to SMEs did not demonstrate a significant positive effect on development, likely due to high interest rates and rigid loan conditions. The SME credit scheme (SCS) and interest rates emerged as key influencers of development outcomes, indicating that structured and well-regulated financial support can drive meaningful economic progress when properly implemented.

Based on the findings, several policy measures are recommended to enhance the effectiveness of SME financing in Nigeria. Firstly, monetary authorities should ensure both commercial and microfinance banks strictly operate within regulatory frameworks. The government should prioritize creating a conducive business environment over disbursing grants and aid, which often fail to reach their intended beneficiaries. The Central Bank of Nigeria (CBN) is encouraged to collaborate with microfinance institutions to provide interest-free loans and offer funding at lower rates to expand their lending capacity. Commercial banks should give greater lending priority to SMEs to promote inclusive growth. Additionally, a reduction of lending rates to single digits is crucial for job creation, poverty alleviation, and long-term economic sustainability. Lastly, all credit disbursement and recovery processes must adhere strictly to operational guidelines to prevent favoritism and ensure accountability.

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