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PROCESS INNOVATION AND VENTURE PERFORMANCE OF SMALL AND MEDIUM-SCALE VENTURES IN SOUTH-SOUTH GEO-POLITICAL ZONE, NIGERIA

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ABSTRACT

This study examined the relationship between process innovation and organizational performance of small and medium-scale enterprises (SMEs) in the South-South Geo-political zone of Nigeria. Grounded in the Resource Based Theory (RBT), this research explored how process/technology innovation impacts financial, market, and operational performance. The study adopted a correlational research design, targeting a population of 2,223 registered food and beverage manufacturing SMEs. Using the Taro Yamane formula, a sample size of 339 SMEs was determined and selected through purposive sampling. Data collection was conducted via a structured questionnaire, with subsequent analysis involving descriptive statistics and Spearman Rank Correlation to test the hypotheses. The findings revealed significant positive relationships between process/technology innovation and financial performance ($r=0.602$, $p<0.05$), market performance ($r=0.479$, $p<0.05$), and operational performance ($r=0.633$, $p<0.05$) of SMEs. The study concluded that process innovation is a critical driver of enhanced performance in SMEs. Recommendations included investing in advanced technologies, continuous development of new products, and adopting innovative strategies to improve efficiency and market competitiveness.

Key words: Process innovation, venture performance, financial performance, market performance, operational performance

INTRODUCTION

A driving force for competitive scuffle in the present chaotic environment is innovation. Introducing new products and services are at the nucleus of economic growth and development. The ability to innovate has caused researchers to study activities leading to initiative advancement of individuals and organisations. Small and medium-sized enterprises (SMEs) furnish a strong increase to employment and economic growth specifically due to their innovative activities which becomes a main force of explaining competitive advantage and firm performance (Ussahawanitchakit, 2012). Accordingly, the values fashioned by innovations shows potential circumstances that uncovered new ways of doing things or new products and processes that add benefits to economic fortunes.

SMEs, world over have been found to provide jobs for about 75% of the workforce of any country. In periods of liberalization and privatization SMEs especially in emerging economics, has become vital economic tools and bedding seeds for entrepreneurship development and indigenous technology that create employment (Allocca *et al.,* 2016). and are better positioned over bigger firms in their capacity to be innovative (Salavou *et al.*, 2014). However, there are barriers to the activities of innovation in SMEs which according to (Hussien, 2010). include a lack in capital investment, infrastructure, education and training systems, encumber regulations, and in general deficiencies in know-how and skills acquisition. Other barriers include constrained managerial capabilities, difficulty in utilizing technology which results in low productivity among others. Consequently, investing in innovative behaviours strengthens knowledge of employees and individuals that drive resilience of the organizations to create new products, processes, and new behaviour of working that generates improve competitiveness and achievement of necessary goals to shape performance.

Innovation (in business) means novelty, new things being done, or old things being done in new ways to increase the performance in terms of sales, profitability and market shares in an organization. It is an application of technological, institutional, human resources and discoveries of productive processes, resulting in new practices, products, markets, institutions and organizations that need organizational improvement or performance in terms of sales, profitability and market shares. Innovation in SMEs can be a product, process or marketing innovation adopted in order to increase performance of enterprises in terms of sales volume or otherwise. Small and medium enterprises are considered as the machine of economic growth that drives and promotes equitable development of nations, which is achieved by adopting innovation principles. The role of Small and Medium Enterprises in the economic and social development of countries is well established when the concept of innovation is applied on the SMEs, and as a result, performance will be improving substantially. The sector is a nursery of entrepreneurship, often motivated by innovation (Twaliwi & Isaac, 2017).

Existing literature has described innovation differently. For example (Robert, & Tucker, 2018). affirmed there are three types of innovation, product, process and strategy or business model innovation. (Schumpeter, 1934). explains innovation to include five types: new products, new methods of production, new sources of supply, the exploitation of new markets, and new ways to organize business. For (Drucker, 2015). innovation is seen as a process of equipping in new, improved capabilities or increased utility. Subramanian and Nilakanta (2016) categorized organisational innovation into two (a) technological innovation which include product, service and process; and (b) administrative innovation that includes organisational arrangement, administrative process and program.

SMEs in Nigeria have not frequently applied the concept of innovation in their businesses. There are less new products in the market, less adoption of marketing innovation strategies and poor business innovation processes. As a result, these enterprises may not likely experience growing sales volume which in turn means poor performance. The market is full of old and previously existing products which the consumers already have knowledge about their quality. However, although SMEs in Nigeria do not adopt innovation (product, process, marketing or organizational) fully and frequently, this does not mean there is a complete absence of innovation. Though in different degrees, all these innovations are present in these SMEs, and hence, their performance effect needs to be examined. The importance of being innovative cannot be overemphasized, thus, (Vankessel *et al.*, 2014) states, "Innovation has become a mantra: Innovate or Die. A company cannot outgrow its competitors unless it can out-innovate them. Surely everyone knows that true corporate growth springs from innovation.

Process innovation is a type of process development which is the development of a firm's manufacturing processes, and has been defined as the creation and implementation of new concepts and methods in SMES's (Shahzad *et al.*, 2012). This involves a number of heterogeneous activities such as introduction of equipment, new management practices, and changes in the production process (Tejada & Moreno, 2013). Performing a process innovation of a larger scale often causes the involvement of both organizational and technological changes. To complete such a task, Kupper, (2012). stresses the high importance of having a formal work method.

Most SMEs operate in turbulent environments, facing rapid changes in information technology, market uncertainties, shortened product life cycles and fierce competition. In such environments, process innovation becomes a fundamental requirement to achieve sustainability, survival and growth (Walker & Avellaneda, 2019). Organizations take process innovation very seriously because it stimulates competitive advantage and firms that continually innovate often perform highly in the competitive markets. Agile organisations innovate in terms of products to match the consumers' tastes. Through innovation, organizations also introduce latest technologies for better processes and methods (Chaney & Devinney, 2012). Moreover, Walker and Avellaneda (2019) submit that multiple benefits are harvested by stakeholders and organisations when new methods and technologies are adopted. Specifically. Golipour *et al.*, (2011) assert that organizational process innovation promotes adaptation among firms and adds value to the firm in changing business contexts.

Organizational performance can be strategically measured among several dimensions through marketing capability and strategic planning capability (Yan *et al.*, 2014). According to Yan *et al.*, (2014), marketing capability is a firm's ability to publicise and sell products on the basis of understanding customer needs, compensation situation, costs and benefits and the acceptance of innovation. Strategic planning capability on the other hand is the company's ability to identify internal strengths and weaknesses, and external opportunities and threats, formulate plans in accordance with corporate vision and mission and acclimatize the plan to implementation.

Organizational performance is the benchmark of measuring the success and progress of any organization (Sarminah, 2013). As innovation enhances the overall performance and competitiveness of the business, its effect can be probed from different angles. Some of them is to evaluate the financial performance, market performance and operational performance of the enterprise. Every organizational success is made possible by the efforts of its workforce. Measuring organizational performance is a vital part of monitoring an organization's progress

(Maina & Onsongo, 2013). It comprises measuring the actual performance outcomes of results of an organization against its intended goals. Organizational performance outcomes in any successful organization have resulted to firm's portability, increase in shareholder base, as well as diversification into different areas of related businesses (Okpara, & Pamela, 2018). Olaniyan and Laing, (2018), posit that if the employees in an organization are to perform their duties and make meaningful contributions to the success of the organizational goals, they need to acquire the relevant skills and knowledge through training.

More so, the relationship between innovation and performance of SMEs has received scanty literature especially in developing countries like Nigeria. Hence, an initiative has been taken to examine the relationship between corporate innovativeness and performance in the SMEs in Rivers State. This study therefore filled the identified gap by empirically examining the relationship between process innovation and organizational performance of SMEs in Rivers State

Statement of the Problem

Small and Medium Enterprises (SMEs) are recognised as agents of economic growth and employment generation in both developed and developing nations. (Bayarcelik *et al.*, 2014). observed that SMEs significantly contribute to innovations which support the nations' economic development across the globe. (OECD, 2018). further posited that innovation is crucial in determining productivity and long-term growth. In the same vein, (Small and Medium Enterprise Development Agency of Nigeria, 2017). emphasized the transformational role of SMEs in industrializing both developed and developing economies across the globe. They significantly contribute toward advancing innovations in products and process. In fact, (Small and Medium Enterprise Development Agency of Nigeria, 2017), realized that SMEs "…present a vital platform for boosting technical, technological and entrepreneurial capacities amongst critical segments of the populace". Micro, small and medium enterprises (MSMEs) employment account for nearly 85% of jobs in the industrial sector, and contribute 49.78% of GDP in Nigeria (Small and Medium Enterprise Development Agency of Nigeria, 2017).

Studies on innovations and SME performance have been conducted largely in developed countries (Otero-Neira *et al.*, 2019). Notwithstanding these studies, the subject matter is largely unexplored in developing nations such as Nigeria. However, SMEs are of critical importance to the Nigerian economy. Its size is about 73,000 and employs nearly 3 million people. However, 63.9% of SMEs are uninsured, nearly two- third (65%) have no business plan, about 92% access credit from commercial banks, and three-quarter of SMEs have less than N10 million start-up capital (Kale, 2019). This statistic implies that for SME firm to survive and perform impressively, it has to be innovative. Therefore, the study aims to examine the effect of innovation on SME firm's performance in Nigeria.

Aim and Objectives of the Study

The aim of this study was to investigate the relationship between process innovation and venture performance of small and medium-scale ventures in South-South Geo-political zone, Nigeria. In specific terms, the study sought to:

1. determine the relationship between process/technology innovation and financial performance of small and medium-scale ventures South-South Geo-political zone, Nigeria.
2. ascertain the relationship between process/technology innovation and market performance of small and medium-scale ventures South-South Geo-political zone, Nigeria.
3. examine the relationship between process/technology innovation and operational performance of small and medium-scale ventures South-South Geo-political zone, Nigeria.

Research questions

The following research questions will guide this study:

1. What is the relationship between process/technology innovation and financial performance of small and medium-scale ventures South-South Geo-political zone, Nigeria?
2. What is the relationship between process/technology innovation and market performance of small and medium-scale ventures South-South Geo-political zone, Nigeria?
3. What is the relationship between process/technology innovation and operational performance of small and medium-scale ventures South-South Geo-political zone, Nigeria?

Hypotheses

The following hypotheses will guide this study

Ho_1: There is no significant relationship between process/technology innovation and financial performance of small and medium-scale ventures South-South Geo-political zone, Nigeria.

Ho_2: There is no significant relationship between process/technology innovation and market performance of small and medium-scale ventures South-South Geo-political zone, Nigeria.

Ho_3: There is no significant relationship between process/technology innovation and operational performance of small and medium-scale ventures South-South Geo-political zone, Nigeria.

LITERATURE REVIEW

Concept of Process/Technology Innovation

Baer and Frese (2013) describe process innovation as "a deliberate and new organizational attempts to change production and service processes". It is "the implementation of new or significantly improved methods for production or delivery, to include significant changes in techniques, equipment, and/or software" (Bellon, 2014). Process innovations tend to decrease unit costs of production or delivery, increase quality, or produce or deliver new or significantly improved products (Bellon, 2014), some innovation processes change the entire order of things, making obsolete the old ways and perhaps sending entire businesses into the refuse dump of history.

Process innovation concerns the integration and change of management procedures and methods. This type is a non-physical innovation that aims to transform and reorganize management ways and methods, and the knowledge gained in order to make the organization's and individuals' behavior more positive and effective (Oukil, 2019).

Process innovation is interested in developing modern management systems and making transformations in the distribution of activities between individuals and in the combination of functions within the organization; this may require non-physical investments in training by employing qualified individuals in communication in order to strengthen the principle competencies in the organization, as well as innovations in management where managers often find difficulties to apply their method of work. According to specialists in quality, 85% of the problems that occur in organizations result from mismanagement. Thus, the improvements taking that may be small or big; in the case of small change, we deal with micro, slight or young innovation that makes simple and slight on products or production methods. But, in the case of radical change, we deal with powerful or radical innovation that radically or fundamentally

changes products or production methods, and make conversion in markets or radically change the conditions of competition between institutions. Thus, the degree of innovation leads us to distinguish between: Micro or slight innovation: Micro-innovation introduces "changes or progressive improvements to the elements or references constituting the product and its cost; this type does not require new in-depth scientific knowledge" (Broustail & Fréry, 2012).

Concept of Venture Performance

Venture performance is a composite assessment of how well an organization executes on its most important parameters, typically financial, market and shareholder performance. Performance is an extensively used concept in many areas. Usually, performance is a measure of how well a mechanism or a process accomplish its objective. Performance is claimed to be a multidimensional and complex construct that has been measured using an array of indicators (Lumpkin & Dess, 2016). In venture point of view, performance means how well the organization is managed and the value the organization delivers for customers and other stakeholders (Wu & Zhao, 2010). There is no dispute that one of the basic purposes of both entrepreneurship and strategic management theory and research is the enhancement of venture performance (Mthanti, 2012). Venkatrarnan and Rarnanujarn (2017), empirically investigated the degree of concurrence across methods of measuring business economic performance and in so doing, established that sales growth, profit growth, and profitability were discriminate measures of different dimensions of business economic performance.

Kraus (2012), noted that performance is regularly measured in one or a combination of the following means: perceived financial, perceived non-financial and archival financial. Several studies (Dess, 2017), have used perceived performance indicators to assess firm performance. The items that were used to form the performance indicators typically were based on manager's subjective views about firm's profitability, growth, market share, in relative to its most important competitors. The overall performance measure is typically formed by merging several items measuring the different aspects of performance into one performance score or index (Lechner & Gudmundsson, 2012).

The reasons for the use of perceived performance measures are commonly the lack of publicly available archival performance figures on SMEs (Kraus, 2012), or the fear of losing respondents if such accurate performance figures are requested in questionnaires as privately owned firms are often reluctant to disclose such financial information (Messersrnith & Wales, 2013). This kind of subjective performance data may be prone to biases or inaccuracy as it relies on key informants, typically CEO's, ability and willingness to report and rate firm's objective performance accurately with subjective proxies (Kraus, 2012). Many studies on the other hand have shown that subjective and objective performance measures are typically strongly positively correlated (Starn & Elfring; 2016), and hence support the validity of the subjective performance measures.

Measures of Venture Performance

Financial Performance

The concept of performance and financial performance is a difficult concept, in terms of both definition and measurement. It is one of the most researched concepts in management as it has to do with organizational wellbeing. According to Tudose (2012) performance can be explored from two points of view financial and organizational (the two being interconnected); a company's performance can be measured based on variables that involve productivity, returns, growth or even customer satisfaction. A firm remains in operation because it is expected to make profit (financial performance). Thus, the excess of income generated over expenses incurred in a

given period could be construed as financial performance (Sanni, 2016). Corporate financial performance has long been sought for by managers as they device strategic plans to achieve this goal. Performance is the function of the ability of a venture to gain and manage the resources in several different ways to develop competitive advantage (Chen & Wong, 2014). Niculescu and Lavalette (2019) viewed performance as a state of competitiveness of the economic entity, reached by a level of efficiency and productivity that assures a sustainable presence on the market.

Market Performance

Firm performance is how well a firm can use its assets as a primary mode of business to generate revenue and profits (Samina *et al.*, 2013). Marketing professionals are under ever-increasing pressure to justify their firms' expenditure on marketing. Researchers in marketing have cautioned that the inability of marketing to demonstrate its contribution to firm performance has weakened its standing within firms (Ambler *et al.*, 2018). In order to save marketing from this crisis of confidence, there have been a number of significant calls for more research into the measurement of marketing performance. Rust *et al.* (2014), stated powerfully that: "The effective dissemination of new methods of assessing marketing productivity to the business community will be a major step toward raising marketing's vitality in the firm and, more importantly, toward raising the performance of the firm itself". Therefore, a better understanding of the assessment of marketing performance could help marketing practitioners to quantify their contribution to the financial performance of firms. The performance of a firm can be measured through sales revenue, market share, profitability, and market value.

Operational Performance

Operational performance refers to the measurable aspects of the outcomes of an organization's processes, such as reliability, production cycle time, and inventory turns. Operational performance in turn affects business performance measures such as market share and customer satisfaction (Voss et al., 2017). Performance measurement systems were developed as a means of monitoring and maintaining organizational control, which is the process of ensuring that an organization aims at strategies that lead to the achievement of its overall goals and objectives. Performance measures, the key tools for performance measurement systems, play a vital role in every organization as they are often viewed as forward- looking indicators that assist management to predict a company's economic performance and many times reveal the need for possible changes in operations (Nanni, et al., 2010)

Operational performance determines organizational performance. The operations in an organization should be efficient and effective in order to achieve organizational goals. Effectiveness is the expanse to which customers" needs are fulfilled whereas efficiency is a measure of economical the organizations resources are utilized. In order to enable the accurate assessment and evaluation operational performance, the correct measurement approaches must be designed, implemented and well maintained by the users of the particular process. They may identify necessity of measuring the processes" effectiveness, its efficiency, its quality impact and overall productivity (Oakland, 2010). A systematic performance measurement system should be in place in order to achieve operational excellence in the manufacturing industry.

Theoretical Framework

Resource Based Theory (RBT)

The supporters of this view argue that organizations should look inside the company to find the sources of competitive advantage instead of looking at competitive environment for it. The resource-based theory (RBT) emerged as a complement to Porter's theory of competitive advantage (Barney, 2012). Initially, Wernerfelt (1984) developed a theory of competitive advantage based on the resources any organization develops or acquires to implement product market strategy. Wernerfelt's (1984) basic contribution was recognizing that organization specific resources along with competition among organizations based on their resources can be essential for organizations to gain advantages in implementing product market strategies (Barney, 2012). Resources refer to all components made available by an organization to performers of innovative work tasks (Amabile, 2017).

Barney (2012) defined a competitive advantage as a strategy that is based on resources that are valuable (2011). Despite the advantages offered by the RBT to practitioners and scholars alike, the theory has been under attack by opponents claiming that there is an over enthusiasm for what the theory can deliver, especially concerning a lack of criteria for generalization and definitional ailments. The Resource Based Theory (RBT) may be self-verifying but this reason is circular and invalid operationally (Priem & Butler, 2011). Priem and Butler (2011), state that Barney's perspective does not constitute the theory of the organization because the conditions of generalizations of empirical content and are not met (Rudner, 1966). Different resource configurations can generate the same value for organizations and thus would not be at a competitive advantage; the part played by the product markets is underdeveloped, limited focus on capabilities, and retrospective causality issues, but the causality is not always clear.

Empirical Review

Udegbe (2013) designed a study to investigate the relationship between product development by innovation and organizational performance. This was done because, in today's global market, businesses are faced with intensive competition and in order to obtain a sustainable competitive advantage, they have to adopt processes and system for development of their new products, as well as the improvement of the existing products through innovation.The findings show that the impact of product development on organizational performance was higher in Nigeria when consumers perceive product innovation as stronger, more favorable and more unique. Creativity/quality of the innovation process exert a positive influence on product development and organizational performance. To literature, the study has supported previous studies on product development and performance especially in developing economies such as Nigeria, Malaysia, Ghana, and among others. Therefore, it was recommended that creative/quality innovations should be maintained continuously to develop appropriate product continually.

Alhadidand (2014) studied the impact of green innovation (green product innovation, green Cognitive operation innovation) on organizational performance. The study was applied on Jordanian industrial companies, specifically on Nuqul Group in Jordan. The most important finding of the study is having impact of moral green innovation in organizational performance, and also there is impact of the environmental management behavior as a moderator variable between green innovation and performance organizational. This study confirms the presence impact of green innovation in organizational performance, and this confirms that the practices of

green economic and green management have significant benefits at the level of the national economy and achieve significant savings at the level of the Industrial sector.

Adeyeye (2014) studied the impact of radical innovation on organizational performance. The objectives of the study were to determine relationship between strategic planning and marketing planning capabilities on organizational performance in the manufacturing industry. The findings from the study revealed that strategic planning and marketing capability independently and jointly influence organizational performance. Also, there is positive interaction between performance variables (i.e. resources availability, staff quality, productivity, Market share growth, financial strength, public image and good will). Based on the finding, it was recommended that there is the need for organizations to be innovative technologically to be competitive in the market. And companies should train their employee for better efficiency and effectiveness.

Lim *et al.*, (2010) studied the effect of innovation on performance of construction firms using statistical data across 18 organizations for Economic Cooperation and Development (OECD) countries and expert interviews in Singapore. They discovered that due to the fact that construction projects are awarded by clients based on lowest cost, innovation appears to be a non-feasible competitive strategy. However, their study revealed that construction firms can develop their competitive advantage through manipulating innovations that consumers are willing to pay for and innovations that would reduce construction costs.

Another study by Kassimu *et al.*, (2020), assessed the influence of innovation orientation dimensions on the performance of manufacturing small- and medium-sized enterprises (SMEs) in Ghana. he result showed that market innovation significantly predicted SMEs' performance. Conversely, non-significant positive nexus was established between process innovation and SMEs' performance as well as product innovation and SMEs' performance. Based on the outcome, the stakeholders in the SME sector should aim at improving their market, products and process innovations. Despite the importance attached to the employment of innovation in the SME sector by scholars in the extant literature, studies involving dimensions of innovation orientation on SMEs' performance were not much seen in literature. This study enriched literature by determining the relationships between the innovation orientation dimensions and SMEs' performance.

Methodology

The study adopted a correlational research design. The population of this study consisted of all the registered food and beverage manufacturing small and medium-scale enterprises in South-South Nigeria. According to 2017 National Survey conducted jointly by Small and Medium Enterprises Development Agency of Nigeria (SMEDAN) and National Bureau of Statistics (NBS), there are 2,223 food and beverage manufacturing small and medium-scale enterprises in the South-South Geopolitical Zone of Nigeria. This represents 23.4% of the 9,502 registered small and medium-scale enterprises in the South-South Zone. The 2,223 registered food and beverage manufacturing SMEs are spread across the six (6) states in the South-South Zone. The six (6) states in the South-South Zone include: Akwa Ibom State, Bayelsa State, Cross River State, Delta State Edo State and Rivers State. The unit of analysis consisted of entrepreneurs (owners/operators) of the registered food and beverage manufacturing SMEs in the South-South Zone. The population distribution is shown in table 3.1 below: The sample size was determined using the Taro Yamene's formula as shown below:

formula. The formula is given by;

$$n = \frac{N}{1 + N(e)^2}$$
$$= 339$$

This study used purposive sampling technique on all entrepreneurs of small and medium-scale enterprises in South-South Nigeria. The sources of data for the study were from both primary and secondary sources. A primary source provided direct or first-hand evidence about the research objectives. The primary source of data for the study was from structured questionnaire designed by the researcher while the secondary source described, summarized, or discussed information or details originally presented in another source; meaning the researcher did not participate in the study. The instrument for data collection in this study was a questionnaire. To validate the instrument, the face and content validity was determined by the expert judgment of the researcher's supervisor and two other experts in the field of Measurement and Evaluation, Ignatius Ajuru University of Education. The suggestions in regards to the scope, comprehensive, face and logical validity was used to draw the final instrument. Test-retest method was adopted to establish the reliability of the instrument. The instrument was administered on ten (10) respondents who were not included in the sample size used for the study; after two weeks, the same instrument was re-administered to the same respondents. The first and second scores were correlated using the Cronbach Alpha coefficient to determine the reliability of the instrument. The result for the items gave 0.95. The entire construct falls within an acceptable range for a reliable research instrument of 0.70 which is the standard value.

The data collected for the study were analysed using descriptive statistics and Spearman rank Correlation. The hypotheses will be tested using the Spearman rank Correlation at 0.05 significant level. The rule for acceptance or rejection of the hypotheses is given below;

Decision: if sig = $p > 0.05$ the hypothesis is rejected

If sig = $p \leq 0.05$ the hypothesis is accepted.

$$r_s = 1 - \frac{6\sum d^2}{n(n^2 - 1)}$$

Data Presentation, Analysis, Results and Discussion of Findings

Data Presentation

Table 4.1: Questionnaire Response Pattern

Number administered	Number returned	Number used	Percentage used
339	302	302	89.1%

Source: Field Survey (2022)

The table above indicates that out of 339 questionnaires that were administered to the respondents, 302 were returned and 302 pieces of the survey were adequately filled and were utilized for the analysis representing 89.1% of the sample size.

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Demographic Analysis

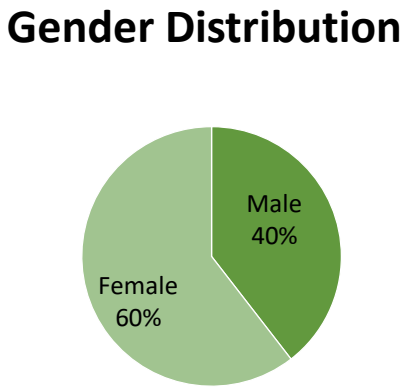

Figure 1: Pie – Chart of Gender Distributions.
Source: SPSS Output, 2022

The pie chart in figure 1 above represents the gender distribution of respondents of small and medium-scale ventures in South-South Geo-political zone, Nigeria. This diagram is represented in the SPSS table below:

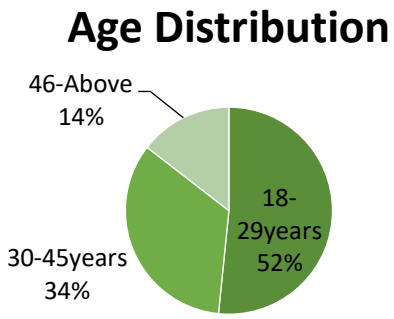

Figure 2: Pie – Chart of Age Distributions.
Source: SPSS Output, 2022

The pie chart in figure 2 above represents the age distribution of respondents among small and medium-scale ventures in South-South Geo-political zone, Nigeria. This diagram is represented in the SPSS table shown below.

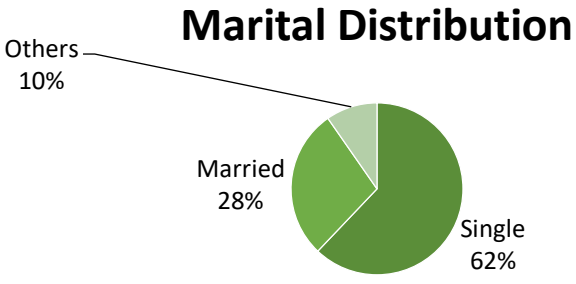

Figure 3: Pie – Chart of Marital Distribution.
Source: SPSS Output, 2022

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Figure 3 above is a pie chart representing marital status of respondents in the understudied small and medium-scale ventures in South-South Geo-political zone, Nigeria. The pie chart above is represented in the SPSS table shown below.

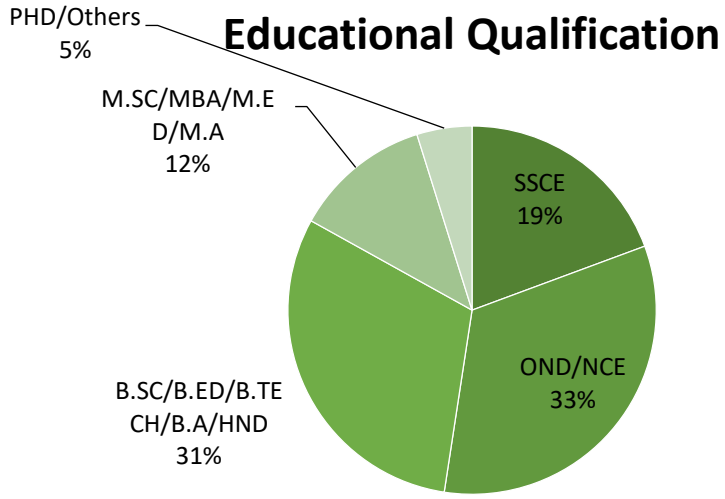

Figure 4: Pie – Chart of Educational Qualification Distribution.
Source: SPSS Output, 2022

The pie chart in figure 4 above represents educational qualification of respondents in the understudied small and medium-scale ventures in South-South Geo-political zone, Nigeria. The pie chart above is represented in the SPSS table shown below.

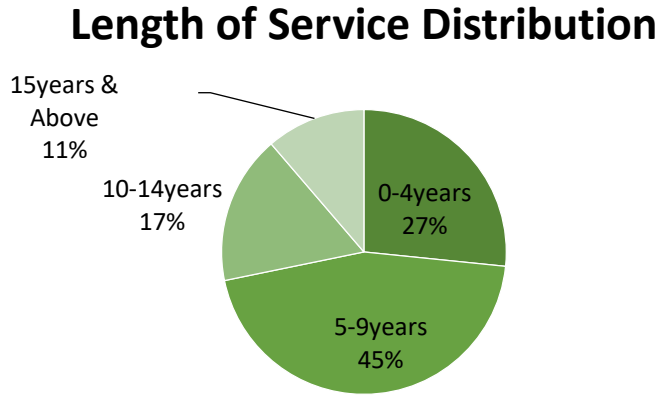

Figure 5: Pie – Chart of Length of Service Distribution.
Source: SPSS Output, 2022

The pie chart in figure 5 above represents number of years respondents have stayed and worked for the understudied small and medium-scale ventures in South-South Geo-political zone, Nigeria. The pie chart above is represented in the SPSS table shown below:

Univariate Analysis

Table 6: Items and Scores on Process/Technology Innovation

S/N	Items	SA 4	A 3	D 2	SD 1	TOTAL
1.	Our products are in line with regulatory standards	122	80	39	61	302
2.	We focus most on knowing the customer well to provide his/her needs instantly.	134	72	51	45	302
3.	My organization improvise on new methods when we cannot solve a problem using conventional methods.	96	90	63	53	302
4.	New technologies in the organization enhance customization of products to meet the needs of our clients and stakeholders.	96	88	71	47	302
5	Performance measurement are calibrated with these parameters which include but not limited to: percentage of revenue, sales growth, and profit	122	80	39	61	302

Source: Fieldwork, 2022

Table 6 above shows the number of responses recorded in each of the response options. For instance, on measurement item 2, respondents were required to indicate they focus most on knowing the customer well to provide his/her needs instantly. Majority (134) of the respondent strongly agreed to it, 72 respondents agreed to it, 51 respondents disagreed to it, while 45 respondents strongly disagreed to it. This response shows that management of small and medium-scale ventures in South-South Geo-political zone, Nigeria give priority to process/technology innovation. The responses are summarized in the SPSS table shows below:

Table 7: Items and Scores on Financial Performance

S/N	Items	SA 4	A 3	D 2	SD 1	TOTAL
1.	Our organization adopts new product and service innovation practices that will help to stimulate our profitability.	152	48	49	53	302
2.	My organization utilizes new technologies in her operations to increase liquidity in our firm	98	74	73	57	302
3.	Our organizations adopt standard procedure for operations that increases profitability	96	72	67	67	302
4.	Product innovations in general is responsible for the increase in our turn-over rate	190	50	39	23	302
5.	By focusing on meeting our customer needs, our organization hake been able to enhance financial performance	94	78	71	59	302

Source: Fieldwork, 2022

Table 7 above shows the number of responses recorded in each of the response options. For instance, on measurement item 1, respondents were required to indicate their view their

organization adopts new product and service innovation practices that will help to stimulate our profitability. Majority (152) of the respondent strongly agreed to it, 48 respondents agreed to it, 49 respondents disagreed to it, while 53 respondents strongly disagreed to it. This response shows that employees of small and medium-scale ventures in South-South Geo-political zone, Nigeria consent that innovation enhances of organizational innovation. The responses are summarized in the SPSS table shows below:

Table 8: Items and Scores on Market Performance

S/N	Items	SA 4	A 3	D 2	SD 1	TOTAL
1.	Product innovations in general is responsible for the improvement in our sales growth	114	68	67	53	302
2.	My organization utilizes new technologies in her operations to enhance customer loyalty	40	74	73	115	302
3.	Our organizations adopt standard procedure for operations so as to increase our market share	148	72	51	31	302
4.	Our organization adopts new product and service innovation practices to stimulate our sales growth	114	68	67	53	302
5.	By focusing on meeting our customer needs, our organization have been able to enhance customer loyalty	148	72	51	31	302

Source: Fieldwork, 2022

Table 8 above shows the number of responses recorded in each of the response options. For instance, on measurement item 1, respondents were required to indicate their view if their product innovations in general is responsible for the improvement in our sales growth. Majority (114) of the respondent strongly agreed to it, 68 respondents agreed to it, 67 respondents disagreed to it, while 53 respondents strongly disagreed to it. This response shows that employees accept that organizational innovation influence organizational performance of small and medium-scale ventures in South-South Geo-political zone, Nigeria. The responses are summarized in the SPSS table shows below:

Table 9: Items and Scores on Operational Performance

S/N	Items	SA 4	A 3	D 2	SD 1	TOTAL
1.	We implement new product and service innovation practices in our organization to improve our product quality	88	80	67	67	302
2.	We utilize new technologies in our operations to increase product and service efficiency	94	64	73	71	302
3.	We adopt standard procedure for operations to increase our general operation efficiency	124	80	57	41	302
4.	Product innovations in general is responsible for the increase in our product availability	96	82	49	75	302
5.	Focusing on our product quality has made it possible for us to meet our customer needs.	124	80	57	41	302

Source: Fieldwork, 2022

Table 9 above shows the number of responses recorded in each of the response options. For instance, on measurement item 1, respondents were required to indicate their view if their organization implement new product and service innovation practices in our organization to improve our product quality. Majority (88) of the respondent strongly agreed to it, 80 respondents agreed to it, 67 respondents disagreed to it, while 67 respondents strongly disagreed to it. This response shows that the respondents agreed that operational performance influence organizational performance of small and medium-scale ventures in South-South Geo-political zone, Nigeria. The responses are summarized in the SPSS table shows below:

Table 10: Descriptive Statistics on Operational Performance

	N	Min.	Max.	Mean	Std. Deviation
OP 1	302	1.00	4.00	2.6451	1.2023
OP 2	302	1.00	4.00	2.6129	1.1876

Bivariate Analysis

The hypotheses tested were in five categories involving the bivariate analysis; those for process/technology innovation, product/service innovation, and organizational innovation as they have their alternate forms with focus to their influence on venture performance. We set out confidence interval at 0.05 level of significance to test the statistical significance of this study**.**

Table 11: Description of the Degree of Association between Variables

Correlation Coefficient (r)	Description/Interpretation
± 0.80 – 1.0	Very Strong
± 0.60 – 0.79	Strong
± 0.40 – 0.59	Moderate
± 0.20 – 0.39	Weak
± 0.00 – 0.19	Very Weak

The positive (+) sign in the value of r indicates a direct/positive relationship while negative (-) sign in value of r indicates an indirect/negative or inverse relationship. Therefore, the sign of the r value explains the direction of association or nature of relationship between the variables.

Decision Rule

Decision: If sig = p > 0.05 the hypothesis is rejected

If sig = p ≤ 0. 05 the hypothesis is accepted

Process/Technology Innovation and Venture Performance

Ho_1: There is no significant relationship between process/technology innovation and financial performance of small and medium-scale ventures South-South Geo-political zone, Nigeria.

Ho_2: There is no significant relationship between process/technology innovation and market performance of small and medium-scale ventures South-South Geo-political zone, Nigeria.

Ho_3: There is no significant relationship between process/technology innovation and operational performance of small and medium-scale ventures South-South Geo-political zone, Nigeria.

Table 12: Relationship between Process/Technology Innovation and Venture Performance

			Process/Technology Innovation	Financial Performance	Market Performance	Operational Performance
Spearman's rho	Process/technology innovation	Correlation Coefficient	1.000	.602**	.479**	.633**
		Sig. (2-tailed)	.000	.000	.000	.000
		N	302	302	302	302
	Financial Performance	Correlation Coefficient	.602**	1.000	.572**	.713**
		Sig. (2-tailed)	.000	.000	.000	.000
		N	302	302	302	302
	Market Performance	Correlation Coefficient	.479**	.572**	1.000	.639**
		Sig. (2-tailed)	.000	.000	.000	.000
		N	302	302	302	302
	Operational Performance	Correlation Coefficient	.633**	.713**	.639**	1.000
		Sig. (2-tailed)	.000	.000	.000	.000
		N	302	302	302	302

**. Correlation is significant at the 0.05 level (2-tailed).

Source: SPSS Output, 2022

Column two of table 13 above shows r value of 0.602 at a significance level of 0.00 which is less than the chosen alpha level of 0.05 for the hypothesis relating process/technology innovation on financial performance. Since the level of significance is not above the alpha degree of 0.05, the null hypothesis (Ho1) which states that there is no significant relationship between process/technology innovation on financial performance of small and medium-scale ventures South-South Geo-political zone, Nigeria is rejected and the alternate hypothesis accepted. This suggests that there is a exist a strong relationship between process/technology innovation on financial performance of small and medium-scale ventures South-South Geo-political zone, Nigeria.

Column three of table 13 above shows r value of 0.479 at a significance level of 0.00 which is less than the chosen alpha level of 0.05 for the hypothesis relating process/technology innovation on market performance. Since the level of significance is not above the alpha degree of 0.05, the null hypothesis (Ho1) which states that there is no significant relationship between process/technology innovation on market performance of small and medium-scale ventures South-South Geo-political zone, Nigeria is rejected and the alternate hypothesis accepted. This suggests that there is a exist a strong relationship between process/technology innovation on market performance of small and medium-scale ventures South-South Geo-political zone, Nigeria.

Column four of table 13 above shows r value of 0.633 at a significance level of 0.00 which is less than the chosen alpha level of 0.05 for the hypothesis relating process/technology innovation on operational performance. Since the level of significance is not above the alpha degree of 0.05, the null hypothesis (Ho1) which states that there is no significant relationship between in

process/technology innovation on operational performance of small and medium-scale ventures South-South Geo-political zone, Nigeria is rejected and the alternate hypothesis accepted. This suggests that there is a exist a strong relationship between process/technology innovation on operational performance of small and medium-scale ventures South-South Geo-political zone, Nigeria.

Table 14: Summary of Findings

Predictor Variable	Criterion Variable	Ho	r value	Sig.	Decision
Process/Technology Innovation	Financial Performance	Ho_1	.602	P=0.00<0.05	Rejected
	Market Performance	Ho_2	.479	P=0.00<0.05	Rejected
	Operational Performance	Ho_3	.633	P=0.00<0.05	Rejected

Source: Desk Research, 2022.

Discussion of Findings

To determine the relationship between process/technology innovation and financial performance of small and medium-scale ventures South-South Geo-political zone, Nigeria:

The findings of this study revealed that there is significant relationship between process/technology innovation and financial performance of small and medium-scale ventures South-South Geo-political zone, Nigeria (R =0.602, P = 0.000 < 0.05). The findings of this investigation are in congruence with the previous findings of Adeyeye (2014) who studied the impact of radical innovation on organizational performance. The objectives of the study were to determine relationship between strategic planning and marketing planning capabilities on organizational performance in the manufacturing industry. The findings from the study revealed that strategic planning and marketing capability independently and jointly influence organizational performance. Also, there is positive interaction between performance variables (i.e. resources availability, staff quality, productivity, Market share growth, financial strength, public image and good will). Terziovski (2010) studied the innovation practice and its effect on performance of Australian SMEs. Drawing data from a sample of 600 SMEs in the manufacturing sector, the study found that innovation strategy is a key driver to performance of SMEs, which do not appear implement innovation culture in a strategic and structured manner. Similarly, Abdella et al (2018) conducted a study on process innovation and venture performance in Ethiopia: the moderating role of business sector and enterprise location. The finding of the study indicates that process innovation positively influences ventures performance, but it will determine more when enterprises are established in city areas and involved in the industry sector.

To ascertain the relationship between process/technology innovation and market performance of small and medium-scale ventures South-South Geo-political zone, Nigeria:

The findings of this study revealed that there is significant relationship between process/technology innovation and market performance of small and medium-scale ventures South-South Geo-political zone, Nigeria (R =0.479, P = 0.000 < 0.05). The findings are consistent with the previous findings of Jose-Luis *et al.*, (2014), who conducted a study on innovation as a growth strategy for SMEs, enriching and complementing the well-researched debate about product innovation. The results show that process innovation strategy is mainly shaped by the acquisition of embodied knowledge, which acts as a key mechanism for

countering firms' weak internal capabilities. As process innovation is mainly production oriented, performance consequences are measured using the production process indicators of cost reduction, flexibility and capacity improvement, avoiding traditional misguided measures based on sales, which are more product oriented. Kowo *et al.*, (2013), conducted a study on innovation as a major driver of economic and social development as the rise of modern industrial powers in North America and Europe as well as the economic success of many developing countries is based on rapid increases on the speed of technological process and managerial innovations. The study found out that process innovation has a significant effect on organisational performance and there exist a significant relationship between service modification and sales volume.

To examine the relationship between process/technology innovation and operational performance of small and medium-scale ventures South-South Geo-political zone, Nigeria:

The findings of this study revealed that there is significant relationship between process/technology innovation and operational performance of small and medium-scale ventures South-South Geo-political zone, Nigeria ($R = 0.633$, $P = 0.000 < 0.05$). The findings of this study are in congruence with previous findings of James and Odumeru, (2013), who conducted a study on business environment, organisations keep evolving ways of outwitting one another in the marketplace in order to remain competitive and achieve strategic goals. One of such strategies is innovation. This paper looks at how performance outcomes of organisations have been influenced by their innovation strategies, drawing from evidence in literatures. It is concluded that innovation has been proven to strongly influence competitiveness, profitability, productivity etc. Thus, organisations are advised to innovate in order to achieve their organisational goals. Aloes, Mohamed *et al.*, (2012), examined the impact of innovation on the performance of Small and Medium Enterprises (SMEs) in Hargeisa, Somali land. Regression results of the study reveal that innovation significantly affects the performance of SMEs in Hargeisa. The study finds that the effects of product innovation, marketing innovation and organizational innovation are statistically significant among these SMEs.

Conclusion

In conclusion, this study has demonstrated a significant positive relationship between process/technology innovation and the performance of small and medium-scale ventures in the South-South Geo-political zone of Nigeria. The empirical evidence supports the hypothesis that process/technology innovation enhances financial, market, and operational performance. SMEs in this region, like their counterparts globally, can significantly benefit from embracing innovative practices to improve their competitive edge and overall performance.

The findings underscore the critical role of innovation in driving organizational success, particularly in turbulent environments characterized by rapid technological changes and market uncertainties. SMEs that invest in new methods, technologies, and management practices are better positioned to achieve sustainability, growth, and high performance. The study highlights the need for these enterprises to continually innovate to meet customer needs, improve product quality, and enhance operational efficiency.

Given the current competitive landscape, it is essential for SMEs to focus on innovation as a strategic imperative. This will not only improve their market position but also contribute to broader economic development by fostering entrepreneurship and creating employment opportunities.

Public and organizational policies should therefore be designed to support and incentivize innovation activities. By doing so, SMEs can harness the full potential of their innovative capabilities, ensuring long-term growth and sustainability in the ever-evolving business environment.

Recommendations

Based on the findings of this study, the following recommendations were made;

1. Small and medium-scale ventures should invest in benchmarking with the best technology so as to cut a niche in the industry without necessarily reinventing the wheel. Also, it is recommended that the small and medium-scale ventures should make use of cloud computing services to use resource planning without necessarily purchasing the software. This will minimize cost and improve performance.
2. More innovative activities such as development of new products, adding value to existing products, seeking out new ways to do things and exploitation of new markets must be used by owners/managers of manufacturing SMEs to improve upon their performances.
3. The study recommends that the small and medium-scale ventures should invest in innovative technology so as to survive intense competition currently experienced in the small and medium-scale ventures sector.

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