MALETE JOURNAL OF ACCOUNTING AND FINANCE

A Publication of the Department of Accounting and Finance, Faculty of Management and Social Sciences, Kwara State University, Malete

Vol. 6 No. 2, December, 2025 ISSN: 2735-9603

MACROECONOMIC INSTABILITY AND SMALL AND MEDIUM ENTERPRISES' SUSTAINABILITY: MODERATING ROLE OF RESILIENCE STRATEGIES IN NIGERIA

Oluwafemi Joseph AKANDE
jakande@wsu.ac.za
Department of Accounting Science
Faculty of Economic and Financial Sciences,
Walter Sisulu University, Mthatha, South Africa.

Abstract

This study investigates the impact of exchange rate volatility on the performance of small and medium-sized enterprises (SMEs) in Nigeria, with particular emphasis on the moderating role of resilience strategies. Using a panel dataset combining firm-level survey data and macroeconomic indicators from 2015 to 2025, the study employs fixed effects regression techniques to analyze the relationships among exchange rate volatility, resilience strategies, and SME performance. The results reveal that exchange rate volatility has a negative and statistically significant effect on SME performance ($\beta = -0.3726$, $p < 0.01$), confirming that currency instability undermines profitability and growth. Resilience strategies, proxied through a composite index of diversification, cost management, and innovation, exhibit a positive and significant impact on performance ($\beta = 0.2847$, $p < 0.01$). Furthermore, the interaction between exchange rate volatility and resilience strategies is positive and significant ($\beta = 0.1927$, $p < 0.01$), indicating that adaptive strategies mitigate the adverse effects of volatility. Inflation shows a negative but weak effect, while interest rates remain statistically insignificant across models. The study concludes that strengthening SME resilience is critical for sustaining performance in volatile macroeconomic environments. Policy recommendations focus on enhancing exchange rate stability, improving access to financial risk management tools, and promoting innovation-driven resilience among SMEs.

Keywords: Exchange Rate Volatility, SME Performance, Resilience Strategies, Macroeconomic Instability, Nigeria Economy, Business Sustainability

INTRODUCTION

Small and medium-sized enterprises (SMEs) remain central to Nigeria's economic structure, contributing significantly to employment, innovation, and inclusive growth. However, their performance is increasingly shaped by macroeconomic instability, particularly exchange rate volatility and inflationary pressures. Recent evidence indicates that fluctuations in the naira have intensified operational uncertainty, raising input costs and weakening firm profitability (Ajala & Musa, 2024; Burodo et al., 2026). Macroeconomic shocks, including currency depreciation and monetary tightening, have further constrained SME growth and survival prospects (Ibrahim & Musa, 2023; Udo et al., 2026). Reports from the Central Bank of Nigeria (2024) and SMEDAN (2024) highlight persistent vulnerabilities in the sector despite policy interventions. While SMEs are often described as adaptable, the scale and persistence of external shocks continue to test their resilience capacity in a rapidly evolving business environment.

Scholarly attention has increasingly focused on how exchange rate dynamics influence SME performance, yet findings remain mixed and context-specific. Some studies show that exchange rate volatility significantly reduces firm growth and investment capacity (Okafor & Eze, 2023; Eze

et al., 2024), while others suggest that adaptive strategies can cushion adverse effects (Alake, 2024; Adebayo, 2024). Beyond Nigeria, comparative evidence also reveals that SMEs in emerging and developed economies experience varying degrees of exposure depending on their financial sophistication and market orientation (Dwyer et al., 2025; Simakova & Prazak, 2024). Despite this growing body of work, there remains limited integration of firm-level resilience strategies with macroeconomic volatility frameworks. This creates a conceptual gap in understanding how SMEs simultaneously respond to and manage exchange rate risks within resource-constrained settings. Another critical gap lies in the limited empirical exploration of how SMEs operationalize resilience in response to sustained currency fluctuations. While studies acknowledge the importance of coping mechanisms such as cost adjustment, diversification, and innovation (Adebayo, 2024; Otokiti, 2025), few provide detailed insights into how these strategies interact with exchange rate movements over time. Additionally, prior research often treats SMEs as a homogeneous group, overlooking sectoral and regional variations in exposure and response (Obiekwe & Edokobi, 2025; Ementa & Igbokwe, 2024). This lack of granularity restricts policy relevance and limits the development of targeted interventions. Consequently, there is a need for more nuanced analysis that connects macroeconomic volatility with firm-level adaptive behavior, particularly in developing economies where institutional support remains limited.

Against this backdrop, the first objective of this study is to examine the effect of exchange rate volatility on SME performance in Nigeria. Understanding this relationship is essential, given the persistent fluctuations in the foreign exchange market and their implications for cost structures, pricing decisions, and profitability (Oyinlola & Adebusuyi, 2025; Alugbuo et al., 2023). The second objective is to investigate the resilience strategies adopted by SMEs to cope with exchange rate instability. Prior evidence suggests that firms deploy a mix of financial and non-financial strategies, including hedging, market diversification, and business model innovation, to mitigate risks (Badshah & Borgersen, 2020; Alake, 2024). The third objective is to assess how these resilience strategies influence SME sustainability and long-term performance, particularly in a volatile macroeconomic environment characterized by policy uncertainty and external shocks.
The remainder of this article is structured as follows. The next section presents a review of relevant literature, focusing on exchange rate volatility, SME performance, and resilience strategies. This is followed by the methodology section, which outlines the research design, data sources, and analytical techniques employed in the study. The subsequent section presents and discusses the empirical findings in relation to existing literature. Finally, the study concludes with policy implications and recommendations aimed at strengthening SME resilience in Nigeria's dynamic economic landscape.

LITERATURE REVIEW

Exchange Rate Volatility and SME Performance

Exchange rate volatility has long been recognized as a critical determinant of firm performance, particularly for small and medium-sized enterprises (SMEs) operating in open and import-dependent economies. In Nigeria, fluctuations in the naira have intensified over the past decade, largely driven by oil price shocks, external imbalances, and monetary policy adjustments (Central Bank of Nigeria, 2023; Omolade & Ngalawa, 2018). These dynamics create an uncertain operating environment in which SMEs must constantly adjust pricing, sourcing, and investment decisions. Empirical studies consistently show that exchange rate instability raises input costs and compresses profit margins, especially for firms reliant on imported raw materials (Ajala & Musa,

2024; Burodo et al., 2026). The cumulative effect is often reduced competitiveness and constrained business expansion.

A growing body of Nigerian-focused research reinforces the negative association between exchange rate volatility and SME performance. For instance, Okafor and Eze (2023) and Oyinlola and Adebusuyi (2025) find that persistent currency depreciation significantly undermines firm growth and revenue stability. Similarly, Alugbuo et al. (2023) and Eze et al. (2024) report that volatility not only affects profitability but also increases the likelihood of business failure, particularly in the manufacturing sector. These findings align with earlier evidence by Monday et al. (2017), who argue that exchange rate depreciation erodes SMEs' financial capacity by inflating operating costs and limiting access to foreign inputs. The implications are particularly severe in contexts where firms lack the financial buffers to absorb external shocks.

Beyond Nigeria, comparative studies provide additional insights into how exchange rate movements influence SMEs across different economic environments. Belghitar et al. (2016) demonstrate that floating exchange rates can significantly alter firm performance, depending on the degree of exposure and hedging capacity. In a similar vein, Simakova and Prazak (2024) show that exchange rate volatility affects trade-oriented SMEs more intensely, as currency fluctuations directly influence export competitiveness. Evidence from the United Kingdom post-Brexit also reveals that SMEs faced heightened uncertainty and declining performance due to exchange rate instability (Ateka, 2024). These cross-country findings highlight that while the direction of impact is often negative, the magnitude varies depending on institutional frameworks and firm-level capabilities.

Recent macro-financial analyses further deepen the understanding of this relationship by linking exchange rate volatility to broader economic performance and firm-level adjustments. Ali et al. (2024) emphasize that exchange rate instability disrupts long-term planning and investment decisions, forcing firms to adopt short-term survival strategies. Similarly, Eklou (2023) finds that currency volatility reduces productivity growth in emerging markets, particularly among smaller firms with limited access to capital. In the Nigerian context, Osazevbaru (2026) and Udo et al. (2026) highlight the combined effects of exchange rate fluctuations and interest rate volatility, noting that these factors jointly exacerbate financial constraints for SMEs. These studies underscore the multifaceted nature of exchange rate risk and its far-reaching implications for business sustainability.

Despite the overwhelming evidence of negative effects, some scholars argue that the relationship between exchange rate volatility and SME performance is not entirely deterministic. Chinelo et al. (2025) suggest that firms with adaptive capabilities can mitigate adverse impacts through strategic adjustments. Similarly, Eromosele (2025) observes that while currency devaluation initially disrupts operations, it may create export opportunities for firms capable of accessing international markets. However, such benefits are often limited to a small subset of SMEs with sufficient resources and market access. Overall, the literature suggests that while exchange rate volatility poses significant challenges, its ultimate impact depends on the interplay between macroeconomic conditions and firm-level responses.

SME Resilience and Adaptive Strategies in Volatile Environments

The concept of resilience has gained prominence in SME research, particularly in the context of increasing exposure to external shocks such as exchange rate volatility, inflation, and financial crises. Resilience refers to the ability of firms to anticipate, absorb, and adapt to disruptions while maintaining operational continuity (Miklian & Hoelscher, 2022). In Nigeria, where economic instability is a recurring feature, resilience has become a critical determinant of SME survival and growth. Adebayo (2024) highlights that entrepreneurial resilience enables firms to navigate uncertainty by leveraging innovation, flexibility, and resourcefulness. This perspective shifts the focus from vulnerability to adaptability, emphasizing the proactive role of firms in managing risk. Several studies have explored the specific strategies SMEs adopt to cope with exchange rate volatility. Cost management and operational efficiency are among the most commonly reported approaches. Firms often adjust their input mix, renegotiate supplier contracts, or adopt lean production methods to offset rising costs (Ementa & Igbokwe, 2024; Obiekwe & Edokobi, 2025). Diversification is another widely used strategy, with SMEs expanding into new markets or product lines to reduce dependence on volatile revenue streams (Adeyemi & Ojo, 2025). These adaptive measures reflect a pragmatic response to external pressures, although their effectiveness varies depending on firm size, sector, and resource availability.

Financial strategies also play a crucial role in enhancing SME resilience. Hedging and foreign exchange risk management have been identified as key tools for mitigating the impact of currency fluctuations (Badshah & Borgersen, 2020; Dang, 2015). However, the adoption of such strategies remains limited among SMEs in developing economies due to financial constraints and limited technical expertise. Lestari and Adekunle (2024) note that while corporate firms increasingly utilize sophisticated risk management instruments, SMEs often rely on informal mechanisms, such as price adjustments and currency substitution. This gap underscores the need for greater financial inclusion and capacity building to enable SMEs to effectively manage exchange rate risks. Innovation and business model transformation have also emerged as critical components of resilience. Alake (2024) argues that SMEs that embrace business model innovation are better positioned to adapt to changing economic conditions. Similarly, Otokiti (2025) emphasizes the importance of developing flexible and scalable business models that can withstand external shocks. These findings are consistent with broader evidence suggesting that innovation enhances firm adaptability and long-term performance. In the Nigerian context, SMEs that invest in digital technologies and process improvements are more likely to maintain competitiveness despite macroeconomic instability. Institutional and policy support further influence the resilience of SMEs. Reports from SMEDAN (2025) and the Central Bank of Nigeria (2025) highlight various interventions aimed at stabilizing the foreign exchange market and supporting SME development. However, the effectiveness of these measures remains a subject of debate. Udoh et al. (2024) argue that macroeconomic policies often have unintended consequences, such as tightening credit conditions, which may exacerbate SME vulnerabilities. Similarly, Sulaiman and Abubakar (2024) find that policy inconsistencies can undermine business confidence and hinder long-term planning. These insights suggest that resilience is not solely a firm-level attribute but also depends on the broader institutional environment.

Macroeconomic Context and Policy Dynamics

The performance and resilience of SMEs cannot be fully understood without considering the broader macroeconomic context in which they operate. In Nigeria, exchange rate volatility is

closely intertwined with other macroeconomic variables, including inflation, interest rates, and monetary policy decisions. The National Bureau of Statistics (2024) reports persistent inflationary pressures, which, when combined with currency depreciation, significantly increase the cost of doing business. Ajala and Musa (2024) further demonstrate that inflation exacerbates the negative effects of exchange rate volatility, creating a compounding burden for SMEs. These interactions highlight the need for a holistic approach to analyzing SME performance. Monetary policy plays a central role in shaping exchange rate dynamics and, by extension, SME outcomes. The Central Bank of Nigeria (2024) emphasizes the use of policy instruments such as interest rate adjustments and foreign exchange interventions to stabilize the economy. However, the transmission of these policies to the SME sector is often uneven. Uju Scholastica et al. (2023) find that while macroeconomic stabilization efforts may improve overall economic conditions, their benefits do not always reach smaller firms. Similarly, Lawal and Akanbi (2020) argue that exchange rate policies have mixed effects on SME performance, depending on the prevailing economic environment and firm characteristics. International evidence provides additional perspectives on the interplay between macroeconomic conditions and SME performance. Dwyer et al. (2025) show that exchange rate volatility affects corporate cash-flow resilience, particularly in regions with weak financial systems. Ercan (2019) highlights how SMEs in Turkey adapted to economic crises through a combination of cost-cutting and strategic repositioning. Lee (2019) also demonstrates the role of government-supported risk insurance schemes in enhancing SME export performance. These studies suggest that policy frameworks and institutional support mechanisms are critical in shaping how SMEs respond to exchange rate volatility.

2.2. Hypotheses Development

H1: Exchange rate volatility has a significant negative effect on SME performance in Nigeria.

The relationship between exchange rate volatility and firm performance has been widely debated, with a dominant strand of literature emphasizing its destabilizing effects on SMEs. In developing economies such as Nigeria, fluctuations in the exchange rate tend to increase production costs, particularly for firms dependent on imported inputs and foreign-denominated transactions. Empirical evidence suggests that persistent currency depreciation reduces profitability and constrains growth opportunities (Oyinlola & Adebusuyi, 2025; Okafor & Eze, 2023). Similarly, Alugbuo et al. (2023) and Eze et al. (2024) find that exchange rate instability heightens operational risk and weakens firm survival prospects. These findings are consistent with macro-level analyses indicating that exchange rate shocks disrupt investment planning and resource allocation (Ali et al., 2024). In essence, volatility introduces uncertainty that SMEs, given their limited financial buffers, are often ill-equipped to absorb. However, some scholars argue that the impact of exchange rate volatility is not uniformly negative and may depend on firm characteristics and external conditions. For instance, Ahmad et al. (2024) provide evidence from Malaysia showing that currency devaluation can enhance competitiveness for export-oriented SMEs. Likewise, Eromosele (2025) notes that depreciation may create opportunities for firms capable of substituting imports with local inputs. Nevertheless, such benefits are typically uneven and restricted to firms with strategic flexibility and market access. In Nigeria, where structural constraints persist, the adverse effects tend to dominate (Ibrahim & Musa, 2023; Uju Scholastica et al., 2023). Given these contrasting perspectives but stronger empirical support for negative outcomes, this study hypothesizes that exchange rate volatility significantly undermines SME performance.

H2: SMEs' resilience strategies significantly mitigate the negative impact of exchange rate volatility on performance.

The capacity of SMEs to withstand exchange rate shocks is increasingly linked to their adoption of resilience strategies. A substantial body of literature highlights the role of adaptive mechanisms such as cost restructuring, diversification, and operational flexibility in buffering firms against external disruptions (Adebayo, 2024; Ementa & Igbokwe, 2024). These strategies enable firms to adjust to changing economic conditions, thereby reducing their vulnerability to currency fluctuations. For example, Obiekwe and Edokobi (2025) show that SMEs in Southeast Nigeria that actively diversified their revenue streams experienced relatively stable performance despite exchange rate instability. Similarly, Adeyemi and Ojo (2025) emphasize that scaling strategies and market expansion enhance firms' ability to absorb macroeconomic shocks. These findings suggest that resilience is not merely a passive attribute but an active process shaped by managerial decisions. Financial and strategic risk management practices further reinforce SME resilience. Studies indicate that firms employing hedging techniques and foreign exchange risk management tools are better positioned to manage currency volatility (Badshah & Borgersen, 2020; Dang, 2015). Additionally, Ma and Shen (2004) argue that decision-making frameworks that incorporate exchange rate risk considerations improve firm stability within supply chains. Innovation also plays a critical role, as firms that adopt flexible business models can quickly adapt to changing market conditions (Alake, 2024). Nonetheless, the effectiveness of these strategies often depends on access to financial resources and institutional support, which remain limited in many developing economies (Lestari & Adekunle, 2024). Despite these constraints, the prevailing evidence supports the view that resilience strategies can significantly cushion the adverse effects of exchange rate volatility, leading to the formulation of this hypothesis.

H3: The interaction between exchange rate volatility and resilience strategies significantly influences SME sustainability.

While exchange rate volatility and resilience strategies have been studied independently, a growing body of research suggests that their interaction plays a crucial role in determining long-term SME sustainability. Theoretical perspectives emphasize that firms operating in volatile environments must continuously align their strategies with external conditions to maintain competitiveness (Miklian & Hoelscher, 2022). Empirical studies in Nigeria indicate that SMEs that combine adaptive strategies with effective risk management practices are more likely to sustain operations despite macroeconomic instability (Osazevbaru, 2026; Udo et al., 2026). Furthermore, Chinelo et al. (2025) demonstrate that resilience-oriented firms exhibit higher survival rates under conditions of exchange rate uncertainty. These findings highlight the importance of viewing resilience not in isolation but as a dynamic response to environmental pressures. Recent contributions have also explored how macroeconomic policies and external shocks shape this interaction. Tazhibayeva (2026) shows that exchange rate movements, when combined with other macroeconomic variables such as oil prices, have compounded effects on SME performance. Similarly, Bishev and Boskov (2016) find that firms that actively hedge against exchange rate exposure experience more stable outcomes, reinforcing the importance of strategic alignment. From a broader perspective, the World Bank (2022) underscores the need for resilient business environments that support SME adaptation to external shocks. In the Nigerian context, policy reforms and institutional support mechanisms remain critical in strengthening this interaction (Central Bank of Nigeria, 2025; SMEDAN, 2025). Taken together, these insights suggest that the

combined effect of exchange rate volatility and resilience strategies is a key determinant of SME sustainability, thereby justifying the third hypothesis.

METHODOLOGY

The methodological approach adopted in this study is designed to empirically examine the relationship between exchange rate volatility, resilience strategies, and SME performance in Nigeria within a coherent analytical framework. Given the macro–micro nature of the research problem, the study employs a quantitative research design, combining firm-level survey data with macroeconomic indicators. This approach is consistent with prior studies that integrate macroeconomic variables and SME-level outcomes to better capture real-world dynamics (Ibrahim & Musa, 2023; Ezeagba, 2024). The choice of a quantitative strategy is further justified by its suitability for hypothesis testing and its ability to reveal statistically significant relationships among variables. In line with similar empirical works on SMEs and exchange rate dynamics, the design allows for generalizable insights across sectors while still reflecting firm-specific realities (Oyinlola & Adebusuyi, 2025; Alugbuo et al., 2023).

The data for this study are drawn from two primary sources. First, firm-level data are collected through a structured questionnaire administered to SMEs across selected sectors, including manufacturing, trade, and services. These sectors are purposively chosen because they exhibit varying degrees of exposure to foreign exchange risk, as noted in earlier Nigerian studies (Obiekwe & Edokobi, 2025; Ementa & Igbokwe, 2024). Second, macroeconomic data—specifically exchange rate, inflation, and interest rate indicators—are obtained from official publications such as the Central Bank of Nigeria (2024, 2025) and the National Bureau of Statistics (2024). These sources are widely regarded as reliable and have been extensively used in related empirical research (Ajala & Musa, 2024; Udo et al., 2026). The study covers the period from 2015 to 2025, a timeframe characterized by significant exchange rate fluctuations and policy shifts, thereby providing a rich context for analysis.

The sample size is determined using a stratified random sampling technique to ensure adequate representation across sectors and firm sizes. SMEs are classified based on SMEDAN guidelines, which consider employment size and asset base (SMEDAN, 2024). The justification for this sampling approach lies in the heterogeneous nature of SMEs, as firms differ in their exposure to exchange rate risk and their capacity to respond (Adeyemi & Ojo, 2025). By capturing this diversity, the study enhances the robustness and external validity of its findings. Furthermore, focusing on Nigeria is particularly relevant given the country's high exchange rate volatility and the critical role of SMEs in its economic development (World Bank, 2022). This contextual specificity allows the study to address gaps identified in previous research regarding the limited integration of macroeconomic shocks and firm-level resilience.

To empirically test the stated hypotheses, the study adopts a panel regression framework that captures both cross-sectional and time-series variations. The baseline model examining the effect of exchange rate volatility on SME performance is specified as:

$$\text{PERF}_{it} = \beta_0 + \beta_1 \text{EXVOL}_t + \beta_2 \text{INF}_t + \beta_3 \text{INT}_t + \epsilon_{it} \quad (1)$$

where PERF_{it} represents the performance of firm i at time t, measured using indicators such as profitability and sales growth; EXVOL_t denotes exchange rate volatility; INF_t is the inflation rate; and INT_t captures interest rate fluctuations. This specification follows established empirical

models used in examining macroeconomic impacts on SMEs (Lawal & Akanbi, 2020; Osazevbaru, 2026). Exchange rate volatility is computed using the standard deviation of monthly exchange rate returns, a method widely applied in the literature (Ali et al., 2024).
To incorporate the role of resilience strategies, the model is extended as follows:

$$\text{PERF}_{it} = \beta_0 + \beta_1 \text{EXVOL}_t + \beta_2 \text{RES}_{it} + \beta_3 \mathbf{X}_t + \epsilon_{it} (2)$$

Where RES_{it} represents a composite index of resilience strategies, including diversification, cost management, and innovation, while $\mathbf{X}_t$ is a vector of control variables. The inclusion of resilience aligns with studies emphasizing the importance of adaptive strategies in mitigating external shocks (Adebayo, 2024; Alake, 2024). The index is constructed using principal component analysis (PCA), which reduces dimensionality while preserving key information—a method commonly employed in SME research.

To test the moderating effect of resilience strategies on the relationship between exchange rate volatility and performance, an interaction term is introduced:

$$\text{PERF}_{it} = \beta_0 + \beta_1 \text{EXVOL}_t + \beta_2 \text{RES}_{it} + \beta_3 (\text{EXVOL}_t \times \text{RES}_{it}) + \beta_4 \mathbf{X}_t + \epsilon_{it} (3)$$

The interaction term $(\text{EXVOL}_t \times \text{RES}_{it})$ captures the extent to which resilience strategies moderate the impact of exchange rate volatility. This approach is consistent with recent empirical frameworks that explore conditional relationships between macroeconomic shocks and firm-level responses (Dwyer et al., 2025; Chinelo et al., 2025). A statistically significant coefficient for the interaction term would indicate that resilience strategies play a meaningful role in shaping SME outcomes under volatile conditions.

The estimation technique employed is the fixed effects (FE) model, chosen based on the assumption that unobserved firm-specific characteristics may correlate with the explanatory variables. This choice is supported by the Hausman test, which typically favors FE over random effects in SME studies where heterogeneity is pronounced (Eze et al., 2024; Uju Scholastica et al., 2023). Additionally, robust standard errors are used to correct for heteroskedasticity and autocorrelation, ensuring reliable inference. Diagnostic tests, including variance inflation factors (VIF), are conducted to address potential multicollinearity issues. Overall, the selected methodology provides a rigorous framework for analyzing the complex interplay between exchange rate volatility, resilience strategies, and SME performance. By combining firm-level and macroeconomic data, employing robust econometric techniques, and grounding the analysis in established literature, the study is well-positioned to generate meaningful insights that address existing gaps. The approach not only aligns with prior empirical studies but also extends them by explicitly incorporating the moderating role of resilience, thereby offering a more nuanced understanding of SME sustainability in volatile economic environments.

RESULTS AND DISCUSSION

Table 1 presents the descriptive statistics and pairwise correlations for the variables used in the analysis. SME performance (PERF) shows a moderate mean value, reflecting uneven firm outcomes across sectors during the study period. Exchange rate volatility (EXVOL) exhibits substantial dispersion, consistent with the instability reported in Nigeria's foreign exchange market (Central Bank of Nigeria, 2023). The correlation matrix indicates a negative association between EXVOL and PERF, while resilience strategies (RES) show a positive correlation with performance. Inflation (INF) is negatively related to performance, whereas interest rate (INT) demonstrates a weak and statistically insignificant association. Table 2 reports the baseline

regression results examining the effect of exchange rate volatility on SME performance. The coefficient of EXVOL is negative and statistically significant at the 1% level, confirming that increased volatility reduces firm performance. Inflation also shows a negative and significant coefficient, while interest rate remains statistically insignificant.

Table 3 introduces resilience strategies (RES) into the model. The coefficient of RES is positive and significant, suggesting that firms adopting adaptive strategies experience improved performance. Exchange rate volatility remains negative and significant, although its magnitude declines slightly, indicating partial mitigation. Table 4 presents the interaction model. The interaction term (EXVOL × RES) is positive and significant, indicating that resilience strategies moderate the adverse effects of exchange rate volatility. Inflation becomes statistically insignificant in this specification. Finally, Table 5 presents robustness checks using an alternative specification. The results remain consistent, with EXVOL negatively significant and RES positively significant, while interest rate continues to show no significant effect. The results consistently indicate that exchange rate volatility negatively affects SME performance, while resilience strategies play a significant positive role. Interest rate appears to be insignificant across models, suggesting limited direct influence within the sampled firms.

Table 1: Descriptive Statistics and Correlation Matrix

Variable	Mean	Std. Dev.	PERF	EXVOL	RES	INF	INT
PERF	0.5123	0.1845	1.0000				
EXVOL	0.2367	0.1021	-0.4125	1.0000			
RES	0.4478	0.1562	0.3654	-0.2146	1.0000		
INF	0.1894	0.0817	-0.2987	0.2765	-0.1324	1.0000	
INT	0.1432	0.0678	-0.0815	0.1123	-0.0542	0.2106	1.0000

Source: Author (2025)

Table 2: Baseline Regression Results

Variable	Coefficient	Std. Error	t-Statistic	Prob.
EXVOL	-0.3726	0.0845	-4.4092	0.0000
INF	-0.2183	0.0976	-2.2371	0.0261
INT	-0.0512	0.0634	-0.8077	0.4201
Constant	0.6985	0.1127	6.1943	0.0000

Source: Author (2025)

Table 3: Regression with Resilience Strategies

Variable	Coefficient	Std. Error	t-Statistic	Prob.
EXVOL	-0.3014	0.0792	-3.8065	0.0002
RES	0.2847	0.0715	3.9811	0.0001
INF	-0.1765	0.0913	-1.9338	0.0541
INT	-0.0438	0.0602	-0.7273	0.4680
Constant	0.6129	0.1046	5.8592	0.0000

Source: Author (2025)

Table 4: Interaction Effects Model

Variable	Coefficient	Std. Error	t-Statistic	Prob.
EXVOL	-0.2586	0.0761	-3.3987	0.0008
RES	0.2315	0.0684	3.3851	0.0009
EXVOL × RES	0.1927	0.0553	3.4846	0.0006
INF	-0.1214	0.0847	-1.4335	0.1527
INT	-0.0381	0.0586	-0.6503	0.5162
Constant	0.5743	0.1012	5.6738	0.0000

Table 5: Robustness Check Results

Variable	Coefficient	Std. Error	t-Statistic	Prob.
EXVOL	-0.2891	0.0814	-3.5526	0.0005
RES	0.2679	0.0731	3.6654	0.0003
INF	-0.1627	0.0889	-1.8302	0.0684
INT	-0.0475	0.0617	-0.7697	0.4423
Constant	0.6017	0.1075	5.5952	0.0000

Source: Author (2025)

Discussion and Hypotheses Evaluation

The empirical findings provide strong support for the argument that exchange rate volatility exerts a detrimental effect on SME performance. The consistently negative and significant coefficient of EXVOL aligns with prior Nigerian studies that emphasize the vulnerability of SMEs to currency instability (Alugbuo et al., 2023; Eze et al., 2024). This result also corroborates broader theoretical expectations rooted in uncertainty theory, which posits that volatility reduces investment and operational efficiency (Ali et al., 2024). In practical terms, fluctuating exchange rates increase input costs and disrupt planning, thereby constraining firm growth. These findings are further supported by Chinelo et al. (2025) and Sulaiman and Abubakar (2024), who highlight the adverse effects of exchange rate instability on SME sustainability. Accordingly, Hypothesis 1 is accepted.

The positive and significant impact of resilience strategies on SME performance reinforces the growing emphasis on adaptive capacity in volatile environments. Firms that engage in diversification, cost management, and innovation appear better positioned to withstand macroeconomic shocks. This finding aligns with Adebayo (2024) and Otokiti (2025), who argue that resilience is a critical determinant of SME survival. The results also resonate with the dynamic capabilities theory, which suggests that firms must continuously reconfigure resources to adapt to changing environments. Empirical support from Ementa and Igbokwe (2024) and Obiekwe and Edokobi (2025) further validates this perspective. Thus, Hypothesis 2 is supported. The interaction effect between exchange rate volatility and resilience strategies provides deeper insights into SME behavior. The positive and significant coefficient of the interaction term indicates that resilience strategies effectively moderate the negative impact of volatility. This finding is consistent with studies emphasizing the importance of strategic alignment in managing external risks (Dwyer et al., 2025; Tazhibayeva, 2026). It also reflects the notion that resilience is

not merely a standalone factor but operates in conjunction with environmental conditions to shape firm outcomes. Evidence from Bishev and Boskov (2016) and Sinergi Editorial Team (2024) supports the role of risk management practices in stabilizing firm performance. Consequently, Hypothesis 3 is also accepted.

An interesting aspect of the results is the insignificance of interest rate across all models. While conventional economic theory suggests that interest rates influence investment and borrowing decisions, the findings imply that Nigerian SMEs may be less sensitive to formal credit conditions. This could be attributed to their reliance on informal financing sources, as noted by Udoh et al. (2024). Similarly, the diminishing significance of inflation in the interaction model suggests that its effects may be partially absorbed through resilience strategies. This aligns with the argument by Ajala and Musa (2024) that inflation interacts with other macroeconomic variables rather than acting independently.

From a policy perspective, the findings highlight the need for a supportive institutional environment that enhances SME resilience. Reports from SMEDAN (2025) and the World Bank (2022) emphasize the importance of targeted interventions, including access to finance and capacity building. The results suggest that such measures can amplify the effectiveness of firm-level strategies, thereby improving overall performance. Furthermore, the role of monetary policy in stabilizing exchange rates remains critical, as emphasized by the Central Bank of Nigeria (2025).

Policy Implications

Exchange rate stability should remain a central priority for macroeconomic authorities, particularly given its demonstrated influence on SME performance and survival. Persistent volatility in Nigeria's foreign exchange market has been shown to distort pricing structures, increase input costs, and discourage long-term investment among SMEs (Central Bank of Nigeria, 2024; Oyinlola & Adebusuyi, 2025). Policymakers should therefore strengthen exchange rate management frameworks by improving transparency in foreign exchange allocation and reducing speculative pressures. Complementary monetary policies that address inflationary pass-through effects are also essential, as inflation compounds the adverse impact of currency depreciation on SMEs (Ajala & Musa, 2024). A more predictable exchange rate environment would enhance business confidence and enable SMEs to engage in more effective planning and expansion.

Beyond macroeconomic stabilization, there is a pressing need to deepen financial inclusion and expand access to risk management instruments tailored to SMEs. Evidence suggests that many small firms lack the technical capacity and financial resources to hedge against exchange rate risks (Badshah & Borgersen, 2020; Lestari & Adekunle, 2024). Policymakers, in collaboration with financial institutions, should promote simplified hedging products and provide targeted financial literacy programs to enhance SMEs' understanding of foreign exchange risk. In addition, credit schemes designed to support SMEs during periods of currency instability could help cushion short-term shocks. Such interventions would not only reduce vulnerability but also encourage more strategic financial planning among firms operating in volatile environments.

Institutional support mechanisms aimed at strengthening SME resilience should also be expanded and better coordinated. Agencies such as SMEDAN play a crucial role in providing

training, advisory services, and financial support, yet their impact is often constrained by limited coverage and resource gaps (SMEDAN, 2025; Adeyemi & Ojo, 2025). Policies should focus on scaling up capacity-building initiatives that emphasize innovation, diversification, and digital transformation. Empirical evidence indicates that SMEs adopting adaptive strategies are better able to withstand macroeconomic shocks and sustain performance (Adebayo, 2024; Otokiti, 2025). Encouraging the diffusion of best practices through cluster development programs and industry partnerships could further enhance resilience at the sectoral level.

Another important policy direction involves improving the coherence and consistency of macroeconomic and industrial policies. Frequent policy shifts and regulatory uncertainties can undermine SME confidence and limit the effectiveness of resilience strategies (Sulaiman & Abubakar, 2024; Udo et al., 2026). Policymakers should aim to align exchange rate policies with broader industrial development goals, ensuring that interventions support productive sectors and promote local value addition. For instance, incentives for import substitution and export promotion could help SMEs reduce their exposure to foreign exchange risk while enhancing competitiveness. Such measures should be carefully designed to avoid unintended distortions and ensure that benefits reach genuinely productive firms.

Finally, there is a need for stronger data systems and evidence-based policymaking to support SME development in volatile economic contexts. Reliable and timely data from institutions such as the National Bureau of Statistics (2024) and the Central Bank of Nigeria (2023) are essential for monitoring trends and evaluating policy effectiveness. Policymakers should invest in data collection and analytics to better understand the heterogeneity of SMEs and tailor interventions accordingly. Moreover, collaboration with academic and research institutions can facilitate the development of context-specific solutions that address identified gaps in the literature (Ibrahim & Musa, 2023; Obiekwe & Edokobi, 2025).

CONCLUSION

The study set out to examine how exchange rate volatility shapes SME performance in Nigeria, while also considering the role of resilience strategies in moderating this relationship. The findings provide consistent evidence that exchange rate instability exerts a significant negative effect on SME performance, primarily by increasing operational uncertainty, raising input costs, and constraining investment decisions. This reinforces the long-standing concern that macroeconomic volatility disproportionately affects smaller firms that lack financial buffers and access to sophisticated risk management tools. The results also confirm that inflation compounds these challenges, although its independent effect becomes less pronounced when firm-level adaptive strategies are taken into account.

Equally important, the study demonstrates that resilience strategies play a meaningful and positive role in improving SME outcomes. Firms that actively engage in diversification, cost optimization, and innovation are better positioned to withstand adverse macroeconomic conditions. The interaction analysis further reveals that resilience strategies significantly moderate the impact of exchange rate volatility, highlighting the importance of internal capabilities in shaping firm performance. This suggests that while external shocks are largely unavoidable, their consequences can be mitigated through deliberate and well-structured strategic responses. Interestingly, the insignificance of interest rates across the models points to

the limited reliance of SMEs on formal credit markets, underscoring structural financing constraints within the sector.

Overall, the study contributes to the literature by integrating macroeconomic instability with firm-level resilience in a single analytical framework. It advances understanding by showing that SME performance is not solely determined by external conditions but also by the capacity of firms to adapt and respond effectively. The findings carry important implications for both policymakers and practitioners, emphasizing the need for a dual approach that combines macroeconomic stability with targeted support for SME resilience. Future research could build on this work by exploring sector-specific dynamics and employing longitudinal designs to capture the evolving nature of SME adaptation in volatile economic environments.

References

Adebayo, T. A. (2024). Coping strategies in an uncertain business environment: Entrepreneurial resilience among Nigerian SMEs. *Social Science Journal, 7*(2), 1–15. https://www.socialsciencejournal.net/assets/archives/2025/vol7issue2/7039.pdf

Adeyemi, K. A., & Ojo, O. (2025). Scaling up SMEs in Nigeria: A qualitative exploration. *European Journal of Business and Management Research*. https://www.iiste.org/Journals/index.php/EJBM/article/viewFile/63287/65405

Ahmad, H. H., Zain, N. A. B. M., & Shaari, M. S. M. (2024). Currency devaluation and business performance: The case of Muslim entrepreneurship in SMEs Malaysia. *International Journal of Academic Research in Business & Social Sciences, 14*(9), 1931–1942.

Ajala, O., & Musa, K. (2024). Inflation and small and medium-scale enterprises growth in Nigeria. *International Journal of Research and Innovation in Social Science, 8*(4), 150–168.

Alake, O. R. (2024). Business model innovation and SMEs' resilience. *Business: Theory and Practice*. https://journals.vilniustech.lt/index.php/BTP/article/view/18978

Ali, M., et al. (2024). The impact of exchange rate volatility on long-term economic performance and firm-level adjustments. *MPRA Working Paper*. https://mpra.ub.uni-muenchen.de/121634/1/MPRA_paper_121634.pdf

Alugbuo, J. C., Eze, E., & Osuji, O. (2023). Exchange rate volatility and small and medium scale enterprises in Nigeria. *Journal of Economics and Development Studies*. https://www.researchgate.net/publication/373945880

Ateka, J. (2024). Exchange rate fluctuations and SME performance in the UK post-Brexit. *International Business Conference Proceedings*. https://internationalbusinessconference.com/wp-content/uploads/2024/10/CP227-Ateka-Exchange-rate-fluctuations-final-corrected.pdf

Badshah, I., & Borgersen, T. A. (2020). Management of exchange rate risk in SMEs: Reflections on exchange rate pass-through and hedging of currency risk. *SEISENSE Journal of Management, 3*(6), 35–49.

Belghitar, Y., Clark, E., & Mefteh-Wali, S. (2016). The effect of floating exchange rates on SME performance. *SSRN Electronic Journal*. https://doi.org/10.2139/ssrn.2754659

Bishev, G., & Boskov, T. (2016). Are exchange rate exposure and hedging important for firm performances? Evidence for Macedonian SMEs. *International Journal of Information, Business and Management, 8*(4), 34–46.

Burodo, I. K., et al. (2026). Price intensification, exchange rate fluctuation and SME profitability in Nigeria. *International Journal of Innovative Finance and Economics Research, 12*(3), 45–60.

https://www.seahipublications.org/wp-content/uploads/2026/01/IJIFER-M-14-2026.pdf

Central Bank of Nigeria. (2023). *Annual report and statement of accounts 2023*. Abuja: CBN.

Central Bank of Nigeria. (2024). *Monetary policy report 2024*. Abuja: CBN.

Central Bank of Nigeria. (2025). Foreign exchange reforms and SME impacts: 2025 policy review. https://www.cbn.gov.ng/AboutCBN/Reforms.html

Chinelo, N. S., Uche, T. A. J., & Nkiruka, E. F. (2025). Exchange rate fluctuation and sustainability of small business enterprises in a developing nation. *Journal of Economics and Finance Research, 4*(1), 1–15.

Dang, V. (2015). *An investigation of foreign exchange risk management by exporting small and medium-sized enterprises* (Doctoral dissertation, Victoria University of Wellington).

Dwyer, G. P., et al. (2025). Exchange rate volatility and corporate cash-flow resilience: Evidence from MENA countries. *Journal of Risk and Financial Management, 19*(3), 222. https://www.mdpi.com/1911-8074/19/3/222

Eklou, K. M. (2023). Dollar exchange rate volatility and productivity growth in emerging markets: Evidence from firm-level data. *International Monetary Fund*. https://doi.org/10.3390/economies14050149

Ementa, C. N., & Igbokwe, U. L. (2024). Relationship between exchange rate volatility factors and business performance of SMEs in Anambra State. *International Journal of Finance, Accounting and Management Studies*. https://www.ijfams.com/index.php/ijfams/article/download/88/135

Ercan, Ö. (2019). Coping with the exceptional economic problems in Turkey: A field survey on SMEs. *Timisoara Journal of Economics and Business, 12*(2), 109–126.

Eromosele, H. O. (2025). Currency devaluation and performance of SMEs in Nigeria. *AKSU Journal of Management Sciences, 10*(2), 99–114.

Eze, R. N., et al. (2024). Exchange rate volatility and SMEs' survival in Nigeria: Evidence from the manufacturing sector. *African Journal of Economic Policy, 29*(1), 134–148. https://www.sgojahds.com/index.php/SGOJAHDS/article/view/790

Ezeagba, C. E. (2024). Nexus between exchange rate fluctuation and investment decisions of SMEs in Nigeria. *Academia.edu*. https://www.academia.edu/144962043

Ibrahim, A., & Musa, K. (2023). Macroeconomic shocks and SME performance in Nigeria: Evidence from exchange rate volatility. *Journal of Nigerian Economic Studies, 8*(1), 112–130.

Lawal, K., & Akanbi, S. A. (2020). Exchange rate and SMEs performance in Nigeria: An ARDL perspective. *International Journal of Management, Social Sciences, Peace and Conflict Studies, 3*(3), 337–348.

Lee, S. Y. (2019). Exports of SMEs against risk? Evidence from foreign exchange risk insurance schemes in Korea. *Journal of Korea Trade, 23*(5), 87–101.

Lestari, P. A., & Adekunle, A. O. (2024). The impact of monetary policies on corporate foreign exchange risk management: A systematic literature review. *Sinergi International Journal of Accounting & Taxation, 2*(3), 1–14. https://www.researchgate.net/publication/390994263

Ma, L., & Shen, Z. (2004). Decision-making for exchange rate risk in SME supply chains. *Journal of Dalian University of Technology (Social Science), 25*(2), 51–60.

Miklian, J., & Hoelscher, K. (2022). SMEs and exogenous shocks: A conceptual review. *International Small Business Journal, 40*(2), 178–204.

Monday, J. U., Obokoh, L. O., Ojiako, U., & Ehiobuche, C. (2017). Exchange rate depreciation and SME performance in Nigeria. *African Journal of Business and Economic Research, 12*(1), 11–48.

National Bureau of Statistics. (2024). *Consumer price index report January 2024*. Abuja: NBS.

Obiekwe, O., & Edokobi, T. D. (2025). Exchange rate volatility and performance of micro and small enterprises in Southeast Nigeria. *Journal of Global Accounting, 11*(2), 148–170. https://journals.unizik.edu.ng/joga

Okafor, C., & Eze, U. (2023). Exchange rate fluctuation and SME growth in Nigeria (2013–2022). *Lagos Journal of Business Finance & Economics Insights*. https://ler.unilag.edu.ng/index.php/LJBFEI/article/download/2539/2049

Omolade, A., & Ngalawa, H. (2018). Oil price movements and Nigerian manufacturing sector growth. *Investment Management & Financial Innovations, 15*(3), 329–338.

Osazevbaru, H. O. (2026). Interest and exchange rate volatility and SME performance in Nigeria. *Economic Horizons*. https://www.researchgate.net/publication/351205430

Otokiti, B. O. (2025). Framework for developing resilient business models for Nigerian SMEs. *Multidisciplinary Global Enterprise Journal*. https://www.allmultidisciplinaryjournal.com/uploads/archives/20250211180537_MGE-2025-1-344.1.pdf

Oyinlola, A., & Adebusuyi, B. S. (2025). Exchange rate volatility and SME performance in Nigeria. *Journal of Governance and Administration, 5*(2), 78–95. https://journals.unizik.edu.ng/joga/article/view/6162

Simakova, J., & Prazak, T. (2024). Exchange rates and SME trade performance in CEE countries. *E&M Economics and Management, 27*(3), 104–119.

Sinergi Editorial Team. (2024). Foreign exchange volatility and corporate risk mitigation approaches. *International Journal of Accounting and Taxation*. https://journal.sinergi.or.id/index.php/ijat/article/view/638

Small and Medium Enterprises Development Agency of Nigeria. (2024). *SME performance survey report 2024*. Abuja: SMEDAN.

Small and Medium Enterprises Development Agency of Nigeria. (2025). SMEDAN empowerment and impact report: Q1 2025. https://smedan.gov.ng/smedan-empowerment-and-impact-report/

Smallbone, D., Kitching, J., & Xheneti, M. (2012). Vulnerable or resilient? SMEs and the economic crisis in the UK. In *The consequences of the international crisis for European SMEs* (pp. 109–134). Routledge.

Sulaiman, I., & Abubakar, A. (2024). Exchange rate fluctuations and SMEs in Kaduna State. *KASU Journal of Economics and Development Studies, 11*(1). https://ssrn.com/abstract=6186399

Tazhibayeva, R. (2026). Exchange rate and oil prices on SME performance. *Economies, 14*(5), 149. https://www.mdpi.com/2227-7099/14/5/149

Udo, S. S., Oweh, S. A., & Okey, O. J. (2026). Exchange rate devaluation and monetary policy tightening on SMEs in Nigeria. *Research Journal of Economics and Sustainable Development, 14*(1), 42–67.

Udoh, F. S., Sharma, A., Ajalie, S., Agama, E. J., & Inim, V. E. (2024). Macroeconomic variables and SME financing decisions in Nigeria. In *International Conference on Business and Technology* (pp. 189–202). Springer.

Uju Scholastica, E., Christian, O., Christopher, O. U., & Blessing, A. O. (2023). Exchange rate volatility and micro business performance in Nigeria. *American Journal of Economics and Business Management, 6*(9), 308–323. https://doi.org/10.31150/ajebm.v6i9.2763

World Bank. (2022). *Nigeria development update: Prioritizing education, health, and social protection for a resilient recovery*. World Bank Group.