

MODERATING EFFECT OF INNOVATION CAPABILITY ON THE RELATIONSHIP BETWEEN ENTREPREURIAL ORIENTATION AND SMES' PERFORMANCE IN KATSINA STATE, NIGERIA

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Abstract

This study investigates the moderating effect of innovation capability on the relationship between entrepreneurial orientation (EO) and Small and Medium Enterprises (SMEs) performance in Katsina State. The main objectives were to examine the individual effects of proactiveness, and competitive aggressiveness on SMEs performance and to evaluate the moderating effects of innovation capability on these relationships. The theoretical framework draws upon Resource-Based View (RBV), Dynamic Capabilities, and Resource-Dependency Theory to understand how SMEs can leverage their internal resources and capabilities to achieve superior performance. The study adopted a descriptive and cross-sectional survey design, focusing on SMEs owners within Katsina State as the target population. Population of the study consists of SMEs owners/managers operating within Katsina metropolis. A purposive non-probability sampling technique was used to select 309 participants as the sample size. Primary data was collected using a closed ended structured questionnaire. A partial least square structural equation modelling approach (PLS-SEM) was used to analyse the data with aid of SmartPLS 3. The findings revealed that proactiveness, risk-taking, and competitive aggressiveness significantly influenced SMEs performance in Katsina State. In addition, innovation capability as a moderator was found to have significant effect in the relationship between proactiveness, and SMEs performance. That is when a business possessed higher levels of innovation capability it will likely influence performance by enhancing its capacity to engage in risky projects but with high market potentials. While this study contributes to literature development in this direction, SMEs owner/managers, and policymakers should consider these results to design effective strategies that support SMEs' performance.

Keywords: Innovation Capability, Entrepreneurial Orientation, SMEs Performance

Introduction

Small and Medium Enterprises (SMEs) are integral to the global economy, playing a vital role in employment, wealth creation, and innovation (Hassan et al., 2018). In the Nigerian context, SMEs confront multifaceted challenges, especially in

Katsina State, as detailed in the Small and Medium Enterprises Development Agency of Nigeria (SMEDAN) report (2017). Issues such as inadequate access to finance, high business costs, poor infrastructure, an unfavorable business environment, and technology adoption hurdles significantly

impact the performance and profitability of SMEs in this region.

Despite these challenges, SMEs in Katsina remain pivotal contributors to the local economy, presenting substantial potential for job creation, poverty reduction, and innovation (Ogundele et al., 2020). Recognizing their importance, the government and stakeholders have implemented initiatives ranging from access to finance to technical assistance and training programs (SMEDAN, 2021). Understanding the unique challenges faced by SMEs in Katsina is imperative for tailoring effective strategies that foster their resilience and success within this specific context.

This study focuses on the interplay between Entrepreneurial Orientation (EO) and Innovation Capability as key determinants of SME performance in Katsina State. Existing research underscores the positive impact of EO and innovation capability on SME performance globally (Liu et al., 2019; Li et al., 2017). However, the nuances of these variables in the context of Katsina State remain underexplored. The study's significance lies in uncovering how innovation capability, influenced by the entrepreneurial orientation of SMEs in Katsina, acts as a crucial moderator, amplifying positive effects on overall performance.

The need for this research arises from a compelling gap in understanding the intricacies of SMEs in Katsina (Zhang & Merchant, 2020). By narrowing our focus to this specific region, we aim to establish a clear problem statement, objectives, and hypotheses. This targeted approach will

contribute valuable insights to both academic knowledge and practical policymaking, shedding light on how EO and innovation capability uniquely influence SME performance in Katsina State. Through a comprehensive exploration of these dynamics, this study seeks to provide nuanced perspectives that can inform strategic interventions, fostering the growth and sustainability of SMEs in Katsina State and beyond.

Research Hypotheses

The following statements were formulated to guide this research work.

H₀₁: Proactiveness has no significant effect on the performance of SMEs in Katsina state.

H₀₂: Competitive aggressiveness has no significant effect on the performance of SMEs in Katsina state.

H₀₃: Innovation capabilities does not moderate the relationship between Proactiveness and SMEs performance in Katsina state.

H₀₄: Innovation capabilities do not moderate the relationship between competitive aggressiveness and SMEs performance in Katsina state.

Conceptual/Theoretical Framework And Literature Review

SMEs Performance

SME performance refers to the ability of Small and Medium Enterprises (SMEs) to achieve their goals and objectives. It is a multidimensional construct that includes

various aspects such as financial performance, customer satisfaction, and employee satisfaction (Klynveld Peat Marwick Goerdeler (KPMG), 2017). Financial performance is often considered as the primary indicator of SME performance. It includes measures such as turnover, profitability, and return on investment (ROI) (Nguyen, 2019). However, financial performance alone does not provide a complete picture of the performance of SMEs. Other aspects such as customer satisfaction and employee satisfaction are also important indicators of SME performance (KPMG, 2017). For example, a company may have strong financial performance but poor customer satisfaction ratings. This could indicate that the company is not meeting the needs of its customers, which could lead to long-term problems for the business. Similarly, a company with high employee turnover rates may struggle to maintain its financial performance over time.

Typically, performance is ultimate outcome expected in every business activity (Muhammad et al., 2019; Ahmed et al., 2018; Galdeano et al., 2018; Ahmed, Mozammel, & Ahmed, 2018; Roespinoedji, 2019). SME performance is the total performance of the firm and is showed by the aggregate of performance of finance, marketing, and human resource functions of the organization in each time. Firms formulate goals and objectives to be achieved within a given time frame. Performance measures the organizations effectiveness against these set objectives. Thus, organizational performance refers to the ability of an organization to attain its goals such as high-profit margin, product

quality, and larger market share, better financial results at a stipulated time and by applying the relevant strategy.

Entrepreneurial Orientation

Entrepreneurial orientation has widely received attention in recent times in the entrepreneurship literature. Several empirical works have been carried out on this concept (Wales et al., 2013). Researchers conceptualized EO using different names such as entrepreneurial style, entrepreneurial behaviors, entrepreneurial intensity, corporate entrepreneurship, entrepreneurial posture, strategic posture, and entrepreneurial proclivity (Wiklund & Shepherd 2003; Griffith et al., 2006). This clearly shows that scholars have not finally agreed on a generally accepted EO definition in the entrepreneurship research studies (Wales et al. 2013).

Some research studies such as Lumpkin and Pidduck (2021) and Gupta and Dutta, (2018) traced the emergence of the EO concept to the earlier research activities (Mintzberg, 1973 and Khandwalla, 1977) that see EO as the entrepreneurs' character and lifestyle. Later, the EO concept evolved and is seen by researchers as a firm-level phenomenon rather than individual behavior (Robb & Stephens , 2021; Lumpkin & Dess, 2016). Entrepreneurial orientation is seen as an embodiment of different kinds of firm related behaviors and acts aimed at introducing new processes, new production techniques, manufacturing new products lines, and exploring newly discovered market opportunities (Luu & Ngo, 2019).

Innovation Capability

Innovation has been identified as a strategic driver in penetrating the competitive market to enhance resilience. Business innovation capabilities have been identified as an antecedent of sustainable economic development (Saunila et al, 2020). Indeed, innovation capability is considered the most valuable and inevitable knowledge-based intangible resource for the survival, competitiveness, and long-term sustainability of enterprises. However, measuring innovation capability is challenging. Multi-faceted constructs have arisen in the process of innovation. Innovation involves interrelated processes and relates to markets, new products, redesigning, processes, and production. Successful innovation arises from an amalgamation of progressive thoughts and a set of potential capabilities (Zhang & Merchant, 2020).

Innovation forms the backbone of all successful economies, globally. It is considered a vital source of economic growth in the provision of employment opportunities, reducing poverty, and contributing to the development of gross domestic production (GDP) of both developed and developing economies.

The capacity to constantly turn information and ideas into new products, processes, and systems for the benefit of the company and its stakeholders is characterized as innovation capability (Kafetzopoulos, 2015). Innovation capability is concerned not only with the ability to properly manage a new business avenue, but also with the ability to blend operational models of business (Lawson & Samson, 2001).

According to Heenkenda et al., (2022), innovation capability refers to the abilities and knowledge required to effectively engage, lead, and enrich existing technologies as well as create novel ties. Similarly, innovative capability can be identified as the ability to penetrate, design and utilize innovative methods for design and production simulation (Xu et al, 2018). Ngo and O’Cass (2009) introduced innovation-based capability as the integrative process of applying a firm’s collective knowledge, skills, and resources to achieve technical and non-technical innovation activities. The relationship between innovation and the achievement of better firm performance is widely demonstrated in existing empirical findings. The recent academic literature indicates that there is a high correlation between innovation and improvement of firm performance in the manufacturing sector (Loof & Heshmati, 2012 & Cheng, et al, 2014). The important aspect that enables SMEs to reach a high degree of competitiveness in both the domestic and international markets is their capacity to innovate (Çakar, & Ertürk, 2010). Organizations that invest in the development of their innovation potential have a higher probability of success in the future (Saunila, 2020). Likewise, there is a plethora of data in the academic literature suggesting a favourable relationship between a firm’s ability to innovate and its performance in the manufacturing business (Naranjo-Valencia et al, 2016).

Furthermore, innovation capability is also critical for SMEs to stay competitive in today's rapidly changing business environment (Organization for Economic

Co-operation and Development (OECD), 2018). Innovation allows SMEs to develop new products and services, enter new markets, and improve their processes and systems, which can help them to stay ahead of their competitors (Saridakis, 2019). Additionally, having strong innovation capability can also help SMEs to attract and retain customers, as well as attract and retain talented employees (Nguyen, 2019).

However, SMEs often face challenges in developing and maintaining their innovation capability. These challenges can include a lack of access to funding, lack of access to markets, lack of access to skills, and lack of access to information and networks (OECD, 2018). Additionally, SMEs may also face cultural and organizational barriers to innovation, such as a lack of a culture of innovation, lack of management support for innovation, and lack of a formal innovation process (OECD, 2018)

Theoretical Framework

Resource-Based View (RBV)

The Resource-Based View (RBV) emphasizes the strategic importance of a firm's internal resources and capabilities in gaining a competitive advantage. According to Penrose (1959), the effective utilization of resources in managerial decision-making provides a clear explanation for the differences among business firms. The RBV argues that, especially in volatile and unpredictable business environments, firms should focus on leveraging their rare and unique resources to improve performance rather than trying to control external pressures. The concept stresses the need to

keep resources scarce and inimitable to secure a sustained dominance of superior returns. In this study, RBV serves as a foundational theory by highlighting the importance of understanding and leveraging the internal resources and capabilities of small and medium enterprises (SMEs) in Katsina State, Nigeria. This perspective guides the investigation into the potential impact of entrepreneurial orientation and innovation capability on SME performance, acknowledging the significance of internal factors in a competitive context.

Dynamic Capabilities (DC)

According to Li and Liu, (2014), Dynamic Capabilities (DC) refer to an organization's ability to purposefully create, extend, or modify its resource base to adapt to dynamic and volatile market conditions. This theory suggests that firms must constantly integrate, reconfigure, and effectively utilize their dynamic resources and capabilities to cope with changing market dynamics (Amit & Schoemaker, 1993). Dynamic capabilities encompass organizational processes, knowledge acquisition, managerial skills, and business networks. The emphasis is on the need for a mix of static and dynamic resources to strengthen a firm's competitive position. In this study, the Dynamic Capabilities perspective informs the exploration of how SMEs in Katsina State can adapt to market dynamism through entrepreneurial orientation. By considering the dynamic nature of resources, knowledge acquisition, and managerial skills, the study is being aligned with the notion that a combination of static and dynamic capabilities is crucial for SMEs to sustain a competitive advantage.

Sample and Sampling Technique(s)

Given the nature of this study, Purposive non-probability sampling (also known as judgment, selective or subjective sampling) was used, which is nonprobability sampling method where elements for the sample are chosen by the judgement of the researcher, justified by the belief that researchers can

obtain a representative sampling using sound judgment which will result in saving time and money.

Yamane (1967) provides a simplified formula to calculate sample sizes. This formula was used to calculate the sample sizes and is shown below.

Where:

n= sample size

N= the population

e = level of significance

$$\text{Hence: } n = \frac{1367}{1+1367(0.05)^2} = 309 \text{ respondents}$$

TYPES OF BUSINESS	FREQUENCY	PERCENTAGE
Food and Beverages	76	24.60
Building construction	25	8.09
Jewelries	23	7.44
Machine and equipment	26	8.41
Trading	57	18.85
Service oriented	72	23.30
Others	30	9.71
Total	309	100.00

Source: Researcher’s Field work 2023

Model Specification

Following the work of Umar (2015), models for this study was adopted with modifications thus:

$$\text{SMEs’ Performance} = f(\text{Entrepreneurial Orientation}) \dots (3.1)$$

$$\text{SME’s Performance} = f(\text{Innovation Capability}) \dots (3.2)$$

$$\text{SME’s Performance} = f(\text{Entrepreneurial Orientation}) + \text{Innovation Capability} \dots (3.3)$$

Using logistic regression model to examine the relationship between entrepreneurial orientation and SMEs’ performance, the equation can be restated thus.

$$\ln\left(\frac{p}{1-p}\right) = \beta_0 + \beta_1X_1 + \beta_2X_2 + \dots + \beta_kX_k + \varepsilon \dots (3.4)$$

Using EO dimension and Innovation dimensions, we can write our models thus:

Literature Review

Robb, et al (2021) in a study titled “The Effects of Market Orientation and Proactive Orientation on the Export Performance of South African SMEs” aimed to examine the relationships between Market Orientation, Proactive Orientation, Market Capability and Innovation as they relate to the Export Performance of South African SMEs. A sample of 259 South African SMEs involved in exporting were collected. The study hypotheses were analysed using PLS-SEM. Mediation tests were also involved. Findings of the study showed that Market Orientation and Proactive Orientation were significant elements that could lead to the improved Export Performance of South African SMEs. The study recommended Market Orientation and Proactive Orientation as valuable strategic orientations that emerging market firms could use to leverage their limited resources as they aim to improve Export Performance.

Ryu, et al (2021) explored the effects of Relational Capital and Technological Innovation Capability on International Performance in SMEs, with a particular focus on the moderating effect of alliance proactiveness. Research hypotheses were developed and tested using data collected from 175 SMEs in South Korea. A hierarchical regression analysis was applied. The study showed that Relational Capital had a significant effect on the Technological Innovation Capability. Technological Innovation Capability had a significant influence on the International Performance. During this study, alliance proactiveness was found to moderate the relationship between Technological

Innovation Capability and International Performance. The key research findings implied that Relational Capital and alliance proactiveness are the key factors of International Performance as they improved the development of the Technological Innovation Capability. The study recommended new strategic alliances to further increase their knowledge range in homogenous and heterogenous industries so that they can achieve Internationalization by strengthening their technological innovation capabilities through alliance proactiveness.

Methodology

The study adopted descriptive and cross-sectional survey design. This type of research design is adopted because the information about the independent variables and dependent variable represents what is going on at only one point in time. Descriptive survey research sought to obtain information that describes existing phenomena by asking individuals about their perceptions, attitudes, behaviour, or values (Mugenda & Mugenda, 2006).

Population of the study

Polit & Hungler (1999) noted that population is an aggregate or totality of all the objects, subjects or members that conform to a set of specifications. Thus, the study focuses on the relationship between entrepreneurial orientation, innovation capability and SMEs’ performance. The target population of this study comprises of business owners within Katsina State. According SMEDAN (2017), Katsina state has approximately 1,367 small and medium enterprises (SMEs)

$$\text{SMEs' Performance} = \beta_0 + \beta_1 PA + \beta_2 CA + \beta_3 IC + \varepsilon \dots (3.5).$$

Where:

PA= Proactiveness

CA= Competitive aggressiveness

IC= Innovation Capability

α, β , are generally the intercept and slope coefficient whilst ε is the error term.

Method Of Data Analysis

The analysis was performed using Partial Least Squares Structural Equation Modelling (PLS-SEM). SmartPLS4 was used for both the measurement model and structural model, facilitating computation and interpretation of interrelationships among constructs.

Results And Discussion

The analysis of the measurement model is conducted to assess the reliability and validity of the latent variables (constructs). To establish the reliability and validity of the constructs, this study employed the reliability coefficient as a measure of internal consistency. Additionally, convergent validity is evaluated to check how well the constructs are measured by their selected indicators. See Table 1.

Table 1: Results of Reliability and Validity of the Latent Variables and Indicators

Variables	Cronbach's Alpha	rho_A	Composite Reliability	AVE
Proactiveness	0.843	0.852	0.905	0.762
Competitive Aggressiveness	0.871	0.874	0.913	0.724
SME Performance	0.695	0.731	0.831	0.625
Innovation Capability	0.859	0.869	0.904	0.702

Source: PLS-SEM

Table 1 above shows that the reliability test measurement for all latent variables. Cronbach alpha reliability result shows that the measurement reached high reliability coefficient of 0.859 and a minimum of 0.695, while the composite reliability result shows a maximum coefficient of 0.831 and a maximum of 0.905. Although the coefficient of 0.60 can be considered average, whilst 0.70 could be regarded as high reliability coefficient (Hair et al, 2006, Nunnally, 1978; Sekaran & Bougie, 2010, Sekaran, 2003) for both Cronbach alpha and composite reliability. SME

performance reached a reliability level of 0.695 which is considered average while proactiveness (0.843), competitive aggressiveness (0.871), and innovation capability (0.859) reached a reliability level of 0.8 and above which is considered highly reliable. Furthermore, in assessing convergent validity through the uses of Average Variance Extracted (AVE) is employed by taking the average of the squared factor loadings for each indicator on its corresponding construct. In Table 1 the AVE values for all constructs exceed

0.5, affirming that these constructs meet the criterion for convergent validity of 0.5.

Assessment of discriminant validity

According to this criterion, each construct's self-correlation should be higher. This self-

correlation is represented by the square root of AVE. This indicates that the constructs have discriminant validity, meaning they are distinct from each other and are not just measuring the same underlying concept. This study HTMT approach to assess discriminant validity. The result is presented in Table 2.

Table 2: Result of Heterotrait-Monotrait ratio (HTMT)

	Com-Ag	Innov-Cap	ProAc	SME-Perf
Com-Ag				
Innov-Cap	0.836			
ProAc	0.832	0.769		
SME-Perf	0.887	0.735	0.861	

Source: PLS-SEM

Table 2 presents the HTMT results which show that all the values were significantly different from 0.85 to 1, and the HTMT ratio of correlation indicates that all the variables are under the threshold of .85, establishing the discriminant validity of all the reflective constructs in the current study.

Structural Model Analysis

The analysis of the structural model involves evaluating the size and significance of the path coefficients, coefficient of determination (R2), and sizes of direct and moderating effects, and predictive relevance of the model. The PLS-SEM path model is visually represented in the Table 3.

Structural Model Analysis

Table 3: Direct Effects PLS-SEM

Hypotheses	Beta	STDEV	T Statistics	P.values	Sig
Com-Ag -> SME-Perf	0.320	0.062	5.159	0.000	Yes
ProAc -> SME-Perf	0.108	0.047	2.335	0.020	Yes
Innov-Cap -> SME-Perf	0.310	0.049	6.351	0.000	Yes

Source: PLS-SEM

Table 4.3 shows the direct effects of entrepreneurial orientation dimensions on SME performance. From the table, competitive Aggressiveness with a coefficient of 0.320, is found to have a positive and statistically significant relationship with SME performance. The t-statistic for Competitive Aggressiveness is

5.159, and the significance value is reported as 0.000 (p < 0.05). This conforms with the reports of Nora, et al., (2019), Kaur, et al., (2017), Lawal, et al, (2018), Zannah and Mahat, (2021), and Su, et al (2015) that highlighted the significance of competitive aggressiveness in business performance.

Also, Proactiveness has a positive and statistically significant impact on SME performance with a coefficient of 0.108, and a standard deviation of 0.047. The t-statistic for Proactiveness is 2.335, and the significance level is reported as 0.020 ($p < 0.05$). This indicates that one unit increase

in proactiveness is associated with 10.8% increase in SME performance. This is in line with Robb, et al., (2021), Ribau, et al., (2017), Hossain, et al., (2019), and Alireza, et al., (2019) that reported positive and significant link between organizational performance and proactiveness.

Table 4: Moderating Effect of Innovation Capability in the PLS-SEM

Hypotheses	Beta	STDEV	T Statistics	P.values	Sig
IC*ComAg -> SME-Perf	-0.042	0.051	0.672	0.502	No
IC*ProAc -> SME-Perf	0.215	0.045	4.809	0.000	Yes

Source: PLS-SEM

Table 4 above shows the moderating effect of Innovation Capability on the relationship between the dimensions of entrepreneurial orientation employed in the study (i.e proactiveness, risk taking, and competitive aggressiveness) and SME Performance. Table 4 shows that the combined effects of Competitive Aggressiveness and Innovation Capability on business performance of SMEs in Katsina was shown with a coefficient of -0.42, with a t-statistic of 0.672 and a P value of 0.502. The non-significant t-statistic indicates that Innovation Capability does not have a statistically significant moderating effect on the relationship between Competitive Aggressiveness and SME Performance. This suggests that, in this context, Innovation Capability does not appear to strengthen or weaken the relationship between Competitive Aggressiveness and SME Performance. The null hypothesis which states that innovation capability does not moderate the relationship between competitive aggressiveness and business performance cannot be rejected. The

findings contradict Mugambi, L. M., & Kinyua, G. M. (2020); Ryu, (2021) and Dogbe, et al., (2021) that reported significant moderating effect of innovation capability on the relationship between competitive aggressiveness and business performance.

The coefficient for the moderating effect of innovation Capability on the relationship between proactiveness and business performance is 0.215, indicating a positive moderating effect. The p.value of 0.000 indicates that the moderating effect is statistically significant. This implies that innovation capability of small and medium enterprises moderates the positive effect of proactiveness on business performance by about 21.5%. The null hypothesis that states that the innovation capability does not moderate the relationship between proactiveness, and business performance is here by rejected. This conforms with the reports of Rajapathirana (2018) that reported statistically significant moderating effect of innovation capability on the

relationship between proactiveness and business performance.

Conclusion And Recommendation

Conclusion

The study reveals that proactiveness and competitive aggressiveness are crucial entrepreneurial behaviors that significantly impact SMEs' performance in Katsina State. Proactive entrepreneurs seize opportunities and take the initiative to innovate, leading to better business outcomes. Competitive behavior also significantly influences SMEs' performance, as entrepreneurs willing to take competitive decisions are more likely to explore new opportunities and make innovative decisions. Innovation capability significantly moderates the effect of proactiveness on SMEs' performance. Higher levels of innovation capability enhance the positive impact of proactiveness on business performance. However, it does not significantly moderate the relationships between competitive aggressiveness and SMEs' performance.

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Recommendations

Based on the findings of the study, the following recommendations are proffered to enhance the performance of Small and Medium Enterprises (SMEs) in Katsina State:

1. Policymakers and business owners should promote a proactive culture among SMEs in Katsina State. Encouraging entrepreneurs to actively seek out opportunities, innovate, and take the initiative to implement new ideas can lead to better business outcomes and improved performance.
2. To enhance SMEs' competitiveness, stakeholders should provide access to market information, facilitate networking opportunities, and offer training programs on strategic positioning and market penetration.
3. Policymakers and support organizations should invest in initiatives that promote innovation capability among SMEs in Katsina State.

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