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INNOVATIVENESS AND OPERATIONAL EFFICIENCY OF AGRO-ALLIED SMEs IN NORTH CENTRAL NIGERIA

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Abstract

Innovativeness is widely recognized as a strategic capability that enables firms to develop new products, improve business processes, adopt emerging technologies, and respond proactively to changing market conditions. As a key dimension of entrepreneurial marketing, innovativeness enhances organizational competitiveness and long-term sustainability. This study examined the effect of innovativeness on the operational efficiency of agro-allied small and medium-sized enterprises (SMEs) in North Central Nigeria. Despite the significant contribution of agro-allied SMEs to employment generation, food security, and economic development, many enterprises continue to experience operational inefficiencies due to limited innovation adoption, inadequate technology, and resource constraints. Grounded in Schumpeter's Theory of Innovation, the study adopted a cross-sectional research design and collected primary data through a structured questionnaire administered to owners and managers of agro-allied SMEs. A sample size of 398 respondents was determined using Taro Yamane's formula, while 395 valid questionnaires were retrieved and analyzed using Partial Least Squares Structural Equation Modelling (PLS-SEM) with Smart PLS Version 4.0. The findings revealed that innovativeness has a positive and statistically significant effect on operational efficiency ($\beta = 0.664$, $t = 21.687$, $p < 0.001$), indicating that firms with higher levels of innovativeness are more likely to optimize resource utilization, improve productivity, reduce operational waste, and enhance overall operational performance. The study concludes that innovativeness is a critical entrepreneurial marketing strategy for improving the operational efficiency and competitiveness of agro-allied SMEs in North Central Nigeria. Accordingly, the study recommends that owners and managers of agro-allied SMEs should institutionalize innovativeness by continuously investing in new product development, process improvement, appropriate technologies, and creative problem-solving to achieve sustainable operational efficiency and long-term competitiveness.

Keywords: *Innovativeness; Operational Efficiency; Agro-Allied SMEs.*

Introduction

Innovativeness in the contemporary business world refers to an organization capability and willingness to create, adopt, and implement novel ideas, products, processes and services, or introducing business models that promote values and increases performance (Voghagi, 2026). The value innovation created has transformed beyond invention, it has given rise to changing ideas into practical business outcome. Entrepreneurial innovativeness examines a firm openness to creativity and exploring, developing new products, services or technological advancement (Lumpkin and Marvel, 2017). Overtime, innovation and adaptability in the emerging technologies have been indispensable for businesses seeking to remain relevant and deal with unexpected challenges in the constantly changing market landscape. Innovation

beyond creation of novel product services or processes, if we must adapt to change(s) it must exist in our daily lives if we must adapt to change (Ahmed, 2021).

Small and Medium-Sized Enterprises are more flexible, concentrated, they are not blessed with resources of larger corporations. Small and medium enterprises (SMEs) have been acknowledged as the key engine of economic growth, because of the fact that these enterprises have the potential of creating jobs, rising of production levels, economic activities and lessening of poverty. The strength and ability of the country to have reasonable businesses, provision of infrastructures, security, loans reached for one to have small and medium enterprises and services, etc. determines how wealthy the country or nation is. This cannot be achieved if government of such nations fails to extend supports for the business owners (Ali Aleid and Khalil, 2024).

However, Agro Allied enterprises in Nigeria face numerous challenges, including lack of access to modern technology, inefficient supply chain and inadequate infrastructure which limit their ability to effectively produce and distribute food products, to address these challenges and ensure long-term viability, it is necessary to explore innovative strategies that improve operational efficiency, such as adopting advanced farming techniques, strengthening supply chain management, and developing effective infrastructure. The urgency to increase productivity and reduce waste amongst Agro allied enterprises in Nigeria in North Central is propelled by the need for innovation in the operational efficiency of these Agro allied enterprises to ensure a sustainable food security when the population is growing and with the climate change. Thus, the study integrates innovativeness and operational efficiency to investigate the opportunities and challenges affecting the performance of small and medium enterprises. This study therefore examined the effect of innovativeness on operational efficiency of Agro Allied SMEs in North Central, Nigeria.

Literature Review

Innovativeness

Kristiawan (2018) asserted that innovativeness is the capability of a company or a business person to create and implement new concepts, techniques, or products that will improve performance and competitiveness. It is an active learning process that is based on experimentation, adaptation, and exploration of uncharted territories which allows alleviating the negative impact of digital platform threat on internationalization. Faroque et al. (2020) and Freixanet and Renart (2020) note that the ability to be innovative, network externalities, and early-mover advantages are the key factors that determine the success of e-commerce companies and the extent to which they can capture and maintain market share. Nguyen and Mort (2021) also add that innovative companies outcompete the competitors since they constantly discover and pursue new opportunities, and surpass customer expectations, as opposed to simply utilizing their current strengths. Likewise, Weerawardena et al. (2021) stated that the successful innovation leads to high-quality business performance that allows businesses to advance to new markets, find potential customers, and compete in an environment characterized by changes.

Operational Efficiency of Agro-Allied SMEs

As opined by Lea and Johnson (2020), operational efficiency denotes the capacity of an organization to effectively use its resources in order to produce maximum outputs at minimum effort, wastage, or expenses. It is a crucial element of maintaining the performance

and competitiveness of firms. Dalwai and Salehi (2021) emphasize that one of the managerial priorities should be the efficient use of resources because it increases productivity, profitability, and long-term sustainability. Industries such as agro-allied industry with high efficiency of operations will have more chances to perform well and hold an advantage in the current dynamic and competitive markets (Lee et al., 2019). Lea and Johnson (2020) noted that operational efficiency involves the effectiveness of delivery of products and services without necessarily compromising the quality. Streamlining of internal processes, minimization of bottlenecks, elimination of redundancies, and minimization of errors that slow down performance are some of the measures used to improve the efficiency of working. (Zekeri et al., 2024)

Theoretical Review

The study is anchored on Joseph Schumpeter (1912) which stands out as one of the most significant contributor to the theory of innovation. An Austrian-American economist Schumpeter developed the Theory of Innovation and Creative Destruction in 1855-1922, highlighting the vital role that innovation and entrepreneurship plays in economic expansion. According to him, entrepreneurs are change agents who launch novel goods, procedures, and business plans that improve established economic systems and promote growth.

Schumpeter maintained that entrepreneurial innovation propels "creative destruction," which is the process by which obsolete goods and methods are swapped out for more effective and novel ones. This idea emphasizes entrepreneurship as a key driver of market dynamism and industrial transformation. Schumpeter assumed that economic growth does not come from gradual improvements alone, but from radical innovations introduced by entrepreneurs. These innovations disrupt existing markets and create new ones, leading to what he famously called "creative destruction." It (i) Replaces old products, services, or production methods (ii) Destroys outdated industries (iii) Creates new industries and opportunities.

Schumpeter's theory offers a theoretical framework for comprehending how entrepreneurial marketing tactics improve the performance of small and medium-sized agro-allied businesses in North Central Nigeria. The characteristics investigated in this study that innovativeness is directly correspond with the theory's emphasis on operational efficiency for market expansion, and the development of new products. The way agro-allied entrepreneurs created new products, using contemporary manufacturing techniques, and investigated unexplored areas to achieve business development and profitability is consistent with Schumpeter's theory that entrepreneurs find market gaps and take advantage of them for competitive advantage.

The theory offers useful advice on how to encourage or maintain entrepreneurial activity in contemporary economies, according to critics like Kirzner (1973) and Drucker (1985). Some argued that the theory is out of date because it was developed in the early 20th century and does not sufficiently take into consideration the impacts of digital transformation, globalization, and policy intervention on entrepreneurship. Its lack of empirical backing that has also drawn criticism, making it challenging to implement in a variety of socio-economic circumstances. However, Schumpeter's focus on innovation is still very applicable to innovative marketing strategies to stay competitive in a competitive landscape.

In conclusion, this study has a strong conceptual basis in relation to Schumpeter's contribution to entrepreneurial marketing strategy which aim to gain a competitive edge

through invention and opportunity recognition, is firmly aligned with his emphasis on innovation, market development, and creative disruption. This study highlighted that innovation driven entrepreneurship will continue to be a crucial mechanism for improving the performance and sustainability of small and medium-sized agro-allied firms in North Central Nigeria by fusing Schumpeter's theories with modern marketing techniques.

In a bid to educate us more on the body of knowledge, the theory was very relevant because it establishes the fact that the end of a business cycle triggers the beginning of another one, meaning that it is revolutionary. So therefore, I'm not in support of scholars who assumed the theory is outdated. For an entrepreneur to survive in business, there should be continuous innovation in the process, product, services, market recognition and sourcing for raw materials.

Empirical Review

Voghagi (2026) examined the impact of process innovation on the operational performance of small and medium enterprises (SMEs) in Taraba State, Nigeria. The specific objective was to assess how technological capability, human resource management (HRM) practices, intellectual management and external synergy and networks influence SME operational performance. Grounded in the Resource-Based View, Human Capital Theory, Knowledge Based-View, Social Network Theory, the study used a descriptive and correlation research design. Primary data were collected from 365 SME owners and staff across six municipalities in Taraba State using a structured questionnaire using Likert scale. The outcome showed that high mean acceptance for all four process innovation strategies and operation output (range: 4.007-4.121 on a 5-point scale). The outcome of Pearson correlation showed that high positive relationship with operational output, with external collaborations and networks ($r=0.254$, <0.001) as the highest predictor, after which HRM ($r=0.240$) technological capabilities ($r=0.229$) and intellectual management ($r=0.194$). The study suggested that multi-strategic process innovation triggers operational output in a limited resource SMEs.

Amadasun and Mutezo (2025) examined the impact of entrepreneurial marketing strategies on competitive financial performance of SMEs in Lesotho in the following selected districts: customer relationship, strategic networking and customer satisfaction. The four districts of Butha-Buthe, Leribe, Mafeteng and Maseru in Lesotho are among the areas where there is augmented dominance of SME distribution in comparison to other districts in Lesotho, data of this region is collected. The questionnaire was the main research instrument in which a descriptive-correlation research design was carried out where the data of the four identified districts were analyzed through the usage of a descriptive and inferential statistics. The result revealed that the EM estimates predictor (customer relationship, strategic networking and customer satisfaction) showed results that each predictor has a significant statistical added value of SMEs in terms of dynamic market activities in achieving competitive financial performance.

Ajer, et al., (2023) examines the motivator of innovations among the agro-food micro, small and medium enterprises in Uganda. The research established drivers of agro-food MSME innovations. The field of study of the research was Kampala, Wakiso, Mukono and Jinja districts. The data was also based on a structured set of questions that utilized the targeted respondents in the form of cross section primary i.e., 521 agro-food MSME respondents in Uganda. The descriptive statistics, exploratory factor analysis and hierarchical regression analysis were used to analyse the data in SPSS. The result yielded that the innovation levels

of MSMEs fell on the high end side of about 80% approximately. Customer centered innovation would be increased when there is a set of rules that promote innovation and reward creative individuals.

Kiiru, Mukulu, and Ngatia (2023) investigated the relationship between innovativeness and performance among small and medium-sized enterprises (SMEs) in Kenya. Recognizing innovation as a critical driver of successful business operations, the study sought to assess its impact on enterprise performance, with a focus on animal feed manufacturing SMEs. Primary data for the study were collected through surveys administered to owners and directors of the targeted SMEs. Structural equation modelling (SEM) was employed as the primary analytical technique to evaluate the relationship between innovativeness and performance. The findings revealed that innovativeness has a positive and significant impact on business performance, indicating that SMEs with higher levels of innovation achieve better operational outcomes. Based on these results, the study concluded that fostering a culture of innovation is essential for SMEs to thrive and remain competitive in the market. Business owners and managers are encouraged to prioritize innovation as a strategic imperative to enhance performance.

Audretsch et al., (2023) examined the collaboration strategies and SME innovation performance. There was a growing recognition that collaboration is a key source of new knowledge and innovation in small and medium-sized enterprises (SMEs). Bridging the gap in open innovation in SMEs literature on returns to open innovation, the study demonstrated that a type of partner and its geographical proximity predict innovative performance in SMEs. Controlling for selection bias and endogeneity and using the panel data on 9,213 SMEs in the United Kingdom (UK) during 2002-2004, it was found that collaboration with suppliers customers domestically and internationally can facilitate SMEs in innovative that can further facilitates resilience in their respective disrupted supply chains.

Albert et al. (2022), explored the influence of sales growth and company size on firm value, utilizing ROA (return on asset) as a moderating factor. The study aimed to pinpointing consumer goods enterprises listed on the Indonesian Stock Exchange between 2015 and 2020. Employing a purposive sampling technique, the researchers selected 10 consumer goods companies for their methodology. The research approach involved utilizing the SPSS application for regression analysis, encompassing descriptive statistics, classical assumption tests, multiple linear regression analysis, moderation regression analysis, and hypothesis testing. The study's data exhibited normal distribution, devoid of multicollinearity and heteroscedasticity. The findings revealed that the impact of sales growth on firm value was negative and statistically insignificant.

A large number of studies (Kiiru et al. 2023; Ajer, et al., 2024; Amadasun & Mutezo 2025; Albert et al. 2022, Amadasun & Mutezo 2026) focus on general SMEs in developed and developing urban centres in places like United Kingdom, Indonesia, Kenya, Lesotho and Uganda, with limited attention to SMEs in Nigeria which have unique challenges such as access to farm inputs, seasonal demand, and perishable products. Furthermore, existing research primarily examines innovation within urban-centre businesses, leaving a knowledge gap in rural-based enterprises where agro-allied industries are dominant. Given that North Central Nigeria is a major hub for agricultural production, understanding the application of entrepreneurial marketing strategies in these regions is essential for improving SME performance

Methodology

The research design used was cross sessional research design where numeric data was gathered through a questionnaire for the purpose of testing formulated hypothesis for answering research question (Creswell, 2014). The studied population was 63,091 selected from owners and managers of Agro allied SMEs from milling sector in the North Central (Niger, Kwara, Kogi, Nasarawa, Plateau and Benue) States in Nigeria. The preference of the study was due to the fact that there were plenty of Agro Allied businesses in the region where variables of observation were being carried out, offering an extensive view of firms competitiveness in the context of big economic centres, mixed populations in the face of challenges of urbanization and globalization in North Central Nigeria.

Table 1. Population

State	Population of Small and Medium Enterprises (SMEs)
Kwara	38,005
Niger	15,870
Kogi	9,216
Total	63,091

Source: SMEDAN (2025)

Taro Yamane (1967) formula was used to find out the sample size for this study. This formula was adopted because it gives an accurate result of sample size required for the research study, since the population in the study was finite. It was stated in the formula as follows: $(n) = N / 1 + N (e)^2$

$$n = \frac{63,091}{1 + 63,091 (0.05)^2}$$

$$n = \frac{63,091}{1 + 63,091 (0.0025)}$$

$$n = 398.27$$

$$n = 398$$

The sample size for this study comprised 398 owners and managers of agro-allied SMEs, determined using the Taro Yamane (1967) sample size determination formula. Given the unequal distribution of SMEs across the three selected states, the sample was proportionately allocated using the Bowley (1962) proportional allocation formula to ensure adequate representation of respondents from each state.

A two-stage sampling technique was adopted for the study. At the first stage, purposive sampling was employed to select three states within Nigeria's North Central geopolitical zone, Niger, Kwara, and Kogi States, because of their relatively high concentration of agro-allied SMEs. The state capitals were specifically selected as the study locations due to the concentration of registered enterprises and ease of access to respondents. At the second stage, convenience sampling was used to administer questionnaires to SME owners and managers who were readily available and willing to participate in the study. This sampling approach facilitated access to respondents possessing the required information while ensuring the study objectives were effectively addressed.

Data were collected using a structured, closed-ended questionnaire designed to obtain quantitative information from respondents. The questionnaire was divided into three sections. Section A captured the socio-demographic characteristics of the respondents, including age, gender, educational qualification, number of employees, and years of business operation. Section B measured the construct of entrepreneurial marketing strategy, specifically innovativeness, using five questionnaire items. Innovativeness was operationalized as the firm's ability to develop and implement new ideas, introduce new or improved products and services, adopt new production or operational processes, and encourage creativity in responding to changing market demands. Section C measured SMEs' performance, with operational efficiency assessed using five questionnaire items. Operational efficiency was measured in terms of the firm's ability to optimize the use of available resources, reduce operational costs and waste, improve productivity, streamline business processes, and deliver products or services efficiently while maintaining quality standards.

All measurement items for the study were rated on a five-point Likert scale, ranging from 1 = Strongly Disagree to 5 = Strongly Agree, allowing respondents to indicate the extent to which they agreed with each statement.

Both descriptive and inferential statistics were employed for data analysis. Descriptive statistics, particularly frequencies and percentages, were used to summarize the socio-demographic characteristics of the respondents. Inferential statistics were employed to test the study hypotheses using SmartPLS Version 4.0, which enabled the assessment of both the measurement and structural models, including the relationships among the study variables.

Ethical principles were strictly observed throughout the research process. Participants were informed of the purpose of the study, and their voluntary consent was obtained before participation. They were assured of the confidentiality and anonymity of the information provided, and all data collected were used solely for academic purposes. Furthermore, the findings were reported objectively and responsibly in accordance with established research ethics.

Results and Discussion

Demographic Profiles of the Agro-Allied SMEs

Table 2: Legal Structure of Business

Business Legal Structure	Frequency	Percentage
a. Sole Proprietor	200	50.6%
b. Partnership	120	30.4%
c. Family Business	75	19.0%
Total	395	100%

Source: *Field Survey (2026)*

From the respondent's point of view, majority of 50.6% was made up of sole proprietorships. This signifies and suggests people prefer to have their own enterprises. The sample comprised of 30.4% partnerships and 19.0% family business. Sole proprietorships may be becoming more prevalent such that we may suggest a move towards more of a small and medium sized to independently run firm; family businesses may be less represented in this view as a result of limited succession planning or less family involvement in business activities.

Table 3: Income Level

Income Range	Frequency	Percentage
a. ₦100,000	150	38.0%
b. ₦200,000	100	25.3%
c. ₦500,000	90	22.8%
d. ₦1,000,000 and above	55	13.9%
Total	395	100%

Source: *Field Survey (2026)*

Survey results indicated that ₦100,000 per month was the most common income for respondents among the studied group as 38.0% selected this rate. The 25.3% of respondents earn ₦200,000 per month whereas ₦500,000 earners make up 22.8% of the total. The minority of respondents (13.9%) earns more than ₦1,000,000 but made up only a small percentage of the total respondents.

Table 4: Ownership Type of Enterprise

Ownership Type	Frequency	Percentage
a. Sole Proprietorship	200	50.6%
b. Partnership	120	30.4%
c. Limited Liability	75	19.0%
Total	395	100%

Source: *Field Survey (2026)*

Results from enterprise ownership studies match the findings on business legal structures since sole proprietorships made up 50.6% of the analysed sample. The data showed that partnerships take 30.4% of total respondents with limited liability companies at 19.0%. The prevalence of individually managed businesses as monitored by this trend will possibly affect

strategic decision-making processes and risk tolerance through their structure of central control.

Table 5: Business Support Services

Support Services	Frequency	Percentage
a. Mentoring, coaching, and networking	150	38.0%
b. Health services	100	25.3%
c. Free money	90	22.8%
d. Security	55	13.9%
Total	395	100%

Source: Field Survey (2026)

Business support services along with mentorship and coaching from networking proved to be the most frequently sought services which were obtained by 38.0% of respondents. Health services together with free financial assistance (grants) were accessed by 25.3% and 22.8% of the participants who took part in the study. People who contacted security support services accounted for 13.9% of respondents according to this survey. The high participation rates in business mentorship demonstrate the significance of knowledge sharing and business development training but the lower numbers seeking security services indicate weak official security support for businesses.

Table 6: Business Duration

Business Age	Frequency	Percentage
a. 1-3 years	150	38.0%
b. 4-8 years	120	30.4%
c. 9-12 years	80	20.3%
d. 12 years and above	45	11.4%
Total	395	100%

Source: Field Survey (2026)

A large number of the surveyed respondents (38.0 %) operate SMEs that are 1-3 years old indicating the comparatively fresh nature of local entrepreneurial activities. SMEs which operate between 4 and 8 years exist at 30.4% of survey participants whereas SMEs sustaining operations between 9 and 12 years compose 20.3% of the respondents. The distribution of

SMEs longevity shows that 11.4% of respondents operate SMEs that survive beyond 12 years yet this figure indicates a potential limitation in business sustainability in the region.

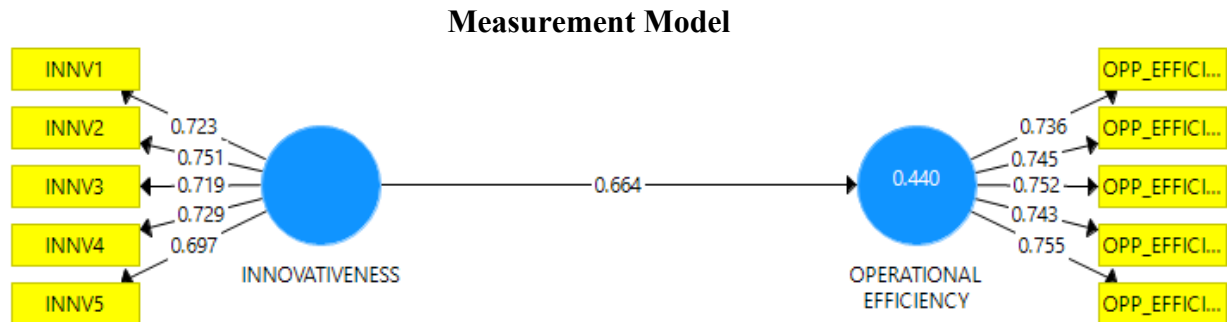


Fig. 1: Measurement Model for relationship of innovativeness with operational efficiency of SMEs in North Central Nigeria.

Table 7: Individual Cross Loading

Indicator	Construct	Outer Loading
INNV_1	Innovativeness	0.723
INNV_2	Innovativeness	0.751
INNV_3	Innovativeness	0.719
INNV_4	Innovativeness	0.729
INNV_5	Innovativeness	0.697
OPP_EFFICIENCY_1	Operational Efficiency	0.736
OPP_EFFICIENCY_2	Operational Efficiency	0.745
OPP_EFFICIENCY_3	Operational Efficiency	0.752
OPP_EFFICIENCY_4	Operational Efficiency	0.743
OPP_EFFICIENCY_5	Operational Efficiency	0.755

Note: only items with loading of less than (<) 0.500 were deleted due to measurement issue ($n=395$).

Source: *Smart PLS 4.0*

The table reported the outer loadings, which reflect the strength of the relationship between each observed indicator and its underlying latent construct. All indicators demonstrated strong loadings, ranging from 0.697 to 0.755, indicating that they share substantial variance with their respective constructs. While the ideal threshold for indicator reliability is ≥ 0.708 (Hair et al., 2019), INNV5 (0.697) falls only marginally below this cut off. Given that it remains well above the 0.40 removal threshold and that both constructs already meet the recommended standards for composite reliability ($CR > 0.80$) and convergent validity ($AVE > 0.50$), retaining INNV5 is methodologically sound. Overall, the results confirmed adequate indicator reliability and supported the convergent validity of the measurement model.

Table 8: Construct Reliability and Convergent validity

Construct	Cronbach's Alpha	rho_A	Composite Reliability (CR)	Average Variance Extracted (AVE)
Innovativeness	0.773	0.776	0.846	0.524
Operational Efficiency	0.801	0.802	0.863	0.557

Source: *SmartPLS4.0*

The measurement model demonstrated robust internal consistency and convergent validity. As shown in Table 1, both constructs exceed the recommended thresholds for reliability: Cronbach's Alpha ($\alpha > 0.70$), rho underscoring A (> 0.70), and Composite Reliability (CR > 0.70). Specifically, Innovativeness ($\alpha = 0.773$, CR = 0.846) and Operational Efficiency ($\alpha = 0.801$, CR = 0.863) exhibit strong internal consistency. Furthermore, convergent validity was established as the Average Variance Extracted (AVE) for both constructs exceeded the 0.50 threshold (Innovativeness: AVE = 0.524; Operational Efficiency: AVE = 0.557), indicating that each construct explains more than half of the variance of its indicators.

Table 9: Test for Discriminant Validity using Fornell-Larcker Criterion

Construct	1	2
1. Innovativeness	0.724	
2. Operational Efficiency	0.664	0.746

Source: SmartPLS4.0

Discriminant validity was assessed using the Fornell–Larcker criterion. As shown in Table 10, the square root of the Average Variance Extracted (AVE) for each construct (bolded diagonal values) exceeds its highest correlation with any other construct (off-diagonal values). Specifically, the square root of AVE for Innovativeness (0.724) and Operational Efficiency (0.746) was greater than their inter-construct correlation (0.664). This confirms that the constructs are distinct from one another, thereby establishing discriminant validity.

Assessment of Structural Model - Test of Hypothesis

H0 Innovativeness has significant relationship with operational efficiency of SMEs in North Central Nigeria.

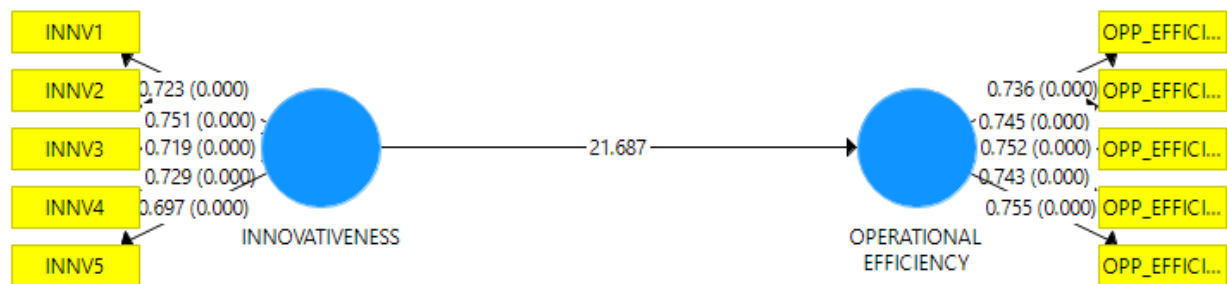


Fig. 2: Bootstrapping on size and Significance of the path relationship between Innovativeness and Operational Efficiency

The structural model depicts a direct positive relationship between Innovativeness and Operational Efficiency, with a path coefficient of $\beta = 0.664$ ($t = 21.687$, $p < 0.001$), indicating strong statistical significance and substantial predictive power. All outer loadings are statistically significant ($p < 0.001$) and exceeded the recommended threshold of 0.70, except INNV5 (0.697), which was retained due to its contribution to construct reliability and validity. The high t-statistic for the structural path confirms that Innovativeness was a robust predictor of Operational Efficiency in this sample.

Table 11: Structural Model: Test of Significance for Direct Relationships

	Original Sample	Sample Mean	Standard Deviation	T Statistic	P Values
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		(O)	(M)	(STDEV)	s (O/STD EV)	
Innovativeness	->	0.664	0.666	0.031	21.687	0.000
Operational Efficiency						

Source: SmartPLS4.0

The structural model results indicated a strong, positive, and statistically significant relationship between Innovativeness and Operational Efficiency. As shown in the table, the path coefficient ($\beta\beta$) is 0.664, indicated that a one-unit increase in Innovativeness leads to a 0.664 unit increase in Operational Efficiency. The relationship was highly significant, with a t-statistic of 21.687 and a p-value of < 0.001 (derived from 5,000 bootstrap subsamples). These results provided a robust empirical support for the hypothesis that Innovativeness positively influences Operational Efficiency.

Discussion of Findings

The results of the present study are consistent with the previous empirical results which have supported the importance of the entrepreneurial marketing strategies-innovativeness on operational efficiency of SMEs. The positive correlation between innovativeness and operation efficiency was strong and supported the findings of Ajer et al. (2023), which stated that innovation was one of the primary performance movers in agro-food SMEs in Uganda. The study found out that the high degree of innovation (80%) was also associated with higher productivity and customer-focused development, indicating that innovation and flexibility allow companies to react to changes in the market. Similarly, Voghagi (2026) and Gbenga (2024), the study recommended that multiple-strategic process innovation triggers operational output in a limited resource SMEs

Conclusion and Recommendation

The study found that innovativeness as an entrepreneurial marketing strategy specifically innovativeness has significant impact on the performance of the agro-allied SMEs in North Central Nigeria. The evidence shows how innovativeness enhances operating efficiency tremendously, underscoring the significance of innovative as a visionary strategies in a progressive business world. Rooted in the principles of Schumpeter's Theory of Innovation, the research establishes the importance of constant innovation and thoughtful and skilful operational efficient labour as critical instruments for development, sustainability, and competitiveness.

Based on the findings of this study, it is recommended that owners and managers of agro-allied SMEs in North Central Nigeria should institutionalize innovativeness by continuously investing in the development of new products, improving production processes, adopting appropriate technologies, and encouraging creative problem-solving within their enterprises. This is because the study established that innovativeness significantly enhances operational efficiency; therefore, sustained innovation will enable agro-allied SMEs to optimize resource utilization, minimize operational waste, improve productivity, and strengthen their overall competitiveness.

References

- Adim, C., & Bassey, U. (2022). The influence of entrepreneurial risk-taking propensity on sales growth of SMEs in Bayelsa State, Nigeria. *International Journal of Business & Entrepreneurship Research*, 13(3), 73-91.
- Ahmed, N. B (2021). Effect of Product Innovation on the Performance of SMES in Ilorin Metropolis. 3. 1-16.
- Ajer, B., Ngare, L., & Macharia, I. (2023). Drivers of innovation in the agro-food micro, small, and medium enterprises of Uganda. *Journal of Agribusiness in Developing and Emerging Economies*, 1(4), 15–30.
- Albert-Cromarias, A., Asselineau, A., & Blanchard, G. (2022). Retracted: Value creation, appropriation and destruction in coopetitive relationships among micro-firms.
- Ali Alied, A.A & Khalil, S.N (2024) The Effect of Entrepreneurial Orientation and Innovation towards Small, and Medium Enterprises (SMEs) Performance through Motivation. *International Journal of Academic Research In Business And Social Sciences*, 14(12)
- Alqahtani, N., & Usay, C. (2020). Entrepreneurial marketing and firm performance: Synthesis and conceptual development. *Journal of Business Research*, 113, 62–71.
- Amadasun, O. E., & Mutezo, A. T. (2025). Effect of entrepreneurial marketing on SMEs competitive performance in Lesotho. *The Southern African Journal of Entrepreneurship and Small Business Management*, 17(1), 889.
- Astuti, R. D., & Balqiah, T. E. (2019). Entrepreneurial marketing orientation of young SME owners in Indonesia. *International Journal of Entrepreneurial Venturing*, 12(4), 376–394.
- Astuti, R. D., & Balqiah, T. E. (2020). Entrepreneurial marketing orientation of young SME owners in Indonesia. *International Journal of Entrepreneurial Venturing*, 12(4), 376–394.
- Audretsch, D. B., Belistki, M., Calazza, R., & Phan, P. (2023). Collaboration strategies and SME innovation performance. *Journal of Business Research*, 164, 114018, 9–10.
- Creswell, J. D., & Lindsay, E. K. (2014). How does mindfulness training affect health? A mindfulness stress buffering account. *Current directions in psychological science*, 23(6), 401-407.
- Crick, J.M., Karami, M & Crick, D.(2021) The Impact of the Interaction Between an Entrepreneurial Marketing Orientation and Coopetition on Business Performance. *International Journal of Entrepreneurial Behaviour and Research*.
- Dalwai, T. & Salehi, M.(2021) Business Strategy, Intellectual Capital, Firm Performance, and Bankruptcy Risk: Evidence from Oman's Non-Financial Sector Companies. *Asian Rev Account*. 29(1), pp 115-145.
- Dansu, S.F, Olubusade, T.J & Shomuyiwa, A.B (2025) Risk-Taking and Survival of Small and Medium Scale Enterprises (SMEs) in Lagos State, Nigeria. *LASU Postgraduate School Journal*. 1(2)

- Denis Katur (2016) Strategic Entrepreneurship: Mediating the Entrepreneurial Orientation Performance Link. *Journal of Management Decision*, ISSN 0025-1747
- Eggers, F., Niemand, T., Kraus, S. & Breier, M. (2020) Developing a Scale for Entrepreneurial Marketing: Revealing its Inner Frame and Prediction of Performance. *Journal of Business Research*, 113(1), pp 72-82.
- Faroque, A. R., Mostafiz, M. I., Faruq, M. O., & Bashar, M. F. B. (2021). Revisiting entrepreneurial capabilities and export market orientation: a multi-scale investigation in an emerging economy. *International Journal of Emerging Markets*, 16(3), 556-579.
- Freixanet, J. & Renart, G. (2020) A capabilities perspective on the joint effects of internationalization time, speed, geographic scope and managers' competencies on SME survival. *Journal of World Business*, 55(6), 101110.
- GBenga, A. N. (2024). Business risk management ideology and entrepreneurial development of students in tertiary institutions in Southwestern, Nigeria. *Journal of Technology Management and Business*, 11(1), 32-48.
- Ghosh, S. & Sanyal, B. (2019). "Determinants of Operating Efficiency of Commercial Banks in India: Insights from Panel Regressions Model". *Emerald Publishing Limited*, 254-263.
- Joseph A. S. (1912). "Theory of Economic Development" (1912)
- Katur, D. (2016) Strategic Entrepreneurship: Mediating the Entrepreneurial Orientation Performance Link. *Journal of Management Decision*. ISSN 0025-1747
- Kiiru, D. K., Mukulu, E., & Ngatia, P. (2023). Innovativeness and performance: evidence from Kenyan SMEs. *European Journal of Business and Management Research*, 8(2), 113-119.
- Knight, F. H. (1924). Some fallacies in the interpretation of social cost. *The Quarterly Journal of Economics*, 38(4), 582-606.
- Lee, J., Kwon, H.B., Pati, N. (2019) Exploring the Relative Impact of R&D and Operational Efficiency on Performance: A Sequential Regression- Neutral Network Approach. *Expert Syst. Appl.*, 137, pp 420-431
- Lumpkin, G.T & Marvel, M.R (2017) Technological Entrepreneurs' Human Capital and its Effects on Innovation Radicalness. *Entrepreneurship Theory and Practice*, 31(6), 807-828
- Nguyen, Hoan, Thi Haong Mai Tran, Thi Hai Yen Nguyen, Duc Dinh Truong (2021) The Influence of Competitive Advantage on Financial Performance. A Case Study of SMEs In Vietnam. *The Journal of Asian Finance Economic and Business*. 8 (335-43)
- Nora Sadiku Dushi (2019) Entrepreneurial Marketing Paradigm-Why it is Important for Kosovar Entrepreneurs? Among SMEs in Oman. *Int Journal of Economic and Management Science*, 6(3)
- Nwankwo, C. A. & Kanyangale, M. I. (2022). Entrepreneurial marketing and a new integrative model: An evaluation of the survival of manufacturing small and medium enterprises. *Academy of Entrepreneurship Journal*, 28(1), 1-13.

- Sadiku-Dushi, N., Dana, L. P., & Ramadani, V. (2019). Entrepreneurial marketing dimensions and SMEs performance. *Journal of business research*, 100, 86-99.
- Samuel, F., Lucena Vaz-Curado & Anthony, M.(2019). The Concept of Entrepreneur of Schumpeter in Comparison to Kirzner. *MISES: Interdisciplinary Journal of Philosophy Law and Economics*, 7(3), pp, 613-642
- Santos, J. B., & Brito, L. A. L. (2012). Toward a subjective measurement model for firm performance. *BAR-Brazilian Administration Review*, 9, 95-117.
- Schulze Brock, P., Katsinis, A., Lagüera González, J., Di Bella, L., Odenthal, L., Hell, M., Lozar, B. and Secades Casino, B., *Annual Report on European SMEs 2024/2025, SME performance review*, Publications Office of the European Union, Luxembourg, 2025, <https://data.europa.eu/doi/10.2760/7714438>, JRC142263.
- Taro Yamane (1967): *Elementary sampling theory*. First Edition, Published by Prentice Hall, USA.
- Voghagi, U.M (2026) Process Innovation and Operational Performance of SMEs in Taraba State, Nigeria. *African Journal of Management and Business Research* 22(1),318-345
- Weerawardena, J., Salunke, S., Haigh, N. & Mort, G.S (2021) Business Model Innovation in Social Purpose Organizations: Conceptualizing Dual Social-Economic Value Creation. *Journal of Business Research*, 125(1), pp 762-771.
- Zekeri, A., Kowo, S. A., & Tunde-Arigbede, O. T. (2024). Efficiency of small business: the case of Nigeria. *Foreign trade: economics, finance, law*, 136(5), 110-126.