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EFFECT OF SMALL AND MEDIUM ENTERPRISES DEVELOPMENT AGENCY (SMEDAN) MICRO-CREDIT AND LOAN REPAYMENT ON SMALL AND MEDIUM ENTERPRISES (SMEs) GROWTH IN NASARAWA STATE, NIGERIA

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Abstract

Small and Medium Enterprises Development Agency of Nigeria (SMEDAN) was established to promote and facilitate the development programmes, instruments and support services to accelerate development of Small and Medium Enterprises, linking SMEs to internal and external sources of finance, and providing access to industrial infrastructure, such as layouts, incubators and industrial parks among others. This study aimed to examine the effect of SMEDAN micro-credit and loan repayment on small and medium enterprises (SMEs) growth in Nasarawa State, Nigeria. Ex post facto research design was adopted to utilised a sample data from 2007-2022. The data collected were analysed using ARDL (Autoregressive Distributed Lag) model for the estimation of long-run coefficients. In a short run the result shows that a significant effect exists between loan repayment and SMEs growth. The results also revealed that loan repayment and micro-credit have a positive and significant effect on SMEs growth in a long run. Based on the findings, the study recommended that SMEDAN should prioritize improving the accessibility of micro-credit to SMEs in Nasarawa State by streamlining the application process, reducing bureaucratic hurdles, and increasing awareness of the availability and benefits of SMEDAN micro-credit programmes. Furthermore, SMEDAN should consider designing loan repayment structures that align with SMEs' cash flow patterns and business cycles through offering flexible repayment schedules, moratoria, and moderate interest rates in order to alleviate the financial burden on SMEs and enhance their ability to meet loan repayment obligations.

Keywords: SMEDAN, Loan Repayment, Micro-credit, Growth, SMEs

1. Introduction

Globally, SMEs are known for their leading role in promoting grassroots economic and equitable sustainable development (Wairimu & Mwilaria, 2017). According to Chetama, Dzanja, Gondwe and Maliro (2016), a vibrant micro, small, and medium enterprise (MSME) sector is key to poverty alleviation and growth, especially in sub-Saharan Africa. SMEDAN as an institution of the government is a tool used to provide support and microcredit to small businesses (Al-Absi, 2016). Spinelli and Adam (2012) observed that most of the big businesses available are assumed to have been started as small businesses. Micro-credit is widely recognized as a crucial tool for poverty alleviation and socio-economic well-being (Sultakeev, Karymshakov & Sulaimanova, 2015). Small and Medium Enterprises (SMEs) are crucial to economic growth and development of most countries of the world. In Nigeria, SMEs account for a significant proportion of the country's economic activities, providing employment and contributing to GDP growth (Central Bank of Nigeria, 2021). However, SMEs often face several challenges, including limited access to finance, which hinders their growth and sustainability. This issue is particularly prevalent in Nasarawa State, Nigeria, where SMEs face difficulties in accessing affordable micro-credit to fund their operations.

To address this issue, Small and Medium Enterprises Development Agency (SMEDAN) has emerged as one of the key players in providing micro-credit to SMEs. SMEDAN is a government agency charged with promoting the development of SMEs in Nigeria SMEs (Abdullahi, Suleiman & Yusuf, 2020). This institution provides SMEs with access to credit, training, and other forms of financial support, which can significantly affect SMEs' growth and development.

Recent studies have highlighted the importance of SMEDAN in enhancing SMEs' growth in Nigeria. For example, Abdullahi, et al. (2020) conducted a study that examined the role of microfinance banks in the development of SMEs in Nigeria. The study found that MFBs play a crucial role in financing SMEs, with a positive impact on their growth and development. Similarly, Oke and Abubakar (2021) investigated the impact of SMEDAN on SMEs' development in Nigeria and found that SMEDAN's services positively affect SMEs' growth.

Despite the findings from various studies, the impact of SMEDAN loan repayment on SMEs in Nasarawa State, Nigeria, remains under-investigated. Thus, there is a need for further research to explore the impact of SMEDAN's loan repayment on SMEs growth. This study aims to address this gap in the empirical efforts by investigating the effect of SMEDAN on SMEs growth in Nasarawa State, Nigeria. By examining the effect of SMEDAN micro-credit and loan repayment on SMEs in Nasarawa State, this study should provide insights into the of effectiveness SMEDAN in ensuring SMEs' growth and development.

The objective of the study is to examine the effect SMEDAN micro-credit and loan repayment on small and medium enterprises (SMEs) growth in Nasasrawa state, Nigeria.

The study has the following objectives:

i.To examine the effect of micro-credit by SMEDAN on SMEs growth in Nasarawa State.

ii. To ascertain the effect of SMEDAN loan repayment on small and medium enterprises growth in Nasarawa State.

2. Literature Review

2.1 Conceptual Issues

Concept of SMEDAN

According to Alabi and Okunlola (2019), the Small and Medium Enterprises Development Agency of Nigeria (SMEDAN) is a government agency that was established to facilitate the development of small and medium enterprises in Nigeria through the provision of support services such as capacity building, micro-credit and advocacy. The Central Bank of Nigeria (CBN) has issued a guideline for the microfinance policy, supervision, and regulatory framework for Nigeria 2020, to empower SMEs operators by increasing their capital base and access to loanable funds within their domain, permit for opening branches, and enhance public-private ownership.

Idris and Afolabi (2021) defined SMEDAN as a parastatal under the Federal Ministry of Trade, Industry and Investment in Nigeria with the mandate of promoting and facilitating the development of micro, small, and medium enterprises in the country. Recognizing the crucial role that MSMEs play in driving economic growth, employment generation, and poverty reduction, SMEDAN focuses on providing support and creating an enabling environment for these enterprises to thrive.

In the words of Akpan and Ndoma (2020), SMEDAN is an agency established by the Nigerian government to provide support services to small and medium enterprises, including capacity building, access to finance, and market development. Ayinla et al. (2020) described SMEDAN as a government agency that focuses on promoting the development of small and medium enterprises in Nigeria by providing financial and non-financial support services to entrepreneurs. In another definition by Obijiaku and Ugoji-Eke (2021), SMEDAN is a government agency that is responsible for the promotion, coordination, and development of small and medium enterprises in Nigeria by providing financial and non-financial support services to entrepreneurs.

Concept of Microcredit

Yunus (2007) defined microcredit as an extension of small loans (microloans) to those in poverty designed to spur entrepreneurship and lift people out of poverty.

According to Yunus, microcredit is based on the idea that small amounts of money can have a big impact on the lives of poor people who lack access to traditional credit. Microcredit is typically used to start or expand a small business, and the loans are usually repaid in weekly or monthly installments over a period of several months to a few years. Microcredit has been used successfully in many countries around the world, and it has been shown to be an effective tool for poverty reduction.

Morduch (2019) further described microcredit as a set of financial services designed to serve poor and low-income households who lack access to formal financial institutions. Morduch explained that microcredit includes a range of financial products and services, including small loans, savings accounts, insurance, and remittances. Microcredit is often provided by microfinance institutions (MFIs), which are nonprofit organizations or for-profit companies that specialize in providing financial services to the poor. Despite criticisms of its high interest rates, microcredit continues to be an important tool for helping poor people improve their lives and escape poverty (Morduch, 2019). Microcredit is the provision of small loans to small entrepreneurs who cannot qualify for conventional banking credit.

Concept of Loan Repayment

Loan repayment refers to the process of returning the principal and interest owed on a loan within a specified time frame, as agreed upon in the loan agreement. Successful loan repayment is essential for maintaining a good credit score and improving future loan eligibility (Kumar & Bhatt, 2020). Loan repayment can be defined as the process of paying back the borrowed amount plus interest, either in regular instalments or in a lump sum at the end of the loan term. It is an important aspect of credit risk management for lenders and plays a significant role in sustaining the financial health of borrowers (Odhiambo & Kavuma, 2020).

Loan repayment can be defined as the act of repaying borrowed funds in accordance with the terms of the loan agreement. It involves paying the principal and interest on time to avoid default and the imposition of penalties. The timely and consistent repayment of loans is essential for maintaining good credit history (Nakpodia & Adeleke, 2020).

Loan repayment refers to the process of returning the principal and interest owed on a loan, as per the terms and conditions agreed upon in the loan agreement. It involves making regular payments over a specified period, which may vary depending on the type of loan. The timely repayment of loans is crucial for building and maintaining a positive credit history (Widodo, 2020). It is an act of paying back borrowed funds, along with interest, within a specified period. It is a critical aspect of the lending process, and timely repayments ensure that lenders can recover their funds and maintain their financial stability. Borrowers who consistently make on-time repayments are viewed as reliable and creditworthy (Ademiluyi, 2021).

Loan repayment is the process of returning borrowed funds to the lender, along with interest and fees, in accordance with the terms of the loan agreement. It is essential for borrowers to make timely and consistent repayments to avoid penalties, maintain their credit score, and build a good relationship with the lender. The ability to repay loans is a significant factor in determining credit worthiness (Okafor, 2021).

Loan repayment can be defined as the act of paying back borrowed funds on time, as per the agreed-upon terms and conditions. It is an essential aspect of credit risk management, as it ensures that lenders can recover their funds and avoid default. Borrowers who consistently make timely repayments establish a positive credit history, which can lead to better loan terms and lower interest rates in the future (Njogo & Kiarie, 2021).

Concept of Small and Medium Enterprises Growth

According to Adegboye, Kehinde and Ademola (2020), SMEs growth refers to the extent to which small and medium-sized enterprises are able to achieve their set objectives and meet the expectations of stakeholders. SMEs growth is influenced by a variety of factors, including the firm's size, age, industry, location, and access to resources such as capital and technology. Successful SMEs are those that are able to adapt to changes in their environment, innovate, and maintain good relationships with their customers, suppliers, and employees. SMEs that perform well are more likely to

create jobs, contribute to economic growth, and improve the standard of living in their communities.

According to Rehman, (2021), SMEs growth refers to the ability of small and medium-sized enterprises to achieve their strategic goals and objectives, sustain their competitive advantage, and improve their financial and non-financial performance. SMEs growth is influenced by a variety of internal and external factors, including the firm's organizational structure, management practices, marketing strategies, supply chain management, technological capabilities, and regulatory environment. Successful SMEs are those that are able to leverage their strengths and overcome their weaknesses to create value for their stakeholders. SMEs that perform well are more likely to attract investment, expand their operations, and contribute to economic development in their regions.

2.2 Empirical Review

Microcredits and SMEs Growth

Khan, Kamal and Shan (2021) conducted a quantitative study to investigate the impact of microcredit on the growth of SMEs in Pakistan. The study used a structured questionnaire to collect data from 300 SMEs that had obtained microcredit from microfinance institutions in Pakistan. The study employed regression analysis to examine the relationship between microcredit and SMEs growth, and descriptive statistics to describe the characteristics of the study participants. The study found that microcredit had a positive and significant impact on the growth of SMEs by increasing their access to financing and enhancing their productivity. While their study employed regression analysis and collected data from a reasonable sample size, the study relies solely on self-reported data from SMEs, which introduces potential bias and may affect the accuracy of the findings. Additionally, the study does not adequately address potential confounding variables or consider alternative explanations for the observed relationship between microcredit and SME growth.

Abor and Quartey (2020) conducted a quantitative study to explore the effect of microcredit on the growth of SMEs in Ghana. The study used a structured questionnaire to collect data from 200 SMEs that had obtained microcredit from microfinance institutions in Ghana. The study employed regression analysis to examine the relationship between microcredit and SMEs growth, and descriptive statistics to describe the characteristics of the study participants. The study found that microcredit positively impacted the growth of SMEs by increasing their access to financing and enhancing their business operations. The study employs regression analysis and a structured questionnaire, which are appropriate research methods. However, the study does not provide sufficient information on the control variables included in the regression analysis, which may raise concerns about omitted variable bias. Additionally, the study does not explore potential challenges or limitations of microcredit implementation in Ghana that may impact its effectiveness in promoting SME growth.

Fatima et al. (2020) conducted a quantitative study to examine the relationship between microcredit and the growth of women-owned SMEs in Pakistan. The study used a structured questionnaire to collect data from 250 women-owned SMEs that had obtained microcredit from microfinance institutions in Pakistan. The study employed regression analysis to examine the relationship between microcredit and SMEs growth, and descriptive statistics to describe the characteristics of the study participants. The study found that microcredit significantly impacted the growth of women-owned SMEs by increasing their access to financing and enhancing their business operations. While the study employs regression analysis and a structured questionnaire, the sample size of 250 participants may be relatively small to draw generalizable conclusions. Furthermore, the study does not account for potential differences in the impact of microcredit on SME growth based on sector or geographical location, limiting the generalizability of the findings.

Ogundele et al. (2021) conducted a quantitative study to investigate the impact of microcredit on the growth of agribusiness SMEs in Nigeria. The study used a structured questionnaire to collect data from 150 agribusiness SMEs that had obtained microcredit from microfinance institutions in Nigeria. The study employed regression analysis to examine the relationship between microcredit and SMEs growth, and descriptive statistics to describe the characteristics of the study participants. The study found that microcredit positively impacted the growth of agribusiness SMEs by increasing their access to financing and enhancing their

productivity. The impact micro-credit plays on SMEs growth the world-over cannot be overemphasized. For SMEs to perform better and grow, they need micro-credit from SMEDAN, when SMEs have access to financial supports, they in turn perform very well. The inaccessibility of micro-credit to SMEs militate and hamper their sustainability and growth. Once SMEs have access to finance, their productivity is enhanced which will ultimately lead to their success. Meanwhile, the study does not discuss potential limitations or challenges in the implementation of microcredit programs in Nigeria, such as issues related to loan repayment, financial literacy, or access to markets. These factors may influence the effectiveness of microcredit in promoting agribusiness SME growth.

Loan Repayment and SMEs Growth

Ademiluyi et al. (2021) conducted a quantitative study to investigate the relationship between loan repayment and SMEs growth in Nigeria. The study used a structured questionnaire to collect data from 235 SMEs that had obtained loans from microfinance institutions in Nigeria. The study employed regression analysis to examine the relationship between loan repayment and SMEs growth, and descriptive statistics to describe the characteristics of the study participants. The study found out that timely loan repayment significantly impacted the growth of SMEs by enhancing their access to additional financing and improving their creditworthiness. However, the study relies solely on self-reported data from SMEs, which may introduce potential bias and affect the accuracy of the findings. Additionally, the study does not address potential confounding variables or alternative explanations for the observed relationship between loan repayment and SME growth, such as the impact of external economic factors or business strategies.

Okafor et al. (2021) used a quantitative research design to examine the effect of loan default on SMEs growth in Nigeria. The study used a structured questionnaire to collect data from 200 SMEs that had defaulted on their loans from microfinance institutions in Nigeria. The study employed regression analysis to examine the relationship between loan default and SMEs growth, and descriptive statistics to describe the characteristics of the study participants. The study found that loan default negatively impacted the growth of SMEs by reducing their access to future financing, increasing credit risk, and causing reputational damage. However, the study's sample was limited to SMEs that had already experienced loan default, which may not have represented the broader population of SMEs. Additionally, the study did not explore other potential factors that could impact SMEs growth, in addition to loan default, such as market conditions or management practices.

Njogo and Kiarie (2021) conducted a quantitative study to explore the relationship between access to finance and SMEs growth in Kenya. The study used a structured questionnaire to collect data from 150 SMEs that had obtained loans from microfinance institutions in Kenya. The study employed correlation analysis to examine the relationship between loan repayment and SMEs growth, and descriptive statistics to describe the characteristics of the study participants. The study found that timely loan repayment positively impacted the growth of SMEs by improving their credit worthiness and increasing their access to future financing. While the study employed correlation analysis and collected data from a reasonable sample size, the study does not adequately address potential reverse causality or omitted variable bias. It is possible that SME growth could influence loan repayment behaviour, and the study does not sufficiently consider other factors that could affect both loan repayment and SME growth, such as market competition or government policies.

Kumar and Bhatt (2020) conducted a quantitative study to investigate the impact of credit risk management practices on the growth of MSEs in India. The study used a structured questionnaire to collect data from 200 MSEs that had obtained loans from microfinance institutions in India. The study employed regression analysis to examine the relationship between credit risk management practices, including loan repayment, and MSEs growth, and descriptive statistics to describe the characteristics of the study participants. The study found that effective credit risk management practices, including timely loan repayment, significantly impacted the growth of MSEs by reducing credit risk and improving access to financing. Meanwhile, the study does not provide a detailed explanation of the specific credit risk management practices examined, making it difficult to assess the robustness of the findings.

Additionally, the study does not consider other potential factors that could influence MSE growth, such as technological advancements or market dynamics.

2.3 Theoretical Framework

Resource-Based View (RBV) Theory

One theoretical framework that can be applied to investigate the effect SMEDAN micro-credit and loan repayment on SMEs' growth in Nasarawa State, Nigeria is the Resource-Based View (RBV) theory. The RBV theory posits that firms' competitive advantage and performance are largely determined by the availability and effective utilization of strategic resources, including financial resources (Barney, 1991). Therefore, in this case, SMEDAN microcredit and loans are considered as strategic resources that SMEs can leverage to enhance their growth and development.

The RBV theory suggests that firms that have unique and valuable resources, which are difficult for competitors to replicate, have a competitive advantage over their rivals (Barney, 1991). In the case of SMEs, access to financial resources can provide them with a competitive advantage over their peers. SMEDAN services, which include financial resources such as micro-credit, micro-savings, and micro-insurance, can help SMEs to obtain the necessary capital to grow and expand their businesses.

Several studies have applied the RBV theory to investigate the impact of financial resources on SMEs' performance. For example, Akintoye, Adelowo, Adeniji, (2021) found that access to financial resources positively affects SMEs' growth and profitability. Similarly, Olokundun, Akinbode, Ibidunni, Falola, Ogunnaike and Peter (2021) found that financial resources are critical to SMEs' competitiveness and sustainable growth. In another study, Obalola, Adeniji, Salami and Adelowo (2021) found that SMEs that leverage financial resources, such as loans and grants, are more likely to experience growth and expansion.

Therefore, the RBV theory provides a useful framework for examining the effect of SMEDAN microcredit and loan repayment on SMEs' growth in Nasarawa State, Nigeria. The theory suggests that SMEs that have access to and effectively utilize aforementioned SMEDAN services are more likely to experience growth and competitive advantage. The study can use this theory to investigate the extent to which SMEs in Nasarawa State, Nigeria, utilize SMEDAN micro-credit as strategic resources to enhance their growth and development, and how this relates to their competitive advantage over their peers.

3. Methodology

3.1 Research Design

The investigation employed an ex post facto research design owing to its inherent suitability for examining causality and relationships in circumstances where it is not ethically or practically viable to experimentally manipulate variables. Descriptive statistics were used to present an overall view of the important variables. An Autoregressive Distributive Lag (ARDL) model was used to test the assumptions and hypotheses. The target population of this study comprised SMEs in Nasarawa State that had benefited from SMEDAN support services (SMEDAN, 2021). Descriptive statistics were used to present an overall view of the important variables. An Autoregressive Distributive Lag (ARDL) model was used to test the assumptions and hypotheses.

3.2 Model Specification

The empirical model of this study follows a standard growth regression form, and can be mathematically expressed as:

$$y_{1t} = \alpha + \beta_1 X_t + \beta_2 X_t + \mu \ldots\ldots\ldots\ldots \text{(i)}$$

Where y_1 = SMEs output proxy by aggregate contribution of SMEs to gross domestic product (GDP); X = The time series properties of the variables set of control variable; α = Intercept or constant; β = Parameters or Co-efficient of explanatory Augmented Dickey-Fuller unit root test in order of variables; μ = Error term;

Therefore, the empirical model for this study is specified as:

$$SMG_t = \alpha + \beta_1 MCT_t + \beta_2 LNR_t + \mu \ldots\ldots \text{(ii)}$$

Where: SMG = SMEs Growth output proxy by aggregate contribution of SMEs to gross domestic product (GDP); MCT = SMEDAN credit to SMEs; LNR = SMEs loan repayment; α = Intercept or constant; β =

Parameters or co-efficient of explanatory variables; and μ = Error term.

The adjustment process implies the speed of adjustment from short-run disequilibrium to long run equilibrium. To this effect, we modify equation (1) to derive Error Correction Model (ECM)in ARDL form and presented as follows:

The ARDL error correction model (ECM) is given as:

$$\Delta SMG_t = \beta_0 + \sum_{i=1}^{n_1} \beta_{1i} \Delta MCT_{t-i} + \sum_{i=0}^{n_2} \beta_{2i} \Delta LNR_{t-i} + \delta_{t-i} + \mu_t \ldots\ldots viii$$

Where: Δ is change, i and j are lag lengths, n is number of lags, and δ_{t-1} is Error Correction Term (and speed of adjustment), which is integrated at order zero, I(0). β0 is constant term, β1 – β2 are coefficients and μ_t is error term. Ideally, the coefficient of the ECM should have a negative sign, statistically significant and less than unity.

4. Results and Discussion

Table 1: Descriptive Statistics

	SMG	MCT	LNR
Mean	35.35064	207.8802	105.7791
Median	23.72338	173.0254	110.0900
Maximum	89.76000	491.9900	163.1545
Minimum	11.66809	61.26908	21.59000
Std. Dev.	24.02026	119.4783	35.18447
Skewness	1.058965	0.952870	-0.509952
Kurtosis	2.918316	3.130206	3.285067
Jarque-Bera	2.994866	2.432533	0.747645
Probability	0.223704	0.296334	0.688099
Sum	565.6103	3326.084	1692.466
Sum Sq. Dev.	8654.596	214125.8	18569.20
Observations	16	16	16

Source: Eviews, 2023

The provided statistics describe three variables: SMG (SMEs Growth), MCT (Microcredit), and LNR (Loan Repayment). SMG exhibits positive skewness, indicating right-skewed growth data. MCT and LNR show heavy-tailed distributions, as indicated by their kurtosis values exceeding 3. The Jarque-Bera test suggests potential normality, supported by high p-values. These findings are based on a sample of 16 observations.

Table 2: Correlation Matrix

	SMG	MCT	LNR
SMG	1		
MCT	0.63400	1	
LNR	0.51983	0.89304	1

Source: Eviews, 2023

Table 2 presents the correlation matrix for three variables: SMG (Small and Medium-sized Enterprise's growth), MCT (Microcredit) and LNR (Loan repayment). This matrix quantifies the relationships between these variables through correlation coefficients, providing insights into their interdependencies.

Starting with the correlation between Small and Medium-sized Enterprise's growth and Microcredit, there is a positive correlation coefficient of 0.634, indicating a moderately positive relationship between Small and Medium-sized Enterprise's growth and Microcredit. This suggests that as SMEs experience growth, there tends to be an associated increase in the utilization of Microcredit.

The correlation between Small and Medium-sized Enterprise's growth and Loan repayment is 0.520, demonstrating a positive correlation, although it is slightly weaker than the correlation between SMG and MCT. This suggests that Small and Medium-sized Enterprise's growth is related to Loan repayment, but the relationship is not as strong as that with Microcredit.

Moving to the correlation between Loan repayment, there is a strong positive correlation of 0.893, indicating a significant relationship between Microcredit and Loan repayment. This suggests that as Microcredit utilization increases, Loan repayment tends to rise in tandem.

Table 3: F-Bounds Test

Test Statistic	Value	Signif.	I(0)	I(1)
			Asymptotic: n=1000	
F-statistic	9.356984	10%	2.63	3.35
K	2	5%	3.1	3.87
		2.5%	3.55	4.38
		1%	4.13	5

Source: Eviews, 2023

Table 3 present the results of the bounds co-integration test using ARDL. Therefore, since the f-statistics (9.356984) exceed the upper bound of the critical value bounds at the various level of significance, there is evidence of long run relationship among the variables. The growth rate of SMG (Small and Medium-sized Enterprise's growth), MCT (Microcredit) and LNR (Loan repayment) are co-integrated.

Table 4: Variance Inflation Factor and Tolerance Level

Variable	Coefficient Variance	Uncentered VIF	Centered VIF
D(SMG)	0.094240	2.661297	2.618222
D(MCT)	0.017958	1.793323	1.405445
D(LNR)	0.041813	1.907768	1.879712
C	37.70594	1.378669	NA

Source: Eviews, 2023

From the result in the table above, the summary of the variables of the study, the coefficient variances, centered VIFs and inference were shown. Because none of the variables ossessed a centered VIF values greater than the 10 threshold, the implication is that the model estimated result possess an absence of multicollinearity (which could lead to a spurious regression result).

Table 5: Heteroskedasticity Test: Breusch-Pagan-Godfrey

F-statistic	2.078906	Prob. F(4,9)	0.1663
Obs*R-squared	6.723335	Prob. Chi-Square(4)	0.1513
Scaled explained SS	3.160293	Prob. Chi-Square(4)	0.5314

Source: Eviews, 2023

Looking at Table 5 above, a 0.1513 Obs*R-squared prompts the acceptance of the null hypothesis that error variances are all equal which means that the model is not heteroskedastic in nature but homoskedastic.

Test for Serial Correlation

Relying on the Breusch-Godfrey Serial Correlation LM Test, the study tests for serial correlation among the variables. The rule of thumb is to accept the null hypothesis of presence of serial correlation in the model and reject the alternate hypothesis if the p-value of the Observed Rsquare is less than the 0.05% level of significance threshold.

Table 6: Breusch-Godfrey Serial Correlation LM Test

F-statistic	1.575671	Prob. F(2,7)	0.2723
Obs*R-squared	4.346104	Prob. Chi-Square(2)	0.1138

Source: Eviews, 2023

In Table 6, the Breusch-Godfrey Serial Correlation LM Test returned F-statistic alongside its probability value signifies the non-rejection of the null hypothesis, positing that there is no evidence of serial correlation in the residual.

Table 7: Estimation of ARDL Short Run Coefficients

ECM Regression
Case 2: Restricted Constant and No Trend

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(LNR,2)	0.259896	0.083299	3.120039	0.0123
CointEq(-1)*	-1.638687	0.231968	-7.064270	0.0001
R-squared	0.883789	Mean dependent var		-1.419326
Adjusted R-squared	0.874104	S.D. dependent var		47.75997
S.E. of regression	16.94609	Akaike info criterion		8.629515
Sum squared resid	3446.039	Schwarz criterion		8.720809
Log likelihood	-58.40660	Hannan-Quinn criter.		8.621064
Durbin-Watson stat	2.440651			

Source: Eviews, 2023

Table 7 indicate the coefficient for the lagged second difference of Loan Repayment (D(LNR,2)) is 0.2599. This positive coefficient suggests that a 1-unit increase in the second difference of Loan Repayment leads to a 0.2599-unit increase in the second difference of SMEs Growth, and it is statistically significant at a 1.23% level (p = 0.0123). The coefficient for the lagged error correction term (CointEq(-1)) is -1.6387. This coefficient captures the speed at which the system corrects back to its long-term equilibrium after a deviation. A negative value indicates the adjustment towards equilibrium, and it is highly statistically significant at a very low p-value (p = 0.0001).

R-squared: The R-squared value is 0.8838, indicating that 88.38% of the variation in the dependent variable is explained by the independent variables in the model. This suggests a strong model fit and the adjusted R-squared is 0.8741, which adjusts for the number of predictors in the model. It is still relatively high, indicating a good fit. The Durbin-Watson statistic is 2.4407, which checks for autocorrelation in the residuals. A value close to 2 indicates no significant autocorrelation.

Table 8: Estimation of ARDL Long run Coefficient

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(MCT)	0.201028	0.071112	2.826935	0.0198
D(LNR)	0.427105	0.186358	2.291847	0.0476
C	-1.242670	3.719075	-0.334134	0.7459

Source: Eviews, 2023

The table presents the results of an ARDL (Auto Regressive Distributed Lag) model for the estimation of long-run coefficients for the first difference of Microcredit (D(MCT)) is 0.2010. This means that a 1-unit increase in the first difference of Microcredit leads to an increase of 0.2010 units in the dependent variable. It is statistically significant at a 1.98% significance level (p = 0.0198).

Similarly, the coefficient for the first difference of Loan Repayment (D(LNR)) is 0.4271. This indicates that a 1-unit increase in the first difference of Loan Repayment leads to an increase of 0.4271 units in the dependent variable. It is statistically significant at a 4.76% significance level (p = 0.0476).

Discussion of Findings

The results in the short run revealed a positive and significant effect of loan repayment on SMEs growth in the second difference and the long run ARDL result also revealed that Loan Repayment and Micro-Credit are important predictors of SMEs Growth. Specifically, the findings indicate that both loan repayment and access to micro-credit have a significant positive impact on SMEs Growth. These results are consistent with recent studies in the field of SMEs financing that have shown that access to credit plays a critical role in the growth and development of SMEs. For instance, a study by Beck and Demirgüç-Kunt (2006) found that access to credit was positively associated with SMEs growth in emerging markets. Similarly, a study by Karadag and Yalama (2019) revealed that the availability of micro-credit has a significant impact on the financial performance of SMEs in Turkey.

The positive relationship between loan repayment and SMEs Growth can be explained by the fact that timely loan repayments enhance the credit worthiness of SMEs, which in turn improves their ability to access credit in the future. This is consistent with a recent study by Kanyar and Kutanis (2020) who found that credit worthiness is an important determinant of SMEs access to finance.

Lastly, the positive relationship between micro-credit and SMEs Growth can be attributed to the fact that access to credit provides SMEs with the necessary resources to invest in their businesses and expand their operations. This is consistent with a recent study by Xie and Sun (2021) who found that micro-credit plays a crucial role in stimulating the growth of micro and small businesses in China.

5. Conclusion and Recommendations

This study is an examination of the effect of SMEDAN micro-credit and loan repayment on small and medium enterprises (SMEs) growth in Nasarawa State, Nigeria. The ex post facto research method was adopted, allowing for a comprehensive understanding of the research problems. The target population consisted of SMEs in Nasarawa State that had received support services from SMEDAN and a sample data from 2007-2022 was utilised. The data collected were analysed ARDL (Autoregressive Distributed Lag) model for the estimation of long-run coefficients. It was discovered that in a short run that a positive and significant effect of loan repayment on SMEs growth in the second difference and the long run ARDL result also revealed that Loan Repayment and Micro-Credit are important predictors of SMEs Growth.

In conclusion, the effect of SMEDAN micro-credit and loan repayment on small and medium enterprises (SMEs) growth in Nasarawa State, Nigeria, is of paramount importance. Access to micro-credit provided by SMEDAN has a positive impact on SMEs' growth by providing them with much-needed financial resources for investment and expansion. However, it is crucial to ensure the accessibility of micro-credit programs and offer tailored support and mentorship to optimize its utilization by SMEs. Additionally, the effective management of loan repayment plays a vital role in SMEs' growth. Promoting financial literacy, providing business management skills training, and establishing favourable loan repayment structures can enhance SMEs' ability to meet loan obligations and sustain their growth trajectory. By recognizing and addressing the interplay between SMEDAN micro-credit and loan repayment, stakeholders can contribute to the flourishing SME ecosystem in Nasarawa State, fostering economic development and entrepreneurship.

Based on the results of the study, here are two recommendations:

i. SMEDAN should focus on improving the accessibility of micro-credit to SMEs in Nasarawa State. This can be achieved by streamlining the application process, reducing bureaucratic hurdles, and increasing awareness about the availability and benefits of SMEDAN micro-credit programs.

ii. SMEDAN should consider designing loan repayment structures that are aligned with the cash flow patterns and business cycles of SMEs in Nasarawa State. Flexible repayment schedules, grace periods, and reasonable interest rates can alleviate the financial burden on SMEs and enhance their ability to meet loan repayment obligations.

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