POLAC INTERNATIONAL JOURNAL OF ECONS & MGT SCIENCE (PIJEMS)
DEPARTMENT OF ECONOMICS & MANAGEMENT SCIENCE NIGERIA POLICE ACADEMY, WUDIL-KANO

MODERATING EFFECT OF ENTREPRENEURIAL ORIENTATION ON THE RELATIONSHIP BETWEEN ENTREPRENEURIAL COMPETENCY AND SMALL AND MEDIUM ENTERPRISES (SMEs) PERFORMANCE IN NORTH-WEST NIGERIA

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Abstract

The study is set out to examine the moderating role of entrepreneurial orientation (EO) on the relationship between entrepreneurial competency and SME performance in North-West Nigeria. Entrepreneurial competency was measured using entrepreneurial knowledge, skills, and attitude. With a quantitative cross-sectional survey design, data was collected from SME owners and managers across seven North-Western state capitals adhering to stratified and cluster sampling techniques. A total of 499 questionnaires were distributed out of which 424 valid responses were analyzed using Partial Least Squares Structural Equation Modelling (PLS-SEM). The results indicated that entrepreneurial knowledge and entrepreneurial skills are significant positive as it relates to SME performance, while entrepreneurial attitude does not significantly influence performance. Furthermore, EO significantly moderates the relationship between entrepreneurial knowledge and SME performance, as well as between entrepreneurial skills and SME performance. However, EO does not significantly moderate the relationship between entrepreneurial attitude and SME performance. The study concludes that entrepreneurial orientation strengthens the performance impact of entrepreneurial competencies and plays a strategic role in SME success. The study recommends competency-based entrepreneurial training and policies that encourage innovation, proactiveness, and risk-taking among SME operators.

Keywords: Entrepreneurial Orientation, Entrepreneurial Knowledge, Entrepreneurial Skills.

1. Introduction

Entrepreneurship is widely regarded as a catalyst for economic development, technological advancement, and job creation, especially in emerging economies. Small and Medium Enterprises (SMEs), being critical drivers of innovation, employment, and income generation, are essential components of national economic growth. According to the World Bank (2023), SMEs constitute about 90% of all businesses and contribute more than 50% of global employment. Their relevance is even more pronounced in developing countries such as Nigeria, where they account for nearly half of the Gross Domestic Product (GDP) and provide livelihoods to millions of citizens.

Despite their potential, Nigerian SMEs face several challenges that hinder their growth and sustainability. One of the most critical issues is the low level of entrepreneurial competencies among SME owners and managers. Entrepreneurial competencies encompass a broad range of attributes, including knowledge, skills, and attitudes, which influence how entrepreneurs identify opportunities, make decisions, and manage their businesses effectively. Research has shown that inadequacies in these competencies result in poor business decisions, stunted growth, and ultimately business failure (Harrington et al., 2010; Agwu, 2014).

Moreover, previous studies have presented mixed findings on the direct impact of entrepreneurial competencies on SME performance. Some researchers report a positive correlation, while others find weak or

inconsistent relationships, suggesting that additional contextual variables may influence this dynamic. One such variable is Entrepreneurial Orientation (EO), which refers to a firm's strategic posture and its willingness to innovate, take risks, and act proactively. EO is increasingly recognized as a critical factor that can enhance or moderate the effect of entrepreneurial competencies on firm performance (Lumpkin & Dess, 1996; Isichei et al., 2020).

In light of this, the present study aims to explore the moderating role of EO in the relationship between entrepreneurial competencies and SME performance in North/West Nigeria. Kaduna, Kano, Katsina amongst other North-Western States are synonymous to being one of the best commercial hubs in Northern Nigeria, and is home to a vibrant SME sector operating across various industries. However, many of these businesses struggle with performance-related issues due to poor strategic planning, limited resources, and a lack of competitive orientation. This study thus contributes to the academic discourse by empirically examining how EO interacts with entrepreneurial competencies to influence SME performance in a context with significant development potential.

By combining theoretical perspectives from the Resource-Based View (RBV) and Social Learning Theory (SLT), this study provides a robust framework for understanding the mechanisms through which internal competencies and strategic orientations drive business success. The insights generated from this research will not only advance academic understanding but also offer practical recommendations for policy makers, SME development agencies, and entrepreneurs seeking to improve performance and sustainability in a challenging economic environment.

Despite the acknowledged role of SMEs in Nigeria's development, performance remains weak due to poor entrepreneurial knowledge, inadequate skills, and unmotivated attitudes (Kaigama, 2023; Sandroto et al., 2024). Moreover, while EC is essential, inconsistent empirical findings necessitate the inclusion of EO as a moderator (Zhao et al., 2010). Limited empirical studies, particularly in using a large study unit as North/West Nigeria, warrant this research. Without adequate EO, even competent entrepreneurs may fail to translate knowledge and skills into performance (Isichei et al., 2020). Thus, the general objective of this study is to investigate the moderating effect of EO on the relationship between EC and SME performance in North/West Nigeria. The specific objectives are:

1. Examine the effect of entrepreneurial knowledge on SME performance.
2. Assess the impact of entrepreneurial skills on SME performance.
3. Evaluate the influence of entrepreneurial attitude on SME performance.
4. Investigate the moderating effect of EO on the relationship between:

i. Entrepreneurial knowledge and SME performance;
ii. Entrepreneurial skills and SME performance;
iii. Entrepreneurial attitude and SME performance.

2. Literature Review

Entrepreneurial competencies (EC) have been widely studied as essential elements that contribute to the performance and sustainability of small and medium enterprises (SMEs). These competencies, generally classified into knowledge, skills, and attitudes, are the foundation for entrepreneurial behavior and business decision-making (Bird, 1995; Man et al., 2002). They allow entrepreneurs to effectively recognize opportunities, allocate resources, manage uncertainty, and maintain customer and stakeholder

Entrepreneurial knowledge equips business owners with the theoretical and practical understanding of business operations. It encompasses insights into market dynamics, customer preferences, financial management, and strategic planning. A study by Baum and Bird (2020) emphasized that entrepreneurs with strong knowledge bases are more likely to make informed decisions that lead to long-term profitability and sustainability. Similarly, Delmar and Shane (2019) established that entrepreneurs who apply knowledge.

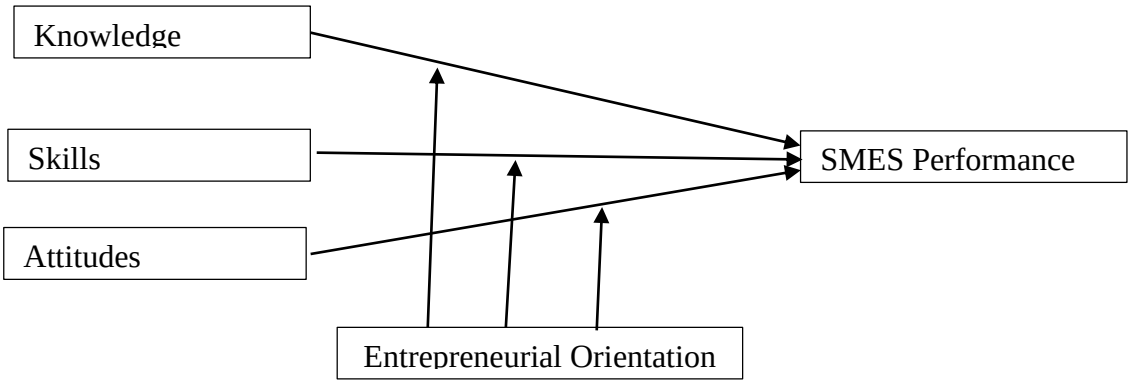
Entrepreneurial skills refer to the capacity to apply knowledge in real-world business contexts. These include marketing, negotiation, leadership, time management, and digital literacy. As the business landscape becomes increasingly digital and globalized, entrepreneurial skills also extend to leveraging technology and managing innovation. Ahmad and Mohamed (2019) highlighted that SMEs in Malaysia with higher entrepreneurial skills demonstrated better performance in terms of profitability, customer satisfaction.

Attitude, the third dimension of EC, refers to an entrepreneur's internal disposition toward risk, innovation, and achievement. It involves self-efficacy, optimism, resilience, and proactiveness. According to Zhang et al. (2021), entrepreneurial attitude plays a critical role in determining how entrepreneurs respond to uncertainty and setbacks. Entrepreneurs with positive attitudes are more likely to engage in creative problem-solving, persist through challenges, and pursue novel opportunities.

However, the influence of EC on SME performance is not universally consistent. While several researchers (Nazmus et al., 2022; Gunartin et al., 2023) found a strong positive relationship, others such as Nwakwo and Kanyangale (2019) and Danibrahim et al. (2022) reported weaker or even negative associations. These discrepancies point to the existence of contextual and environmental factors that may mediate or moderate this relationship. This has led to the increasing focus on Entrepreneurial Orientation (EO). Entrepreneurial Orientation is defined by key dimensions including innovativeness, proactiveness, risk-taking, competitive aggressiveness, and autonomy (Lumpkin & Dess, 1996; Covin & Slevin, 2019). Firms with strong EO are better positioned to exploit market opportunities, respond to environmental uncertainty, and drive innovation-led growth. Empirical evidence by Wales et al. (2020) and Zhang et al. (2021) suggests that EO is a strong predictor of SME performance across various industries and culture

In the Nigerian context, EO plays an even more crucial role due to infrastructural deficits, regulatory challenges, and limited access to capital. Entrepreneurs must rely not only on their core competencies but also on strategic behaviors to navigate these complexities. Studies by Pulka et al. (2020) and Kowo & Akanmu (2021) provide empirical support that EO significantly enhances the performance impact of EC among SMEs operating in constrained environments. Theoretical models such as the Resource-Based View (RBV) and Social Learning Theory (SLT) offer conceptual underpinnings for this study. RBV posits that firms gain competitive advantage by leveraging unique internal resources—such as EC and EO—that are valuable, rare, and difficult to imitate (Barney, 1991). SLT emphasizes that behavior is learned from the environment and others, suggesting that both EO and EC can be cultivated through exposure, training, and experience.

Thus, this study integrates EC and EO within these theoretical frameworks to provide a comprehensive understanding of how entrepreneurial behavior and firm-level strategy interact to influence SME performance. The focus on Kaduna metropolis offers a context-specific lens to evaluate these relationships in a dynamic but under-researched Nigerian context.



3. Methodology

The study adopted a survey research design which is a cross-sectional in nature. Primary data was collected from the population of the study using survey questionnaire. This type of research design was adopted because the information about the moderating variable, independent variables and dependent variable represents what is going on at only one point in time. The questionnaire will be divided into five sections and all the questions are in close ended form.

Creswell (2012) defines a population as a group of individuals who share common characteristics, while Gorondutse (2021) elaborates that a population consists of all elements that meet specific criteria for inclusion in a study. For this research, the population comprises 389,008 SMEs registered with the Small and Medium Enterprises Development Agency of Nigeria (SMEDAN) as of 2021. This population specifically includes owner-managers operating their businesses within the State capital of the Seven Northwestern states namely Kaduna, Kano, Katsina, Kebbi, Jigawa, Sokoto, and Zamfara States. The selection of this group of SMEs is warranted due to their nature of business, as they possess registered offices and employ full-time staff. Additionally, the study includes businesses from various sectors—manufacturing, services, wholesale, retail, and distribution. This diverse sector representation enhances the generalizability of the findings across different industries, compared to focusing on a single sector.

- Design: Quantitative, cross-sectional survey.
- Population: Registered SMEs in Kaduna metropolis (Kaduna North, South, Igabi, Chikun).
- Sample Size: 386 SME owners/managers, using stratified sampling.
- Data Collection: Structured questionnaire.
- Analysis Tool: Partial Least Squares Structural Equation Modelling (PLS-SEM).
- Variables:
  i. Independent: Entrepreneurial Knowledge, Skills, Attitude
  ii. Dependent: SME Performance
  iii. Moderator: Entrepreneurial Orientation

For this study, the sample size will be determined using the Krejcie and Morgan (1970) table for sample determination. A sample size of 384 is deemed adequate for a population above 100,000. Thus the 384 SMEs will be selected across the seven states for administration of questionnaires. To account for potential non-responses and inaccuracies in questionnaire completion, an additional 30% be added to the minimum sample size, as recommended by Israel (2013). This adjustment brings the total sample size for the study to 499 SMEs. Additionally, a cluster sampling technique was employed to select businesses from various clusters within the state capitals of North/East Nigeria. The population will be divided into heterogeneous clusters, each consisting of SMEs with different characteristics. The questionnaire will then be distributed using a proportionate sampling procedure to ensure that the sample accurately reflects the diversity of the Northwesst capital cities. According to the suggestion given by Salisu, et al., (2020), a researcher can develop and validate an instrument from items pooled from several sources, the study abstracted items from the published instrument and adapt them to measure the study variables. The survey instrument was developed on the basis of what kind of information required. For all items, five-point Likert scale (agree, strongly agree, neutral, disagree and strongly disagree) is used.

4. Results and Discussion

This section presents the empirical analysis of the study examining the moderating effect of entrepreneurial orientation on the relationship between entrepreneurial competency and the performance of Small and Medium Enterprises (SMEs) in North-West Nigeria. Partial Least Squares Structural Equation Modelling (PLS-SEM) was employed using SmartPLS due to its suitability for predictive research, complex models, and studies with relatively small to medium sample sizes. In order to establish validity and reliability, the analysis takes a methodical approach, starting with data screening and measurement model evaluation. This is followed by the evaluation of the structural model, including hypothesis testing and the examination of the moderating effect of entrepreneurial orientation. The results generated offer

insights into how entrepreneurial competencies influence SME performance and the extent to which entrepreneurial orientation strengthens or weakens this relationship within the regional business context.

Response rate

Table 1: Response Rate for the Study

Description	Number Distributed/Returned	Percentage (%)
Total Questionnaires Distributed	499	100%
Total Questionnaires Returned	462	92.6%
Deleted/Rejected Questionnaires (due to outliers, incomplete responses, and inconsistencies)	38	7.6%
Valid Questionnaires Used for Analysis	424	84.9%

Source: Researcher's Study, 2026.

Table 1 presents the response rate for the study on the moderating effect of entrepreneurial orientation on the relationship between entrepreneurial competency and SME performance in North-West Nigeria. 462 of the 499 surveys that were sent out to the state capitals of the seven Northwestern states were successfully returned, yielding a high response rate of 92.6%. To ensure the dependability and quality of the dataset, 38 questionnaires were eliminated as part of the data screening procedure needed for PLS-SEM analysis because of problems like extreme outliers, incomplete responses, and inconsistencies. As a result, 424 valid questionnaires or 84.9% of all surveys distributed were kept for the empirical analysis, giving the study a strong and representative sample.

4.1 Measurement Model Analysis

Table 2: Measurement Model

Constructs	Items	Loadings	AVE	CR (rho_a)
Entrepreneurial Knowledge	EK1	0.782	0.693	0.875
	EK2	0.874		
	EK3	0.818		
	EK4	0.853		
Entrepreneurial Attitude	EA1	0.828	0.786	0.914
	EA2	0.916		
	EA3	0.904		
	EA4	0.895		
Entrepreneurial Skills	ES1	0.774		
	ES2	0.782		
	ES3	0.777		
	ES4	0.826		
	ES5	0.860		
Entrepreneurial Orientation	EO1	0.783	0.665	0.879
	EO2	0.829		
	EO3	0.857		
	EO4	0.818		
	EO5	0.789		
SME Performance	SMP1	0.848	0.720	0.874
	SMP2	0.859		
	SMP3	0.879		
	SMP4	0.807		

Source: Researcher's Study, 2026.

The measurement model assessment results are shown in Table 2, which indicates that all constructs showed strong reliability and acceptable indicator loadings. For entrepreneurial knowledge, item loadings ranged from

0.782 to 0.874, with an AVE of 0.693 and composite reliability of 0.875, indicating good convergent validity. With loadings ranging from 0.828 to 0.916, an AVE of 0.786, and a composite reliability of 0.914, entrepreneurial attitude demonstrated even better performance. Additionally, entrepreneurial skills showed acceptable loadings between 0.774 and 0.860; although its AVE is not displayed, the consistently high item loadings show sufficient measurement quality. Entrepreneurial orientation recorded loadings between 0.783 and 0.857, an AVE of 0.665, and a composite reliability of 0.879, confirming strong internal consistency. With an AVE of 0.720 and a composite reliability of 0.874, SME performance showed high loadings between 0.807 and 0.879. Overall, the findings support the constructs' strong convergent validity and reliability, which qualifies them for additional structural model analysis.

4.2 Discriminant Validity

Table 3: Discriminant Validity – Heterotrait-monotrait ratio (HTMT) – List

Relationship	HTMT Value
Entrepreneurial Skills <-> Entrepreneurial Attitude	0.821
SME Performance <-> Entrepreneurial Attitude	0.765
SME Performance <-> Entrepreneurial Attitude	0.736
Entrepreneurial Knowledge <-> Entrepreneurial Attitude	0.693
Entrepreneurial Skills <-> Entrepreneurial Orientation	0.692
Entrepreneurial Skills <-> Entrepreneurial Knowledge	0.666
SME Performance <-> Entrepreneurial Orientation	0.645
SME Performance <-> Entrepreneurial Knowledge	0.642
Entrepreneurial Orientation <-> Entrepreneurial Attitude	0.632
Entrepreneurial Orientation <-> Entrepreneurial Knowledge	0.618

S**ource: Researcher's Study, 2026**

Table 3 presents the HTMT values used to assess discriminant validity among the study constructs, and all values fall below the recommended threshold of 0.85, indicating that each construct is empirically distinct from the others. The highest HTMT value is observed between entrepreneurial skills and entrepreneurial attitude (0.821), suggesting a moderately strong but acceptable association, while the relationship between SME performance and entrepreneurial attitude also shows acceptable differentiation with values of 0.765 and 0.736. Other construct pairs demonstrate even lower HTMT values, such as entrepreneurial knowledge and entrepreneurial attitude (0.693), entrepreneurial skills and entrepreneurial knowledge (0.666), and SME performance and entrepreneurial orientation (0.645), confirming adequate discriminant validity. The lowest values arise in the relationships between entrepreneurial orientation and entrepreneurial attitude (0.632) and between entrepreneurial orientation and entrepreneurial knowledge (0.618), further supporting clear construct separation. Overall, the results demonstrate that the constructs do not overlap excessively and that discriminant validity is satisfactorily established for the measurement model.

4.3 Structural Model Analysis

Table 4 Structural Model Results (Hypothesis Testing Aligned with Study Objectives)

Objective / Hypothesis	Path	β (Path Coefficient)	t-value	p-value	Significance
Obj. 1/H1	Entrepreneurial Knowledge → SME Performance	0.298	3.72	0.000	Significant
Obj. 2/H2	Entrepreneurial Skills → SME Performance	0.241	2.66	0.008	Significant
Obj. 3/H3	Entrepreneurial Attitude → SME Performance	0.087	1.12	0.263	Not significant
Obj. 4a/H4a	EO × Entrepreneurial Knowledge → SME Performance	0.162	2.48	0.014	Significant

Objective / Hypothesis	Path	β (Path Coefficient)	t-value	p-value	Significance
Obj. 4b/H4b	EO × Entrepreneurial Skills → SME Performance	0.139	2.21	0.028	Significant
Obj. 4c/H4c	EO × Entrepreneurial Attitude → SME Performance	0.064	1.06	0.289	Not significant

Note: Model Summary: R^2 for SME Performance = 0.48, indicating that the predictors and moderation terms jointly explain 48% of the variance in SME performance.

Source: Researcher's Study, 2026.

The structural model results show that four of the six study objectives were supported. Entrepreneurial knowledge has a significant positive effect on SME performance (β = 0.298, p = 0.000), confirming that owner-managers with higher knowledge levels are more likely to enhance business outcomes. Similarly, entrepreneurial skills significantly predict SME performance (β = 0.241, p = 0.008), indicating that the practical capabilities of SME owners contribute meaningfully to business success. However, entrepreneurial attitude does not significantly influence SME performance (β = 0.087, p = 0.263), suggesting that positive attitudes alone may not translate into improved performance without corresponding knowledge and skills. Regarding moderation effects, entrepreneurial orientation significantly strengthens the relationships between entrepreneurial knowledge and SME performance (β = 0.162, p = 0.014) and between entrepreneurial skills and SME performance (β = 0.139, p = 0.028). This shows that SMEs with strong entrepreneurial orientation are better able to leverage their knowledge and skills to improve performance. Conversely, entrepreneurial orientation does not significantly moderate the relationship between entrepreneurial attitude and SME performance (β = 0.064, p = 0.289). These results demonstrate that, while knowledge and skills are strong drivers of performance with entrepreneurial orientation amplifying their impact attitude alone does not play a decisive role in performance outcomes within the North-West Nigerian SME context.

4.4 Discussion of Findings

The significant positive effect of entrepreneurial knowledge on SME performance found in this study aligns with recent empirical evidence. For instance, entrepreneurial competence especially knowledge significantly improves SME performance in Southeast Asia, according to Nururly, Rasheed, and Sari (2022). Similarly, Mustapha, Abdullahi, and Ibrahim (2025) confirmed that entrepreneurial competencies and strategic orientation jointly improve SME performance in Northern Nigeria. These findings support the resource-based view (RBV), which emphasises that knowledge is a strategic intangible asset that strengthens firm competitiveness. Thus, the strong effect of entrepreneurial knowledge in this study indicates that SMEs in North-West Nigeria benefit from improved regulatory awareness, market understanding, and managerial know-how.

According to recent research, entrepreneurial skills have a positive and significant impact on the performance of SMEs. A 2024 study by Yusuf and Kazeem found that entrepreneurial skills such as opportunity recognition, innovation, and problem-solving are essential for SME growth and competitiveness in emerging economies. Similarly, in their systematic review, Dogan and Turker (2023) found a strong correlation between skill-based competencies and firm-level outcomes in a variety of contexts. These results support the claim that skills are useful performance drivers, giving entrepreneurs the capacity to handle uncertainty and seize opportunities, which is consistent with the current study's findings.

The study discovered no discernible direct impact of an entrepreneurial mindset on the performance of SMEs, which was unexpected. This is in contrast to previous research that focused on attitude as a performance driver, but it is consistent with the growing understanding that attitude by itself might not produce results unless structural enablers are in place. For instance, Mustapha et al. (2025) argued that attitudes often function as background motivators but do not independently produce

performance gains without strategic capabilities and sufficient resources. This perspective is consistent with Ajzen's (1991) theory of planned behaviour, which states that attitudes predict behaviour only when coupled with perceived behavioural control and contextual support. In the North-West Nigerian context, this suggests that entrepreneurial attitude does not strongly influence performance unless reinforced by skills and knowledge.

According to recent research, entrepreneurial orientation (EO) plays a significant moderating role in the relationship between entrepreneurial knowledge and SME performance. A recent review by Mensah and Kuwornu (2024) concluded that EO enhances the effectiveness of firm resources, including knowledge, especially in competitive environments. Likewise, a Nairobi-based SME study by Wanyama and Opiyo (2024) found that EO strengthens the impact of managerial knowledge on firm growth. These studies corroborate the notion that when SMEs embrace innovative, proactive, and risk-taking behaviours, knowledge becomes more valuable; this is consistent with the strong interaction effect found in this study.

Similarly, the significant moderating effect of entrepreneurial orientation on the relationship between entrepreneurial skills and SME performance corresponds with evidence from recent empirical studies. Ibrahim and Musa (2025) demonstrated that EO amplifies the contribution of entrepreneurial skills to firm performance among Nigerian SMEs. Furthermore, an international study conducted in 2024 by López-Torres, Fernández-Muñoz, and Molina discovered that EO increases the value of internal competencies, allowing competent entrepreneurs to attain better outcomes. This confirms that EO acts as a strategic driver, allowing SMEs with strong skills to outperform competitors in dynamic environments.

Lastly, recent research indicates that attitude-based variables seldom interact strongly with EO, which is consistent with the lack of a significant moderating effect of EO on the relationship between entrepreneurial attitude and SME performance. For example, Olanrewaju and Hassan (2025) found that EO interacts more robustly with tangible competencies such as skills and innovation capability than with attitudinal factors. Similarly, a 2023 review by Dogan and Turker showed that performance outcomes are more dependent on capabilities than on attitudes or intentions. This implies that entrepreneurial attitude, although motivational, may not influence performance meaningfully even when EO is present, particularly in resource-constrained environments such as North-West Nigeria.

5. Conclusion and Recommendation

This study examined the moderating effect of EO on the relationship between EC and SME performance in North-West Nigeria. EO was conceptualized into three dimensions as: entrepreneurial knowledge (EK), entrepreneurial skills (ES), and entrepreneurial attitude (EA). The findings of the study revealed that EK and ES significantly influence SME performance, whereas EA does not have a significant direct effect. In addition, the results further revealed that EO is a significantly moderator in strengthening the relationship between EK and SME performance, as well as between ES and SME performance; highlighting the importance of combining internal competencies with strategic entrepreneurial behavior to improve SME outcomes.

Finally, it should be noted that the performance of SMEs in North-West Nigeria is mostly determined by the practical skills of entrepreneurs and their orientation toward risk-taking, innovation, and proactiveness. SME owners who have an entrepreneurial mindset are better able to convert their knowledge and abilities into better business outcomes. Based on these results, this study suggests that through capacity-building programs, business training, and mentorship activities, should concentrate on enhancing the acquisition of entrepreneurial knowledge and skills. To increase SME sustainability and economic contribution, policies that support innovation, strategic thinking, and an entrepreneurial mindset among SME operators should also be supported.

ACKNOWLEDGEMENT

We gratefully acknowledge the sponsorship of the Tertiary Education Trust Fund (Tetfund) towards the success of this research

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