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Do Entrepreneurs' Financial Literacy Moderate the Effect of Financing Decisions on the Growth Prospects of Micro, Small and Medium-Scale Enterprises in Northeastern Nigeria?

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ABSTRACT

This paper explores the moderating influence of entrepreneurs' financial literacy on the relationship between financing decisions and growth prospects. The research sampled 176 micro, small and medium enterprises (MSMEs) in Northeastern Nigeria from 2018 to 2023. The data was generated from the financial statements of these organisations and through the administration of a questionnaire and analysed using ordinary least square regression (OLS). The research outcome suggests that long-term financing options have a significant positive effect on growth, while short-term financing loans may constrain growth prospects. The moderation analysis reveals that entrepreneurs' financial literacy moderates the impact of long-term debt on growth, supporting the upper-echelon theory. The findings indicate that MSMEs can achieve sustainable growth by employing entrepreneurs with financial expertise to manage financing decisions for sustainable growth. The research outcome may guide managers in selecting the appropriate financing sources to boost firm value for optimum growth.

KEYWORDS: Financing choices; Growth prospect; Entrepreneurs' financial literacy; Micro, small and medium enterprises

1. INTRODUCTION

Financing decisions refer to the choices made by business organisations concerning how to raise capital to fund their operations or projects (Al-Najjar & Hussainey, 2011; Sani, 2025). The financing options available include short-term loans, long-term debt, issue of shares and retained earnings, among others. This decision is crucial because inappropriate decisions may negatively affect the growth and sustainability of business organisations (Danso et al., 2021; Yang et al., 2018). An appropriate mixture of financing options may lead to lower capital costs, reduce financial risks and give businesses financial flexibility (Haron, 2016; Matemilola et al., 2018). The decision requires careful evaluation so that organisations can make informed decisions to meet their long-term strategic objectives for growth. Ineffective financing decisions can result in high-interest payments and liquidity problems, exposing a business to financial and operational risks (Ariss, 2016; Bazhair, 2023).

The contribution of micro, small and medium-scale enterprises (MSMEs) has been recognised globally. They assist economies in job creation, wealth generation and economic growth (Musabayana et al., 2022; Orens & Reheul, 2013). In particular, government agencies and other non-governmental organisations in Nigeria have offered different interventions and financing options to enable these businesses to succeed. Such interventions include short-term and long-term borrowings and government or private-sector grants. The motive of such financing options is to allow these businesses to finance their investment opportunities, generate steady profit and thus continue as a going concern (Sani, 2025).

However, despite these interventions, the MSMEs face severe economic challenges, such as unstable growth and unhealthy financial operations threatening their survival. These problems appear to be more severe in the northeastern region. For instance, a report from the Nigerian Small and Medium Scale Enterprises Agency (SMEDAN) in the year 2023 indicated that the mortality rate of MSMEs in the northeast is relatively higher than in other regions of the country. Some of the identified problems responsible for the failure of MSMEs, as reported by SMEDAN, include working capital management problems, inefficient capital structure strategies and low level of financial literacy of the MSMEs managers.

More importantly, there is a growing understanding that financial literacy may influence managers' decision-making quality. This point of view emanated from the prediction of the upper echelon theory. This perspective recognises the potential of managers' traits in influencing organisational outcomes (Hambrick, 2007; Hambrick & Mason, 1984). In addition, this financial literacy is of great importance to MSMEs, given the challenges they face when securing finances to fund their investment opportunities (Abbas et al., 2022; Thi, 2022). Also, the literature has linked financial literacy to innovation, risk management strategies and sustainability plans. It is argued that MSME managers' financial literacy might be an essential attribute that can influence the decision-making ability of businesses (Sani, 2025; Yazdanfar & Öhman, 2020). Given that, the primary objective of this study is to examine how entrepreneurs’ financial literacy may determine the relationship between financial decisions and the growth prospect of MSMEs in Northeastern Nigeria. The research finding suggests that entrepreneurs’ financing literacy moderates the relationship between financing decisions and the growth prospects of MSMEs in Northeastern Nigeria.

The study provides some insights into the sustainability literature by shedding more light on the determinants of sustainability for MSMEs. Further, analysing the moderating effect of financial literacy offers an in-depth understanding of the relationship between financing choices and the growth prospects of businesses. This implies that MSMEs can achieve optimum growth by employing managers with financial expertise to manage financing decisions effectively for sustainable growth. Moreover, the research outcome may guide managers in selecting the appropriate financing sources to boost firm value for sustainable growth.

The other segments of this paper contain the literature review and method. The fourth part focuses on the discussion of results. The final section concludes the paper.

2. LITERATURE REVIEW

Several theories serve as a framework for this study, one of which is the pecking order theory. This perspective argues that businesses should prioritise financing sources when they desire additional funding (Frank & Goyal, 2003; Sani, 2020; Shyam-Sunder & Myers, 1999). According to this view, firms follow a hierarchical order when choosing financing sources. Companies may prefer retained earnings followed by debt and equity financing as a last resort because of the effect of information asymmetry (Fama & French, 2002; Sofat & Singh, 2017). The theory highlights the cost implication of different financing sources. It states that businesses should focus on internal sources to maximise performance. Another relevant framework for this discourse is the tradeoff theory. This theory suggests that companies face a tradeoff between the costs and benefits of debt financing (Agyei et al., 2020; Myers, 2001). The cost of debt may include financial distress or bankruptcy risk, while the benefits involve interest tax shield incentives, lower agency costs and managerial efficiency (Kumar et al., 2017; Pacheco & Tavares, 2017; Zahid et al., 2024). Hence, the theory emphasises that firms need to balance the benefits of debt financing to maximise their value and achieve greater growth.

Furthermore, the upper echelons and entrepreneurial orientation theories support the moderating role of entrepreneurs’ financial literacy. The upper echelons theory recognises the potential of managers’ traits in influencing organisational outcomes (Hambrick, 2007; Hambrick & Mason, 1984). In other words, the upper echelons state that managers' attributes might, to some extent, affect strategic choices. It is argued that cognitive ability may shape outcomes, including selecting appropriate financing options to guarantee long-term value creation (Bassyouny et al., 2020; Ting et al., 2015). In sum, within the context of this theory, one can emphasise that managers' financial literacy may serve as an essential attribute that can influence financing decision-making to enhance firms’ value. The entrepreneurial orientation theory is another framework that may guide MSMEs’ managers in developing a business sustainability plan (Al-Hakimi et al., 2022; Lumpkin & Dess, 1996). This viewpoint focuses on the various strategies that may assist MSMEs’ managers regarding risk-taking management, innovation, and the display of proactive actions for business survival and growth.(Al-Hakimi et al., 2022; Bouguerra et al., 2023). Thus, this perspective encourages MSMEs to engage in innovation, creativity, and risk-taking to gain a competitive market share.

The empirical literature revealed various financing opportunities accessible to MSMEs. These include short-term loans, long-term borrowings, government grants, and other private-sector interventions (Bogan, 2012; Molina-Garcia et al., 2022). These funding options are mainly the main composition of MSMEs’ capital structure. It is argued that selecting suitable financing sources assists in minimising agency conflicts, promoting financial flexibility and limiting bankruptcy incidents (Yazdanfar & Öhman, 2020). In this context, several studies have examined the effect of short-term financing options in promoting business growth. Short-term loans require frequent refinancing, and MSMEs’ managers are expected to work diligently to generate sufficient cash flow to repay such loans (Owen et al., 2023; Rao et al., 2021). Therefore, this financing method helps constrain managers from making inefficient investment decisions.

However, some studies contended that short-term loans might expose MSMEs to financial instability when creditors cannot roll over such loans (Sani, 2025; Yazdanfar & Öhman, 2020). Hence, MSMEs may need to secure long-term loans for sustainable growth. Long-term borrowing is a loan with more than one year repayment period. Studies suggest that MSMEs should secure long-term loans due to the advantages they can derive from such financing options (Abereijo & Fayomi, 2005; Molina-Garcia et al., 2022). It has been emphasised that long-term financing is preferred for MSMEs' survival because it gives managers sufficient time to initiate and design a robust financial plan for long-term investment opportunities (Owen et al., 2023; Sani, 2025). Therefore, studies that share such views reported that long-term borrowing might positively impact the sustainable growth of MSMEs. Based on the preceding review, the following hypotheses are formulated:

H1: A significant negative relationship exists between short-term debt and the growth of micro, small and medium-scale enterprises in Northeastern Nigeria.

H2: A significant positive relationship exists between long-term debt and the growth of micro, small and medium-scale enterprises in Northeastern Nigeria.

H3: Entrepreneurs' financial literacy moderates the relationship between short-term debt and the growth of micro, small and medium-scale enterprises in Northeastern Nigeria.

H4: Entrepreneurs' financial literacy moderates the relationship between long-term debt and the growth of micro, small and medium-scale enterprises in Northeastern Nigeria.

Based on the literature reviewed, this study designed the framework in Figure 1. According to the framework, the independent variable is represented by short-term and long-term debts. Growth prospects represent the dependent variable. The moderator variable is entrepreneurs' financial literacy. Also, the framework specified some control variables such as size, tangibility and age in order to minimise specification bias.

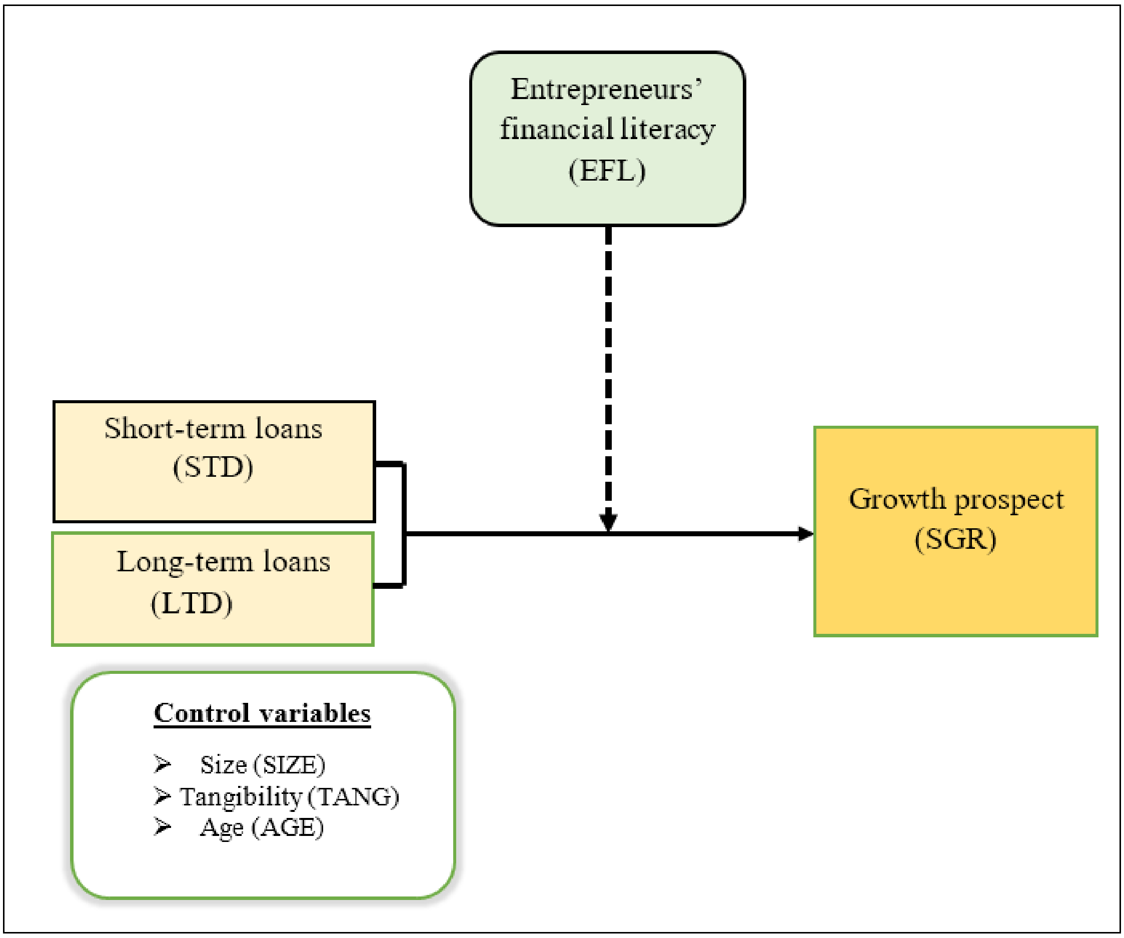

Figure 1: Research framework

3. METHODOLOGY

3.1 Sampling and data

This research covers MSMEs in Northeastern Nigeria. This part of the country is one of the suppliers of most agro-allied products. Specifically, the study covers all Six states. The study sample comprised 176 registered MSMEs across the region. The registered MSMEs list was collected from SMEDAN offices across the states. The research focuses on registered MSMEs because they have a more established operating system. Thus, their financial records may be relied upon by researchers. Grants suppliers usually prioritise the registered MSMEs when extending their loans or grants. Thus, their financial records may be relied upon by researchers. A stratified sampling was used, which led to the construction of the sample size. MSMEs were classified into three strata (3): the micro, small and medium. Random sampling was used using the Krejcie and Morgan sampling criteria. The final sample covers 176 MSMEs across the six (6) states from 2018-2023. The study used secondary and primary data sources to generate the requisite information. Specifically, the financial statements of MSMEs domiciled at SMEDAN and questionnaire administration were used.

3.2 Classification and measurement of variables

The research variables are grouped into four. The sustainable growth model was employed to represent the dependent variable. This model is widely used in accounting and finance studies (Xu et al., 2020). It is given as:

$$SGR = S * T * P * E$$

SGR = sustainable growth rate, S = sales margin, T = total assets turnover, P = payout ratio and E = earnings multiplier. The independent variable is financing decisions proxied by short-term debt (STD) and long-term debt (LTD). Following prior studies, STD was measured as the short-term debt over total assets, whereas LTD was computed as the long-term debt over total assets (Ezeani et al., 2022; Sani, 2020). The moderator variable is entrepreneurs’ financial literacy (EFL), obtained through the administration of a questionnaire and measured as a dummy variable. A manager is assumed to be financially literate if he has obtained at least a certificate in finance or accounting. Also, the model employed SIZE, tangibility (TANG) and age (AGE) as control variables. Following the literature, SIZE was determined as the logarithms of total assets (Ezeani et al., 2023; Sani, 2021.) TANG was calculated as the ratio of fixed assets over total assets (Ariss, 2015; Haron, 2016). AGE was calculated as the number of years an MSME has registered with SMEDAN during an observation period (Sani, 2025). These control variables were employed in this study because the literature suggests that they can influence growth prospects (Abbas et al., 2022; Orens & Reheul, 2013).

3.3 Empirical model

A linear regression model was used to test the hypotheses formulated. The data gathered involves a time series and cross-section, making it suitable for employing the panel data method. This methodology is widely used because of its benefits of producing reliable regression estimates (Drukker, 2003; Wooldridge, 2002). In particular, the study used the ordinary least square method (OLS) being the basic econometric model. Given that, the study specified the following empirical models using sustainable growth as the dependent variable:

4.

$$SGR_{it} = \emptyset + \beta_1 STD_{it} + \beta_2 LTD_{it} + \beta_3 SIZE_{it} + \beta_4 TANG_{it} + \beta_5 AGE_{it} + \varepsilon_{it} \quad (1)$$

Concerning the moderating analysis, the moderating variable (EFL) and the interaction terms (EFL*STD) and (EFL*LTD) were inserted into the model (1) to detect their effects in the model. A moderator is a variable that influences the association between an explanatory variable and a dependent variable (MacKinnon, 2011; Namazi & Namazi, 2016). Following extant literature, moderation occurs when the interaction term (path c) is significant (Aguinis et al., 2017; Sani, 2020). The specified moderation model is shown in equation (2).

$$\begin{aligned} SGR_{it} = {} & \emptyset + \beta_1 STD_{it} + \beta_2 LTD_{it} + \beta_3 FSIZE_{it} \\ & + \beta_4 TANG_{it} + \beta_5 AGE_{it} + \beta_6 EFL_{it} \quad (2) \\ & + \beta_7 (EFL * STD)_{it} \\ & + \beta_8 (EFL * LTD)_{it} + \varepsilon_{it} \end{aligned}$$

4 RESULTS AND DISCUSSION

4.1 Descriptive results

Table I exhibits the descriptive summary results of the variables. The maximum sustainable growth rate value is 62.00, with a mean of 11.62 ratio. The variable recorded a higher standard deviation value. The average short-term debt (STD) ratio is 25%, with some firms exhibiting a ratio of up to 52% of their capital composition. The long-term debt (LTD) averagely is 9%, with a dispersion among the firms. SIZE value indicates a maximum ratio of 7.49 and a minimum value of 4.21 within the preview period.

Table 1: Descriptive results

Variable	Mean	Std. Div.	Min.	Max.	Obs.
SGR	11.62	3.63	8.10	62.00	1,056
STD	0.25	0.21	0.00	0.52	1,056
LTD	0.09	0.62	0.00	0.29	1,056
SIZE	3.11	1.61	4.21	7.49	1,056
TANG	0.14	0.87	0.09	0.58	1,056
AGE	3.12	2.48	2.00	13.00	1,056
EFL	0.476	1.489	0.00	1.00	1,056

SGR = sustainable growth, STD = short-term debt, LTD = long-term debt, SIZE = size of the organisation, TANG = tangibility, AGE = age of the MSME and EFL = entrepreneurs’ financial literacy.

Moreover, tangibility (TANG), which represents fixed assets investment level, reveals a value of 14% averagely, with some firms having up to 58%. AGE ranges from 2 to 13 years and recorded a higher dispersion across the firms. This outcome signifies that some firms are relatively older than others. The entrepreneurs’ financial literacy variable (EFL) averages 0.476, indicating that 47.6% of the MSMEs’ managers are financially literate.

4.2 Correlation results

Table 2 demonstrates the Pearson correlation result, which aims to determine the extent of the association between the variables and examine whether multicollinearity exists. The results in Table 2 reveal little correlations among the explanatory variables because the coefficients are not more than 80 percent. The outcome suggests the absence of multicollinearity in the models for this study. Likewise, the variance inflation indicators (VIF) are within the acceptable limit (lower than 10), reinforcing the non-appearance of multicollinearity in this study.

Table 2: Correlations matrix

Variable	SGR	STD	LTD	SIZE	TANG	EFL	VIF
SGR	1.000						
STD	0.189***	1.000					1.23
LTD	0.117***	0.097**	1.000				1.29
SIZE	0.092**	0.014	-0.189***	1.000			1.11
TANG	0.051*	0.124***	-0.166***	0.082*	1.000		1.12
AGE	-0. 006	0.218***	0.093**	0.020	0.171***		1.43
EFL	0.221***	0.009	0.109***	0.084*	0.002	1.000	2.19

*, ** and *** show significance level at 1%, 5% and 10%, respectively.

SGR = sustainable growth, STD = short-term debt, LTD = long-term debt, SIZE = size of the organisation, TANG = tangibility, AGE = age of the MSME and EFL = entrepreneurs' financial literacy.

4.3 Regression analysis results

Before running the regression, some preliminary tests were conducted in order to ensure the validity and reliability of the regression outcome. These tests include the serial correlation test, multicollinearity test and heteroscedasticity test. The results of these diagnostic tests are reported in Table 3. The VIF results for the multicollinearity test are contained in Table 2.

Table 3: Diagnostic tests

Test	Results
Serial correlation (Wooldridge test for autocorrelation in panel)	F = 11.339 Prob > F =0.000
Heteroscedasticity (Breusch / Cook test)	Chi2 (1) =14.87 Prob > chi2 =0.0000

The results of the diagnostic tests in Table 3 suggest the presence of serial correlation and heteroscedasticity in the sampled data. These statistical issues occur because the P-values of these specifications are significant. Hence, the study applied a clustered robust regression to mitigate these statistical problems, as suggested by the literature (Drukker, 2003; Gujarati & Porter, 2010).

The analysis in Table 4 reports the results of the moderating effect of entrepreneurs' financial literacy on the relationship between financing decisions and sustainable growth. These results are classified into two models. Model 1 captures the direct effect results, while Model 2 reports the moderating effect outcome. The F-statistics of the models appear significant, showing their robustness. According to the results in Model 1, short-term debt has a significant negative relationship with sustainable growth variable, confirming **H1**. This outcome means that sustainable growth may decline as short-term borrowing increases. This finding aligns with the argument that short-term loan requires frequent refinancing, thereby exposing MSMEs to greater instability and constraining their growth prospects (Owen et al., 2023; Rao et al., 2021; Sani, 2025; Yazdanfar & Öhman, 2020). However, the long-term debt shows a significant positive coefficient, supporting **H2**. This evidence implies that long-term loans can lead MSMEs to sustainable growth. These financing options may provide financial flexibility to MSMEs, enabling them to achieve future growth (Abereijo & Fayomi, 2005; Molina-Garcia et al., 2022). The policy implication of the above findings is that MSMEs should attach greater priority to long-term borrowing to derive an interest tax shield advantage for sustainable growth. The SIZE coefficient indicates that larger MSMEs may achieve sustainable growth, supporting prior studies (Ezeani et al., 2023; Sani, 2021). Tangibility appears insignificant, while AGE indicates a significant positive coefficient. This strong positive outcome suggests that older MSMEs are more likely to have growth prospects. Older MSMEs may be associated with a sound financial system, facilitating growth (Abbas et al., 2022; Orens & Reheul, 2013).

Table 4: Regression results (OLS robust)

Variables	Model 1 Coefficient /stand. error	Model 2 Coefficient /stand. error
Constant	0.8721 (0.2917) ***	1.6031 (0.7720) **
STD	-5.2346 (1.1237) ***	-5.6623 (1.2643) ***
LTD	3.9827 (1.9274) **	4.0711 (1.3981) ***
Moderator:		
EFL	--	0.0946 (0.0191) ***
Interaction terms:		
EFL * STD	--	3.1967 (2.8271)
EFL * LTD	--	1.9683 (0.9817) **
Control variables:		
SIZE	1.0368 (0.2953) ***	1.0375 (0.5339) **
TANG	0.2258 (1.9341)	0.2524 (0.1449) *
AGE	0.0326 (0.0162) **	0.0356 (0.2771)
Year dummies	Yes	Yes
Industry dummies	Yes	Yes
R^2	0.2982	0.3291
F-statistics	16.17	22.11
Prob F-statistics		0.0000

***, ** & * show significance level at 1%, 5% and 10% respectively.

Note: Standard errors in parentheses are robust to heteroscedasticity

Model 1 captures the direct effect results, while Model 2 reports the moderating effect outcome.

STD = short-term debt, LTD = long-term debt, FSIZE = size of the organisation, TANG = tangibility, AGE = age of the MSME and EFL = entrepreneurs' financial literacy.

The results in Model 2 capture the moderating effect, where the moderator variable and the interaction terms were included. According to the results, the moderator variable (EFL) appears positive and significant. This finding demonstrates that entrepreneurs' financial literacy may lead MSMEs to sustainable growth. Further, the interaction term (EFL*STD) yields an insignificant coefficient, showing no moderation effect and disputing **H3**. However, the interaction term (EFL*LTD) looks positive and significant, agreeing with **H4.** This positive moderating effect aligns with the upper echelons' preposition that managers' attributes might affect strategic choices, including selecting appropriate financing options to boost long-term value creation (Bassyouny et al., 2020; Hambrick, 2007; Hambrick & Mason, 1984; Ting et al., 2015). The policy implication of this finding is that MSMEs can achieve sustainable growth by employing entrepreneurs with financial expertise for sustainable growth.

5. CONCLUSION

The contribution of micro, small and medium-scale enterprises (MSMEs) has been recognised globally. They assist economies in job creation, wealth generation and economic growth. Government agencies and other non-governmental organisations in Nigeria have offered different interventions and financing options to enable MSMEs to succeed. Such interventions include short-term and long-term borrowings and government or private-sector grants. However, despite these interventions, the MSMEs face severe economic challenges, such as unstable growth and unhealthy financial operations threatening their survival. These problems appear to be more severe in the northeastern region. Some of the issues identified as responsible for the failure of MSMEs include working capital management problems, inefficient capital structure strategies and low level of financial literacy of the MSMEs' managers. Therefore, this explored the moderating effect of entrepreneurs' financial literacy on the relationship between financing decisions and the growth of MSMEs in Northeastern Nigeria. The study sample comprised 176 registered MSMEs across the region from 2018 to 2023. The results suggest that sustainable growth may decline as short-term borrowing increases, while long-term loans can lead to sustainable growth.

The empirical results have implications for theory and practice. The outcome confirms the predictions of the upper echelons theory that managers' attributes may influence firms' strategic choices. This evidence proves that the prepositions of finance theories can apply to MSMEs. Regarding policy decisions, the research outcome may be an impetus for MSMEs to emphasise on managers' financial literacy for efficient financing decisions, leading to sustainable growth.

While the study provides further insight into the literature, future studies can verify the results by focusing on other Nigerian regions. Likewise, future studies can deploy other growth models to confirm these results. Variables not captured in this study can be modelled to verify the findings reported. Another analytical framework, such as fixed or random effects, can be employed to verify the empirical evidence.

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