

Strategic Entrepreneurial Mindset and Productivity of Nigerian Indigenous Oil and Gas Service Companies in Selected South-South States, Nigeria

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Abstract: *This study examined the effect of strategic entrepreneurial mindset on productivity of Nigerian indigenous oil and gas service companies in selected South-South States, Nigeria. The study adopted survey research design. The research objective, question and hypothesis were in line with the research problem. The study which was at the organisational unit of analysis used a self-developed and administered five-points Likert scale questionnaire as instrument of primary data collection from management level respondents. The population of the study was 1827 Nigerian indigenous oil and gas service companies in selected South-South States, Nigeria obtained from Nigerian Content Development and Monitoring Board (NCDMB) approved register and Petroleum Technology Association of Nigeria (PETAN) membership directory. The study sample size was 328 obtained with Taro Yamane's formula for sample size determination while Bowley's formula was used for the proportional allocation of firms in randomly selected states. The survey instrument reliability was determined with Cronbach's Alpha while its validity tests were with Pearson's *r*, Kaiser-Meyer-Olkin (KMO) measure of sample adequacy and Bartlett's Test of Sphericity. The primary data were analysed using descriptive and inferential statistics in Microsoft Excel Software Package version 2016 and IBM SPSS version 29 software application tools respectively. The research hypothesis was tested using simple regression analysis techniques. The results of regression analysis showed that strategic entrepreneurial mindset significantly and positively influenced productivity of Nigerian indigenous oil and gas service companies in selected South-South States, Nigeria. The study therefore concludes that strategic entrepreneurial mindset has significant and positive influence on productivity of Nigerian indigenous oil and gas service companies in South-South States, Nigeria. The study recommends that for owners, managers and employees of Nigerian indigenous oil and gas service companies to achieve sustainable competitive advantage, they should proactively embrace strategic entrepreneurial growth mindset to effectively as well as efficiently manage and grow their firms in size, scope and scale.*

Keywords: *Strategic Entrepreneurial Mindset, Productivity, Strategic Entrepreneurial Growth, Sustainable Competitive Advantage.*

1.0 Introduction

Strategic entrepreneurial mindset is defined as the feelings and the belief of a particular ability to think outside the box. Having strategic entrepreneurial mindset is important to continue the aggressiveness of economic links and the socio-economic lifestyles of the entrepreneurs through value creation and employment generation (Lackeus, 2016). It has been established that strategic entrepreneurial

mindset offers potential insights to many situations in understanding entrepreneurship in terms of opportunity recognition, entrepreneurial action, new venture creation, new market and business performance (Popoola, 2014). Also, Kraus and Meier. (2016) states that strategic entrepreneurship mindset is about creativity, innovation and taking opportunities that results to firm's wealth creation and success. This type of mindset enables entrepreneurs to make realistic decisions when confronted with uncertainties. Creativity is a means to unlock the entrepreneurial potential of individual entrepreneurs and organisations since new ideas and approaches are key ways of promoting entrepreneurial culture. Also, strategic entrepreneurial mindset is defined as the exhibition of individual's or firm's creativity, innovativeness and being business alert which enable firms or individuals to stay above competitor and achieve optimal performance known as operational excellence. Previous studies have shown that entrepreneurial mindset influenced the adoption of strategic entrepreneurship approach, the synergy of entrepreneurship and strategic management and superior firm performance which involves both advantages-seeking and opportunity-seeking actions known as strategic entrepreneurship (Chai & Sa, 2016., Dogan, 2015).

Productivity is defined as the relationship between output of goods and services of employees in organisations and input of resources which include both human and non-human used in the production process. According to Nwachukwu. (2007) cited in Anya, Umoh and Worlu. (2017), productivity is the relationship between units of labour input and units of output. The measurement of productivity serves as a scorecard of an effective and efficient use of resources by the organisations. It is the driving force behind a firm's growth and profitability which has become a major goal to be achieved in every organisation (Draft, 2000) cited in Anya, Umoh and Worlu. (2017). Productivity is described as effectiveness and efficiency in the employment of the factors of production like land, labour, capital and entrepreneurship to produce higher output. The higher the numerical value of the ratio, the greater the productivity (Onah, 2010). Productivity means reaching the highest level of performance with the least expenditure of resources. Productivity can be applied at any level, that is, individual level or work unit level or organisational level. Effectiveness and efficiency in production or operation can be assessed with these factors: increase in the size of production or operation output, lesser time in the production of a unit output of goods or services, lesser wastage in resources including defective output in good or services, the use of same or less factor inputs for more output than before.

1.1 Problem Statement

There is a problem of right number of employees with requisite technical skills, knowledge, abilities, capabilities and experience to perform essential duties in the firms. These firms lack sufficient number of employees with technical expertise for delivery of products and services demanded by customers with respect to industrial production, capacity utilization and drilling and completion operations which negatively affects their performance. The Nigerian indigenous oil and gas service companies' situation is exacerbated by the liability of smallness and fragmented effects in operations which makes it harder for them to grow in size, scope, scale, and survive and increases their exposure to potential bankruptcy and failure. Specifically, Nigerian indigenous oil and gas service firms have problems attracting investors and financial capital, fiercely compete for skilled workers with both local and foreign large companies and are faced with high administrative costs. In addition, Nigerian indigenous oil and gas companies are mostly dependent on external resources and become hostages of the modest size, scope and scale of their operations. During the downside periods of the cyclical characteristics of the oil and gas industry market, customers of the oil and gas service firms which are mainly the oil and gas producing companies cut budgets and spending by suspending or outright cancellation of planned projects; investors and creditors cut lending while pressure from the competition increases. Therefore, the specific research problem of this paper is the seemingly negative growth mindset exhibited by Nigerian indigenous oil and gas service entrepreneurs toward growing their firms in size, scope and scale.

1.2 Research Objective

This study examined the effect of strategic entrepreneurial mindset on productivity of Nigerian indigenous oil and gas service companies in selected South-South States, Nigeria.

1.3 Research Question

To what extent does strategic entrepreneurial mindset affect productivity of Nigerian indigenous oil and gas service companies in selected South-South States, Nigeria?

1.4 Research Hypothesis

H₀: Strategic entrepreneurial mindset does not significantly affect productivity of Nigerian indigenous oil and gas service companies in selected South-South States, Nigeria.

2.0 Literature Review

2.1 Theoretical Review

The study was based on two theoretical foundations: dynamic capabilities theory and Ansoff strategic success theory.

2.1.1 Dynamic Capabilities Theory

The dynamic capabilities theory (DCT) was developed by Teece, Pisano and Shuen. (1997) as an extension of the resource-based theory which mitigated the shortcomings of resource-based theory and resource dependence theory to explain the mechanism that links resources and product markets to sustainable competitive advantage, survival and growth of the firms in size, scope and scale (Arokodare & Asikhia, 2020). While resource-based theory emphasizes resource selection such as resource combination, dynamic capabilities theory emphasizes resource renewal, that is, reconfiguring old resources into new combinations of operational capabilities. Again, while resource-based theory emphasizes on sustainable competitive advantage, dynamic capabilities theory laid its emphasis on competitive survival and resilience due to turbulent in the business environment (Barney, Wright & Ketchen Jr, 2001; Bitar & Somers, 2003) cited in Kori, Muathe & Marina. (2021).

Dynamic capabilities theory as proposed by Teece, Pisano and Shuen. (1997) is the firm's ability to integrate, build and reconfigure its internal and external competencies to meet the rapidly changing business environment. Pavlou and El Sawy. (2011) cited in Eko and Avanti. (2022) defined dynamic capabilities as a capability that helps expand, modify and reconfigure existing operational capabilities into new competitive capabilities that are more appropriate to changing environmental conditions. It is the capacity of a firm to purposefully create, extend and modify its resource base through new products and services development and delivery, alliance formation or post-acquisition integration which leads to sustainable competitive advantage and superior performance (Eko & Avanti, 2022). Dynamic capabilities reflect an organizations ability to achieve new and innovative competitive advantage given path dependencies and market positions. Dynamic capabilities theory is the suitable term to show the firm's ability to exploit internal and external changing environment to be able to survive by beating the competition to achieve organizational goal and remain in business (Kabuoh et al., 2019). Beyond building organizational capabilities, stakeholders perceptions also indicate that the organization has to build its capacity to exploit current resources, capability exploitation and engage in capability building (Ahenkora & Adjei, 2012). Dynamic capabilities theory is comprised of several classes of factors that can help determine a firm's distinctive competencies and overall performance (Arokodare et al., 2020). These factors are processes, positions and paths which are considered as the main variables of the theory which explain the firm's dynamic capabilities and the sources of competitive advantage. Teece. (2018) grouped organizational capabilities into ordinary and dynamic capabilities. Ordinary capabilities are mainly operational while dynamic capabilities are generally strategic in form and nature. The dynamic capabilities theory also focuses on how dynamic environmental factors expose the mindset of entrepreneurs towards dynamic global business functions and innovation which enhance firms sustainable competitive advantage and superior performance (Arokodare et al., 2020). Dynamic capabilities theory explains how firms gain sustainable

competitive advantage to survive in highly competitive and turbulent business environment in several ways. From review and synthesis of literature, dynamic capability is the enterprise's potential to systematically solve problems formed by its propensity to sense opportunities and threats, make timely and market oriented decisions and to change its resource base (Arokodare et al., 2020). The dynamic capabilities theory framework can help scholars understand the foundations of long-run enterprise success while helping manager delineate relevant strategic and tactical considerations and the priorities they must adopt to enhance enterprise performance and escape the zero profit tendency associated with operating in markets such as the oil and gas industry open to global competition and other cross border trade factors (Teece, 2017; Arokodare et al., 2020). The framework integrates the strategy and innovation literature and highlights the most important capabilities that managers need in dynamic business environment in order to sustain superior short-run and long-run business performance (Arokodare et al., 2020). It brings together the concepts of resources, uncertainty and knowledge to strategically explain while firms exist, their business scope and their potential for growth and sustained performance in highly competitive markets (Teece, 2018). The dynamic capabilities theory framework seeks to explain firm growth and survival by detailing what firms can do to create, extend, integrate, modify and deploy their resources while simultaneously managing competitive threats and effectuating necessary transformations (Teece, 2018). Dynamic capabilities include the sensing, seizing and transforming abilities that are needed to upgrade the ordinary capabilities of an enterprise and direct them through developing and coordinating the firm's resources to address and shape changes in the marketplace and/or in the business environment (Teece, 2018).

However, scholars criticize dynamic capabilities theory as being vague and tautological in spite of the fact that it helps to address how business organisations adapt to changing environment, it fails to be exact. Moreover, capabilities of the theory are difficult to be identified or operationalized (Burisch & Wohlgemuth, 2016) cited in Kori, Muathe & Maina. (2021).

The dynamic capabilities theory is employed as one of the underlying theories for this study because the theoretical perspective and ideology are tied to the assumption that firms dynamically manage their resources and business environment in order to attain sustainable competitive advantage and overall performance specifically operational performance in terms of productivity in the industry. Therefore, the dynamic capabilities theory is valuable to the current study in explaining the effect of strategic entrepreneurial mindset on productivity of Nigerian indigenous oil and gas service companies in selected South-South States, Nigeria.

2.1.2 Ansoff Strategic Success Theory

Ansoff strategic success theory was developed in 1957 by Ansoff H. Igor credited as the father of modern strategic management school of thought is a planning model or framework used by an organisation to determine its activities, products and services strategy (Odhiambo & Njuguna, 2021). Ansoff strategic success theory states that the optimal performance (i.e. financial and non-financial) of a firm will be realised when the firm's strategic aggressiveness, general management capability and responsiveness are aligned with environmental turbulence (Kipley & Lewis, 2009). The theory further states that there is a strong causal relationship between formalized strategic planning and the achievement of optimal success of an organisation (Abudawood, 2021; Odhuambo & Njuguna, 2021; Ansoff et al., 2021;). Therefore, for a firm to be effective in its strategy, there is a need to match the level of environmental turbulence with its strategic aggressiveness (planned strategy) and organisational responsiveness. As stated by Ansoff, 1971 cited in Odhiambo and Njuguna. (2021), the level of turbulence strongly affects its strategy and its understanding provides a good foundation in developing a better performing organisation. Most times, the determination of strategy is dependent on environmental turbulence. Ansoff's theory acts as a tool for management of the firm to develop strategic direction towards improving its overall performance (Moussetis, 2011 cited in Odhiambo & Njugunna, 2021). Ansoff strategic success theory is valuable to the current study in explaining how a positive or negative mindset of an entrepreneur to grow in size, scope and scale affect productivity of Nigerian indigenous oil and gas service firms in selected South-South States, Nigeria.

2.2 Conceptual Review

2.2.1 Strategic Entrepreneurial Mindset

The strategic entrepreneurial mindset idea is formed by the state of mind of an individual that changes the status of the individual to an entrepreneur who then, identify and analyze the opportunities and possibilities offered by environment (Kouakou, Akolgo & Tchamekwen, 2019). Individuals with strategic entrepreneurial mindset are always attracted to opportunities, innovation and new value creation. Being entrepreneurial means thinking and doing something that one has not done before in order to achieve a desired goal or outcome (Arokodare et al, 2020). Strategic entrepreneurial mindset is about assessing a situation, designing alternatives and selecting a new way or a combination of ways that the individual believes will result to something better than the current situation (Kerr, Kerr & Xu, 2017). Ojala. (2016) states that the entrepreneur's mind processes information in an interpretative manner and construct their reality by using information from their environment. According to Khin and Lim (2018) there are three things usually at the real heart of entrepreneurs: ability to sense, identify or recognize an opportunity, ability to review or assess the opportunity and act quickly; and ability to successfully execute and grasp opportunity through mobilization of resources even under conditions of uncertainties. A meta-analysis of extant literature on strategic entrepreneurial mindset by Nanmann. (2017) identified seven attributes of strategic entrepreneurial mindset as: cognitive tuning and goal orientation, heuristic-based decision, alertness, prior knowledge, social interaction, meta-cognition and cognitive adaptability. Therefore, this study conceptualized strategic entrepreneurial mindset as entrepreneurial alertness, opportunity recognition, risk-taking propensity, entrepreneurial beliefs and values, entrepreneurial innovation, creativity, entrepreneurial action, business alertness, new venture creation, new market and performance.

2.2.2 Productivity

The term productivity is an important factor in every organisation. Productivity is not everything, but in the long-run, it becomes almost everything (Maarleved, 2011; Kreb, 2000 cited in Bayo & Red-wall, 2020). Productivity has been a crucial factor to decrease the costs associated with increased demand in return by providing more services and it has been viewed as a long-term strategy especially for firms in the services industry. In industry context, productivity is defined as a measure of output towards inputs. Some scholars have suggested that productivity is a measure of utilization, efficiency, effectiveness, quality, predictability and other performance dimensions (Brown & Dev, 2000; Kilic & Okumus, 2005; Johnston & Jones, 2004 cited in Bayo & Red-well, 2020). Productivity measure is very important for the success of every organisation's profitability and growth in highly dynamic and complex business environment in which the oil and oil gas services firms operate. Productivity is conceptualised as the individual 's investment of his complete self into a role. Again, Nwachukwu. (2009) cited in Bayo and Red-well. (2020) defined productivity as the extent to which an organisation's resources are brought together and effectively utilized for the achievement of set objectives to achieve desired results. Productivity and output are two indispensable elements of an organisational life because without increased and sustained output on the part of employees, the organisation risk poor performance outcomes in general and if not controlled or corrected will lead to extinction of that organisation. Based on the fact that productivity is connected with the extent an organisation effectively and efficiently converts its input resources to the desired output products and services for the accomplishment of set objectives toward achieving desired results. In summary, productivity is defined as the ratio of output to input in a production or operation process. Therefore, this study conceptualized productivity as increase in the size of production or operation output, lesser time in the production or operation of a unit output of goods or services, minimize

wastage of resources, use of the same or less input factors for more outputs and continuous improvement practices.

2.3 Empirical Review

In establishing the empirical gaps, this study reviewed existing body of knowledge on strategic entrepreneurial mindset and productivity within and outside the context of Nigerian indigenous oil and gas service companies in selected south-south states, Nigeria.

2.3.1 Strategic Entrepreneurial Mindset and Productivity

Nkem and Onuoha. (2023) adopting a cross-sectional survey research design quantitatively examined the relationship between entrepreneurial mindset and organisational effectiveness of manufacturing firms in Port Harcourt, Rivers State, Nigeria. The study sample size was 88 respondents selected using convenient sampling technique drawn from a population of 120 executives of 8 manufacturing firms in Port Harcourt used for the study. A closed ended structured questionnaire was used to collect primary data from the respondents while Cronbach's Alpha coefficient was used to test for the reliability of the survey instrument. Descriptive statistics and Spearman's rank order correlation were used for data analysis and hypotheses testing. The empirical findings of the study revealed that entrepreneurial mindset had a significant and positive effect on organisational effectiveness of manufacturing firms in Port Harcourt, Rivers State, Nigeria. The study recommended that firms should consider employees with entrepreneurial mindset as principal means of achieving their firms' strategic objectives; create an enabling workspace for employees to thrive because sustained form of corporate entrepreneurship tend to have culture and system supportive of innovation, creativity and building succession plans as these logically place a firm more competitively. The context of this research work was only 8 selected manufacturing firms in Port Harcourt, Rivers State, Nigeria and convenient sampling technique used made its findings difficult to be generalized to other firms, economic sectors, geopolitical zones in Nigeria as well as other countries. The present study was situated within the Nigerian indigenous oil and gas service companies in South-South, Nigeria and used stratified and simple random sampling techniques in selecting respondents for quantitative primary data collection.

Kariuki, Wachira and Mwenda. (2022) assessed the effect of entrepreneurial mindset on innovation by 1-3 Star Rated Hotels in Kenya. The study used census sampling technique of 333 respondents while the cross-sectional survey was conducted with the aid of self-administered questionnaire based on 5 point Likert scale. The validity and reliability tests were done before the data analysis. The data collected were analysed using descriptive and inferential statistics with the help of Excel and Statistical Package for the Social Sciences (SPSS) version 25.0 software application. The hypotheses were presented and tested using multiple regression analysis and accepted at 0.05 level of significance. The research findings revealed that there is a significant and positive relationship between entrepreneurial mindset and innovation by 1-3 star rated hotels in Kenya. Therefore, the study recommended that entrepreneurs in hotel business should always be proactive in seeking new product ideas and customer product information which will in turn enable them create ideas on coming up with innovative products. The study adopted population census sampling technique because the sample size was small as it was among 1-3 star rated hotels in Kenya making its finding difficult to be generalized to other economic sectors and countries. The current study cut across Nigerian indigenous oil and gas service firms in selected South-South states, Nigeria and the sample size determination and proportional allocation of sample by Taro Yamane's and Bowley's formulas respectively.

Sutanta, Lau and Ezra. (2021) using a survey research design analysed the effect of entrepreneurial mindset and orientation on entrepreneurial performance of University Students in Indonesia. The study employed a purposive sampling technique in selecting a sample size of 364 respondents determined using Slovin's formula from a population of 4036 undergraduate students of management program in four public Universities in Surabaya, Indonesia. Primary data were obtained from the sampled respondents with the aid of a structured questionnaire based on a 5-point Likert scale. The obtained data were subjected to descriptive and inferential analyses with Partial Least Squares Structural Equation Modelling (PLS-SEM) technique. The research results showed that entrepreneurial

mindset has a significant effect on entrepreneurial factors of innovativeness, risk-taking, competitive aggressiveness, autonomy and pro-activeness. All these factors in turn, exhibited positive and significant impact on the students' entrepreneurial performance. The study recommended that managers of tertiary education institutions should promote entrepreneurship education to enable students and by extension citizens to develop their entrepreneurial competencies and mindsets. Also, it recommended that the government and policy makers need to create entrepreneurship education and business incubation centres in the tertiary institutions. This study used purposive sampling technique, hence the generalization of its findings to other sectors and countries is limited. The extant study used simple random sampling and proportional sample size allocation techniques.

Kerubo and Nyang'au. (2021) using a descriptive survey research design empirically examined the influence of entrepreneurial mindset on performance of women-owned micro and small enterprises in Kisii County, Kenya. The research design involved the measurement, classification, analysis, comparison and interpretation of data. The sample size used for the study was 272 respondents which represented 31.9% of the target population, determined using Taro Yamane's (1967) formula from a population of 852 owners of the women-owned micro and small enterprises engaged in three business categories/types of service, trade and agri-business. Stratified sampling technique was used in selecting the desired number of respondents in each stratum as the strata were defined by the three business categories/types. The study used a structured and self-administered questionnaire developed with reference to the research objectives aimed at answering the research questions as a means of primary data collection. The validity and reliability of the research instrument were tested. Data analysis was done by both qualitative and quantitative methods using Statistical Package for the Social Sciences (SPSS) version 23.0 software application. The quantitative data collected was analysed by the use of descriptive statistics (frequency, percentage, mean and standard deviation) while content analysis was used in testing the qualitative aspect of the data. The study used correlation analysis to establish the relationship between independent and dependent variables while multiple regression analysis was conducted to determine the association between the independent variables and the dependent variable. The study found that entrepreneurial leadership, risk-taking, business planning and opportunity recognition all had significant positive relationship with performance of women-owned micro and small enterprises in Kisii County, Kenya. The study therefore recommended that entrepreneurs and owners of small and medium enterprises should be trained in the skills of strategic planning to ensure that they prepare business plan that serves as a basic management tool that helps guide the future direction of their business enterprises. Again, owners of small and medium enterprises should seek information and have the willingness to act on the information in terms of risk and attitude. The government and policy makers need to ensure that information is readily available to these small and medium enterprises. There is need to hold workshops, seminars and conferences where small and medium enterprises will be informed of the emerging trends in the market and new developments where they can exploit business opportunities. The study was among women-owned MSMEs engaged in services, trade and agric-businesses in Kisii County, Kenya and its finding cannot be generalized to other economic sectors and countries. This present study was among Nigerian indigenous oil and gas service companies in selected South-South States, Nigeria.

Yunusa and Abubakar. (2020) examined the role of entrepreneurial mindset on sustainability of micro, small and medium enterprises (MSMEs) in Mubi local government area of Adamawa State, Nigeria. The study adopted a survey research method with a population of 45 MSMEs business owners in Mubi North local government selected through a simple random process. A structured questionnaire based on 4 point Likert scale was used to collect the primary data from the respondents. The data obtained were analysed using descriptive and inferential statistics. The descriptive statistics used were frequency distribution tables and simple percentages while the inferential statistics include Chi-Square and correlation analysis. The results of the study showed that entrepreneurial mindset has significant impact on micro, small and medium enterprises sustainability in the study area. The study recommended that MSMEs should develop entrepreneurial mindset by being creative, innovative,

having propensity for taking risk, imbibe the culture of continuous learning and growth for sustainability of the business. The context of the study was selected micro, small and medium enterprises in Mubi local government area of Adamawa State and the method of inferential analysis used was non-parametric technique of Chi-Square making the generalization of its finding to other economic sectors and states difficult. The context of this current study was Nigerian indigenous oil and gas service companies in selected South-South States, Nigeria and data collected was analysed with parametric inferential techniques of Pearson's Product Moment Correlation Coefficient (PPMCC), simple linear regression analysis and analysis of variance (ANOVA) in testing the formulated research hypothesis.

Kimathi. (2020) evaluated the relationship between entrepreneurial mindset and performance of SMEs in Kenya. The study adopted survey research design with a sample size of 400 SME firms drawn from a population of 26810 licensed SME firms in Nairobi County, Kenya. The study sample size was determined through a multi-stage probability sampling method in which stratified sampling technique was used to first select firms under the sector's strata of manufacturing, services, wholesale and retail trade, and real estate activities and then simple random sampling was used to select representative samples from each sector. The sample size determination technique used was Taro Yamane's formula. Quantitative primary data was collected using structured questionnaire based on a 5-point Likert Scale. The data collected were analysed using the Statistical Package for the Social Sciences (SPSS) and Microsoft Excel software application tools. The study results established that creativity, innovation, awareness about SME support services and self-efficacy all had positive and significant effect on performance of SMEs in Nairobi County, Kenya while propensity to taking-risk was positively but non-significantly related to performance of SMEs in Nairobi County, Kenya. The study recommended that SMEs owners and managers should adopt entrepreneurial mindset to support them build resilient and high performing sustainable small and medium enterprises. The study was situated among licensed SMEs in Nairobi County, Kenya making the generalization of its findings to other economic sectors and countries difficult. This current study took place among Nigerian indigenous oil and gas service firms within the South-South geopolitical zone of Nigeria.

Furthermore, Abun, Basilio, Fredolin and Magallanes. (2020) using a descriptive assessment and correlation research design examined the effect of entrepreneurial mindset and work environment on employees' work performance in Divine Word College Laoag City, Ilocos Norte, Philippines. The study adopted total enumeration or census sampling technique of 169 employees of Divine Word College while the primary data were collected with a structured questionnaire adapted from previous relevant studies. Descriptive and inferential statistics were used for data analysis. The results of the study revealed that entrepreneurial mindset and work environment significantly affected the individual work performance of employees of Divine Word College. The study recommended that management of organisations should establish a working environment that promotes independence, autonomy, creativity and risk-taking. This was a case study of Divine Word College that used census sampling technique as the population was not large enough to be sampled making the generalization of its findings difficult. The present study adopted a survey research design, stratified, random sampling techniques, Taro Yamane's and Bowley's formulas from population of Nigerian indigenous oil and gas service firms in selected four states from the six states in South-South, Nigeria.

Jemal. (2020) employing a systematic literature approach studied the effect of entrepreneurial mindset and entrepreneurial competence on performance of small and medium enterprises. The study was an integrative evaluation of prior empirical research studies selected from 2000 to 2020 using key words such as entrepreneurial mindset and performance, entrepreneurial competence and performance, small and medium enterprises, relationship, impact or effect of entrepreneurial mindset/entrepreneurial competence. The systematic search produced a total of 57 journals articles out of which 16 were review articles while 41 were research articles which conducted their investigation using quantitative survey research design based on descriptive and inferential analysis. The researcher developed a conceptual model of the relationship between entrepreneurial mindset,

entrepreneurial competence and performance that showed their dimensions and measures respectively. The dimensions of entrepreneurial mindset were identified as innovativeness, opportunity recognition, pro-activeness, quick action/alertness and creativity. The dimensions of entrepreneurial competence were opportunity, innovation, relational, conceptual, commitment, organizing, and managing resources. The measures of performance were market share, customer satisfaction and growth. The findings of the study showed that entrepreneurial mindset and entrepreneurial competence have positive and significant effect on the performance of SMEs and that when the two are combined help firms to survive and compete in better ways to remain in business. The study recommended that SMEs Managers should make efforts to acquire knowledge and skill through education and participating in entrepreneurship development programmes offered by both the government and non-governmental organisations. This research lacked theoretical foundation and empirical analytical techniques making its findings inadequate for generalization. The present research was anchored on sound theoretical foundation, descriptive survey research design and empirical descriptive and inferential techniques for analysis of collected quantitative primary data from field survey.

Moreover, Bayo and Red-Well. (2020) adopting a survey research design evaluated how disruptive technologies affected productivity in soft drinks manufacturing firms in South-South, Nigeria. The study which was at the organisational unit of analysis had a total of 45 senior managers as respondents in the soft drinks manufacturing firms registered with the Manufacturers Association of Nigeria (MAN) South-South region as the population. The researchers adopted a census sampling technique as the population of 45 respondents used as the sample size was small. The quantitative primary data were collected using personal survey method with the aid of a validated structured 5-point Likert Scale questionnaire. The reliability of the questionnaire as the survey instrument was estimated using Cronbach's Alpha coefficient. The data obtained from field survey were coded into IBM Statistical Package for the Social Sciences (SPSS version, 22) software application and the analytical method employed was Pearson's Product Moment Correlation Coefficient (PPMCC). The study findings showed that all the disruptive technologies have positive and significant relationship with productivity in the soft drinks manufacturing firms in the South-South region of Nigeria. The study concluded that efforts should be made to embrace 3-D printing technology, additive manufacturing technology and mobile internet technology in order to enhance productivity within the soft drinks sector of the manufacturing industry which has the potential to boost the nation's economy. The study therefore recommended that both the government and manufacturing firms should see advanced and sophisticated technologies like 3-D printing, additive manufacturing and mobile internet as catalysts to improve production process and advertise products to end users in order to stay competitive in the global industrial market and ensure industrial revolution especially in the soft drinks sector to be sustainable. The population and sample size of the study were small thereby limiting the generalization of its finding to other economic sector, geopolitical zones of Nigeria and other countries. The extant study involved large population and sample size of Nigerian indigenous oil and gas service firms in four randomly selected South-South States, Nigeria.

Also, Ruth, Jaja and Ukoha. (2018) in their study investigated the relationship between entrepreneurial mindset and human capacity building of small and medium scale firms in Port Harcourt Rivers State, Nigeria. The study employed a cross-sectional survey research design method based on quasi-experimental research. A sample size of 125 employees determined based on the Taro Yamane's formula introduced in 1974 from a population of 182 employees in 15 small and medium scale businesses in Port Harcourt was used for the study while Bowley's formula was used for population allocation for each company. Primary data were obtained by administering 5 point Likert scale structured questionnaire to selected respondents. After an extensive test of linearity, homogeneity and normality on the collected data, the null hypotheses were tested using Spearman's Rank Order correlation coefficient statistics which was facilitated through statistical package for the social sciences (SPSS) version 21.0 software. The research findings revealed a positive and significant relationship

between entrepreneurial mindset and human capacity building in small and medium scale businesses in Port Harcourt. The study recommended that employees of small and medium scale firms should develop good entrepreneurial mindset in order to improve human capacity building which was observed to be lacking in their business operations in Port Harcourt, Rivers State, Nigeria. The study was carried out among employees of registered small and medium scale enterprises in Port Harcourt and results obtained cannot be generalized to other economic sectors within and outside Rivers State as well as other countries. The present study was carried out in four randomly selected states of South-South, Nigeria.

Asenge, Diaka and Soom. (2018) examined the effect of entrepreneurial mindset on the performance of SMEs in Benue State, Nigeria. The study used a survey research design to obtain quantitative data using a structured self-administered questionnaire on a 4-point Likert Scale from a sample size of 250 respondents drawn from a population of 650 licensed SMEs in Makurdi Metropolis, Benue State, Nigeria. The study used stratified random sampling technique in selecting respondents. The data collected were analysed using descriptive and inferential statistics in Statistical Package for the Social Sciences (SPSS) software application tool. Correlational and multiple regression statistics were employed for data analysis and hypotheses testing. The research findings revealed that innovativeness, creativity, business alertness and risk-taking all significantly affected performance of SMEs in Makurdi Metropolis, Benue State, Nigeria. The study recommended that all the stakeholders including the policy makers should re-strategize and create avenues that will promote entrepreneurial mindset among existing and potential entrepreneurs. This study focused on SMEs in Makurdi Metropolis making its findings difficult to be generalized to other economic sectors and geographical locations. The present study was among Nigerian indigenous oil and gas firms in randomly selected South-South States, Nigeria.

Also, Adokiye, Alagah and Onuoha. (2017) in their research work empirically investigated the relationship between entrepreneurial mindset and organisational success of SMEs in Rivers State, Nigeria using a cross-sectional survey of the quasi-experimental design. A structured questionnaire on a 5-point Likert scale was used in obtaining primary data from a sample size of 112 respondents drawn from a population of 1500 SMEs in Port Harcourt registered with Rivers State Ministry of Trade and Commerce. The study adopted probability simple random sampling technique by which participants were determined from 20 selected registered SME firms in Port Harcourt, Rivers State. The Taro Yamane's sample size determination formula was used in determining the study sample size of 112 at 0.05 level of significance. The study questionnaire was subjected to validity and reliability tests of content and face validity and Cronbach's Alpha coefficient respectively. The data analysis techniques were descriptive and inferential statistics with the aid of Statistical Package for the Social Sciences (SPSS) version 21.0 software application tool. The research findings showed that a significant relationship exist between entrepreneurial mindset and organisational success of SMEs in Port Harcourt, Rivers State, Nigeria. The study recommended that SMEs operators and managers should be entrepreneurial in practice and government as a matter of importance pay close attention by providing the enabling policies and infrastructures that will enhance the success of SME organisations in Rivers State. The study was carried out with selected SMEs in only two local government areas in Rivers State and its results cannot be generalized to other states, geopolitical zones as well as other countries and economic sectors. This extant study involved Nigerian indigenous oil and gas service firms operating in four randomly selected states from the six states that make up Nigeria's South-South geopolitical zone.

Table 1. Summary of empirical review and gaps identified.

STRATEGIC ENTREPRENEURIAL MINDSET AND PRODUCTIVITY							
S/No	Author(s)	Topic	Context	Methodology	Findings	Gaps	Current Study
1	Nkem and Onuoha. (2023)	Entrepreneurial Mindset and Organizational Effectiveness of Manufacturing Firms in Port Harcourt, Rivers State, Nigeria.	120 executives of 8 Manufacturing Firms in Port Harcourt, Nigeria.	A cross-sectional quantitative survey research design, a closed end structured questionnaire, descriptive statistics and Spearman's rank order correlation were used for data analysis and hypotheses testing.	The empirical findings of the study revealed that entrepreneurial mindset had a significant and positive effect on organizational effectiveness of manufacturing firms in Port Harcourt, Rivers State, Nigeria.	The context of this research work was only 8 selected manufacturing firms in Port Harcourt, Rivers State, Nigeria and convenient sampling technique used made it findings difficult to be generalized to other firms, economic sectors, geopolitical zones in Nigeria as well as other countries.	The present study was situated within the Nigerian indigenous oil and gas service companies in selected South-South States, Nigeria and used stratified and simple random sampling techniques in selecting respondents for quantitative primary data collection.
2	Kariuki, Wachira and Mwenda, (2022)	The Effect of Entrepreneurial Mindset on Innovation by 1-3 Star Rated Hotels in Kenya.	333 employees of 1-3 Star Rated Hotels, Kenya.	The study used census sampling technique, self-administered questionnaire based on 5-point Likert scale, the data collected were	The research findings revealed that there is a significant and positive relationship between entrepreneurial mindset and	The study adopted population census sampling technique because the sample size was small as it was	The current study cut across Nigerian indigenous oil and gas service firms in selected South-South States, Nigeria and the sample size determination and proportional allocation of sample size by Taro Yamane's

				analyzed using descriptive and inferential statistics and multiple analysis with the help of Excel and SPSS version 25.0 software application.	innovation by 1-3 star rated hotels in Kenya.	among 1-3 star rated hotels in Kenya making its finding difficult to be generalized to other economic sectors and countries.	and Bowley's formulas respectively.
3	Sutanta, Lau and Ezra. (2021)	The Effect of Entrepreneurial Mindset and Orientation on Entrepreneurial Performance of University Students in Indonesia.	4036 Management Program undergraduate students of four public Universities in Surabaya, Indonesia.	The study used a survey research design, purposive sampling technique, Slovin's formula for sample size determination, structured questionnaire based on a 5-point Likert scale, and data were subjected to descriptive and inferential analyses with Partial Least Squares Structural Equation Modelling (PLS-SEM) technique.	The research results showed that entrepreneurial mindset has a significant effect entrepreneurial factors of innovativeness, risk-taking, competitive aggressiveness, autonomy and pro-activeness which all in turn, exhibited positive and significant impact on the students' entrepreneurial performance.	This study used purposive sampling technique, hence the generalization of its findings to other sectors and countries is limited.	The extant study used stratified and simple random sampling and proportional sample size allocation techniques.
4	Kerubo and Nyang'au. (2021)	The Influence of Entrepreneurial Mindset on Performance of Women-owned Micro and Small	852 Women-owned MSMEs in Kisii County, Kenya.	The study used a descriptive survey research design, sample size determined with Taro Yamane's formula, stratified	The study found that entrepreneurial leadership, risk-taking, business planning and opportunity recognition all had significant positive	The study was among women-owned MSMEs engaged in services, trade and agric-businesses in Kisii	This extant study was among Nigerian indigenous oil and gas service companies in selected South-South States, Nigeria.

		Enterprises in Kisii County, Kenya.		sampling technique, a structured and self-administered questionnaire, qualitative and quantitative data analysis in SPSS version 23.0 software application.	relationship with performance of women-owned micro and small enterprises in Kisii County, Kenya.	County, Kenya and its finding cannot be generalized to other economic sectors and countries.	
5	Yunusa and Abubakar. (2020)	The Role of Entrepreneurial Mindset on Sustainability of Micro, Small and Medium enterprises (MSMEs) in Mubi Local Government Area of Adamawa State, Nigeria.	45 MSMSEs in Mubi, Adamawa.	The study adopted a survey research method, 4-point Likert Scale structured questionnaire, the data obtained were analyzed using descriptive statistics in frequencies and percentages while the inferential statistics included Chi-Square and correlational analysis.	The results of the study showed that entrepreneurial mindset has significant impact on micro, small and medium enterprises sustainability in the study area.	The context of the study was selected micro, small and medium enterprises in Mubi Local Government Area of Adamawa State and the method of inferential analysis used was non-parametric technique of Chi-Square making the generalization of its finding to other economic sectors and states difficult.	The context of this extant study was Nigerian indigenous oil and gas service companies in selected South-South States, Nigeria and data collected were analyzed with parametric inferential techniques of Pearson's Product Moment Correlation Coefficient (PPMCC) and simple linear regression analysis in testing the formulated research hypotheses.
6	Kimathi. (2020)	Entrepreneurial Mindset and	26810 SMEs in Nairobi, Kenya.	The study adopted survey research	The study results established that	The study was situated among	This current study took place among Nigerian indigenous oil

Performance of
SMEs in Kenya.

design, sample size was determined through a multi-stage probability sampling method, stratified sampling technique, simple random sampling, Taro Yamane's formula, 5-point Likert Scale, and data analysis in SPSS and Microsoft Excel software applications.

creativity, innovation, awareness about SME support services and self-efficacy all had positive and significant effect on performance of SMEs in Nairobi County, Kenya while propensity to taking-risk was positively but non-significantly related to performance of SMEs in Nairobi County, Kenya.

licensed SMEs in Nairobi County, Kenya making the generalization of its findings to other economic sectors and countries difficult.

and gas service firms in selected states within the South-South geopolitical zone of Nigeria.

Abun, Basilio,
Fredolin and
Magallane.
(2020)

The Effect of
Entrepreneurial
Mindset and Work
Environment on
Employees' Work
Performance in
Divine Word
College Laoag City,
Ilocos Norte,
Philippines.

169 employees
of Divine Word
College Laoag
City, Philippines.

This study used a descriptive assessment and correlation research design, total enumeration or census sampling technique, a structured questionnaire adapted from previous relevant studies, data collected were analyzed with descriptive and inferential statistics.

The results of the study revealed that entrepreneurial mindset and work environment significantly affected the individual work performance of employees of Divine Word College.

This was a case study of Divine Word College that used census sampling technique as the population was not large enough to be sampled making the generalization of its findings difficult.

The present study adopted a cross-sectional survey research design, stratified, random sampling techniques, Taro Yamane's and Bowley's formulas from population of Nigerian indigenous oil and gas service firms across the selected states in South-South, Nigeria.

8	Jemal. (2020)	The Effect of Entrepreneurial Mindset and Entrepreneurial Competence on Performance of Small and Medium Enterprises.	57 journals articles of previous studies selected from the year 2000 to 2020.	The study was an integrative evaluation of prior empirical research studies and conceptual review.	The findings of the study showed that entrepreneurial mindset and entrepreneurial competence have positive and significant effect on the performance of SMEs and that when the two are combined help firms to survive and competence in better ways and remain in business.	This research lacked theoretical foundation and empirical techniques making its findings inadequate for generalization.	The present research was anchored on sound theoretical foundation, descriptive survey research design and empirical descriptive and inferential techniques for analysis of collected quantitative primary data from field survey.
9	Bayo and Red-Well. (2020)	Disruptive Technologies and Productivity in Soft Drinks Manufacturing Firms in South-South, Nigeria.	45 soft drinks manufacturing firms registered with the Manufacturers Association of Nigeria (MAN) South-South region, Nigeria.	This study adopted a survey research design, a census sampling technique, 5-point Likert scale structured questionnaire, Pearson's Product Moment Correlation Coefficient (PPMCC) in IBM SPSS version 22 software application.	The study findings showed that all the disruptive technologies have positive and significant relationship with productivity in the soft drinks manufacturing firms in the South-South region of Nigeria.	The population and sample size of the study were small thereby limiting the generalization of its finding to other economic sector, geopolitical zone and the country at large challenging.	The extant study involved large population and sample size of Nigerian indigenous oil and gas service firms in selected South-South States, Nigeria.
10	Ruth, Jaja and Ukoha. (2018)	Entrepreneurial Mindset and Human Capacity Building of Small and Medium Scale	182 employees of 15 SMEs in Port Harcourt, Nigeria.	A cross-sectional survey research design method based on quasi-experimental	The research findings revealed a positive and significant relationship between entrepreneurial	The study was carried out among employees of registered small	The present study was carried out in selected states in South-South, Nigeria.

Firms in Port
Harcourt Rivers
State, Nigeria.

research, 5-point
Likert scale
questionnaire, Taro
Yamene's and
Bowley's formulas
for sample size
determination and
proportional sample
allocation in
selecting
respondents
respectively,
hypotheses testing
using Spearman's
Rank Order
Correlation
Coefficient in SPSS
version 21.0
software application.

mindset and human
capacity building in
small and medium
scale businesses in
Port Harcourt.

and medium
scale enterprises
in Port Harcourt
and results
obtained cannot
be generalized to
other economic
sectors within
and outside
Rivers State as
well as other
countries.

Asenge, Diaka
and Soom.
(2018)

The Effect of
Entrepreneurial
Mindset on the
Performance of
SMEs in Benue
State, Nigeria.

650 registered
SMEs in
Makurdi
Metropolis,
Nigeria.

The study used a
survey research
design, a structured
self-administered
questionnaire on 4-
point Likert scale,
stratified random
sampling technique,
data analysis using
descriptive and
inferential statistics
with hypotheses
testing by
correlational and
multiple regression

The research findings
revealed that
innovativeness,
creativity, business
alertness and risk-
taking all significantly
affected performance
of SMEs in Makurdi
Metropolis, Benue
State, Nigeria.

This study
focused on SMEs
in Makurdi
Metropolis
making its
findings difficult
to be generalized
to other
economic sectors
and geographical
locations.

The present study included
Nigerian indigenous oil and gas
firms in selected South-South
States, Nigeria.

Adokiye, Alagah and Onuoha. (2017)	Entrepreneurial Mindset and Organizational Success of SMEs in Rivers State, Nigeria.	1500 SMEs registered with Rivers State Ministry of Trade and Commerce in Port Harcourt, Nigeria.	analysis in SPSS software application. A cross-sectional survey of the quasi-experimental design, 5-point Likert scale structured questionnaire, probability simple random sampling technique, Taro Yamane's sample size determination formula, descriptive and inferential statistics with the aid of SPSS version 21.0 software application.	The research findings showed that a significant relationship exist between entrepreneurial mindset and organizational success of SMEs in Port Harcourt, Rivers State, Nigeria.	The study was carried out with selected SMEs in only two local government areas in Rivers State and its results cannot be generalized to other states, geopolitical zones as well as other countries and economic sectors.	This extant study involved Nigerian indigenous oil and gas service firms operating in selected states that make up Nigeria's South-South geopolitical zone.
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Source: Authors Desk Review, 2024.

3.0 Research Methodology

The study adopted survey research design. The study was based on a specific research objective, question and hypothesis in line with the identified research problem. The study which was at the organisational unit of analysis used a self-developed and administered five-points Likert scale questionnaire as instrument of data collection from management level respondents. The population of the study was 1827 Nigerian indigenous oil and gas service companies in selected South-South States, Nigeria obtained from Nigerian Content Development and Monitoring Board (NCDMB) approved register and Petroleum Technology Association of Nigeria (PETAN) membership directory. The study sample size was 328 determined through stratified and simple random sampling techniques using Taro Yamane's formula for sample size determination and Bowley's formula for proportional sample size allocation. The survey instrument reliability was determined with Cronbach's Alpha. The survey instrument was as well subjected to face, content and construct validity tests. Face validity test was based on expert opinions. Content validity test was established in line with independent and dependent variables of the study. The construct validity tests were determined with Pearson's r , Kaiser-Meyer-Olkin (KMO) measure of sample adequacy and Bartlett's Test of Sphericity before data analysis. Data gathered from the field work were analysed using descriptive and inferential statistics in Microsoft Excel Software Package version 2016 and IBM SPSS version 29 software application tools respectively. The descriptive statistics were in frequencies, percentages, means and standard deviations. Simple regression analysis was the inferential statistical technique used to test the research hypothesis at 0.05 level of significance which established the relationship between independent and dependent variables of the study.

4.0 Results and Discussion

The tabulated results of this study are shown and discussed under these sub headings: response rate, demographic information, reliability test, construct validity tests, descriptive statistics on strategic entrepreneurial mindset and productivity, bivariate correlation analysis and simple regression analysis results.

4.1 Response Rate

Table 4.1: Questionnaire Response Rate

Details	Particulars	Frequency	Percentage (%)
Questionnaire	Returned	292	89%
	Non-returned	36	11%
	Total distributed	328	100%

Source: Field Survey Data, 2024; Microsoft Excel, 2016 Output

Table 4.1 above shows that a total of 328 copies of questionnaire were administered to respondents in sampled companies, out of which 292 representing 89% were returned from the field work and found useable for data analysis. However, 36 copies of the questionnaire representing 11% were found unfit for data analysis because they were either not properly completed or not returned from the field. Therefore, the response rate of 89% was found adequately good for the purposes of data analysis for this study, thereby meeting the threshold of Allen. (2016) and Rindfuss et al., (2015) cited in Kariuki,

Wachira and Mwenda. (2022) who posited that a response rate of above 50% is adequate for descriptive and inferential analysis of a research.

4.2 Demographic Information

Table 4.2 below shows the result of demographic information about the respondents categorized as gender, age group, marital status, educational qualification, official designation, working experience, years of existence and organizational size and discussed as follows.

Table 4.2: Demographic Information of Respondents.

Details	Particulars	Frequency	Percentage (%)
Gender	Male	210	72%
	Female	82	28%
	Total	292	100%
Age Group	18 - 26 years	54	19%
	27 - 35 years	59	20%
	36 - 44 years	86	30%
	45 - 53 years	46	15%
	Above 54 years	47	16%
	Total	292	100%
Marital Status	Married	216	71%
	Single	76	29%
	Total	292	100%
Educational Qualification	NCE/Diploma	38	13%
	Degree	155	53%
	Masters	77	26%
	Doctorate	22	8%
	Total	292	100%
Official Designation	Executive Management	95	33%
	Senior Management	74	25%
	Middle Management	123	42%
	Total	292	100%
Working Experience	0 - 5 years	57	20%
	6 - 10 years	45	15%

	11 - 15 years	64	22%
	16 - 20 years	88	30%
	Above 21 years	38	13%
	Total	292	100%
	0 - 5 years	14	5%
	6 - 10 years	7	2%
Years of Existence	11 - 15 years	21	7%
	16 - 20 years	75	26%
	Above 21 years	175	60%
	Total	292	100%
Organisational Size	Small-sized 10 - 49 employees	53	18%
	Medium-sized 50 -199 employees	175	60%
	Large-sized 200 employees and above	64	22%
	Total	292	100%

Source: Field Survey Data, 2024; Microsoft Excel, 2016 Output

For the gender category, 210 respondents were males representing 72% of the total the total respondents while 82 respondents were females representing 28% of the total respondents. Since the respondents in this study were management level employees in the sampled firms, this shows that there were more male employees in management level positions than their female counterparts in most of the Nigerian indigenous oil and gas service companies in South-South States, Nigeria. This means that the female gender is under represented in management level positions in these firms. For the age group category, 54 respondents were within the age group of 18 – 26 years representing 19% of the total respondents. 59 respondents were in the age group of 27 -35 years representing 20% of the total respondents. 86 respondents were within the age group of 36 – 44 years representing 30% of the total respondents. 46 respondents were in the age group of 45 – 53 years representing 15% of the total respondents while 47 respondents were within the age group of above 54 years representing 16% of the total respondents. This analysis shows that management level positions in these firms are majorly occupied by youthful employees within the age group ranging from 18 years to 44 years. For the marital status category, 216 of the respondents were married representing 71% of the total respondents while 76 of the respondents were single representing 29% of the total respondents. For the educational qualification category, 38 respondents agreed to have attained NCE/Diploma educational certification representing 13% of the total respondents. 155 respondents expressed to have attained first degree educational certification representing 53% of the total respondents. 77 respondents agreed to have attained master’s degree educational certification representing 26% of the total respondents while 22 respondents expressed to have attained doctorate degree educational certification representing 8% of the total respondents. This analysis depicts that the greater number of management level employees in Nigerian indigenous oil and gas service companies in selected South-South States, Nigeria have first degree and above education qualification. For the official designation category, 95 respondents were in executive management level positions representing 33% of the total respondents. 74 respondents occupied senior management level positions representing 25% of the total respondents while 123 respondents held middle management level positions

representing 42% of the total respondents. For the working experience category, 57 respondents were within 0 – 5 years of working experience representing 20% of the total respondents. 45 respondents were within 6 – 10 years of working experience representing 15% of the total respondents. 64 respondents were within 11 – 15 years of working experience representing 22% of the total respondents. 88 respondents were within 16 – 20 years of working experience representing 30% of the total respondents. 38 respondents were above 21 years of working experience representing 13% of the total respondents. For the years of existence category, 14 respondents agreed that their firms were within 0 – 5 years of existence representing 5% of the total respondents. 7 respondents expressed that their companies were within 6 – 10 years of existence representing 2% of the total respondents. 21 respondents were of the opinion that their firms were within 11 – 15 years of existence representing 7% of the total respondents. 75 of the respondents agreed that their companies were within 16 – 20 years of existence representing 26% of the total respondents. 175 respondents expressed that their firms were above 21 years of existence representing 60% of the total respondents. For the organisational size category, 53 respondents agreed that their firms were small-sized with 10 – 49 employees representing 18% of the total respondents. 175 respondents expressed that their companies were medium-sized with 50 – 199 employees representing 60% of the total respondents. 64 respondents agreed that their firms were large-size with more than 200 employees representing 22% of the total respondents. The analysis of the organisational size depicts that majority of the Nigerian indigenous oil and gas service companies are small and medium-sized enterprises.

4.3 Reliability and Construct Validity Tests Results

Table 4.3: Reliability and Construct Validity Tests Results

					Reliability	Construct Validity					
S/No	Variables	Variables Code	Number of Items	Number of Respondents	Cronbach's Alpha	Pearson's r Count	Pearson's r Table 5% (292 - 2)	P-Value	KMO	Bartlett's Test of Sphericity	Sig.
1	Strategic Entrepreneurial Mindset	EM	5	292	0.83	0.540	0.195	0.000	0.809	637.471	0.000
5	Productivity	P	5	292	0.83	0.592	0.195	0.000	0.808	544.413	0.000

Table 4.3 above shows reliability test results for each of the two variables of the 5-points Likert-scale questionnaire used in obtaining the primary data of the study based on Cronbach's Alpha. As stated by Tavakol and Dennick, (2011) cited in Baridam and Govender, (2019), if Cronbach's Alpha test result ≥ 0.7 , the reliability is considered high; if Cronbach's Alpha test result ≥ 0.5 , the reliability is acceptable; if the Cronbach's Alpha test result ≤ 0.5 , the reliability is considered poor. The Cronbach's Alpha values of the study variables: strategic entrepreneurial mindset and productivity were 0.83 and 0.83 respectively, thus the results were acceptable as per the threshold given by Sekaran and Bougie. (2019) cited in Kariuki, Wachira and Mwenda. (2022) who stated that Cronbach's Alpha coefficient greater than or equal to 0.7 is acceptable for basic research. This shows that the Likert scale questionnaire items and statements have high reliability as the Cronbach's Alpha values are all higher than the recommended and acceptable values of ≥ 0.5 and ≥ 0.7 respectively. Also, Safali and Akpunar. (2020) explained that reliability can be seen from two sides: reliability (the extent of accuracy) and unreliability (the extent of inaccuracy).

The construct validity test result based on Pearson's r table with total sample size $N = 292$ at 0.05 level of significance and a degree of freedom of $N - 2$ i.e. r table at 5% ($292 - 2$) value = 0.195 shown in table 4.2 above indicated valid for the study variables. The Pearson's r and p-values for each of the study variables: strategic entrepreneurial mindset and productivity were 0.540(0.000) and 0.592(0.000) respectively. Therefore, the construct validity of the research instrument was established through Pearson's r as each study variable's Pearson's r count value is higher than the Pearson's r table value and p-value < 0.05 at 5% level of significance higher than the recommended 50% benchmark for Pearson's r validity test.

Again, factor analysis was used to test construct validity of the research instrument by using Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy and Bartlett's test of Sphericity with interpretive adjectives. The research instrument was discussed with academic and research experts from Federal University of Technology, Owerri (FUTO) who provided expertise and ensured the statements in the questionnaire measured the study variables. The KMO decision criteria is stated as follows: KMO value less than 0.5 is considered poor; KMO value between 0.5 and 0.6 is considered average; KMO value between 0.7 and 0.8 is considered good; KMO value more than 0.8 is considered excellent (Simon & Goes, 2016). From table 4.2 above, the KMO value for each variable is greater than 0.5 meaning that the questions actually measured the variables of the study. Similarly, Bartlett's test of Sphericity test whether the correlation matrix among the variables is an identity (where the diagonal values is 1, and the off-diagonal values is 0) with the level of significant in this case p-value of the test less than 0.05. This condition means that the study variables are completely independent of each other. Therefore, Bartlett's test of Sphericity value for each study variable has 0.000 significance which is less than 0.05 level of significance indicating that there is no highly significant relationship or correlations or coefficient among the variables in measuring the variables under study. Therefore, KMO and Bartlett's test of Sphericity results indicate that statements that comprised the research instruments of each variable actually measured what were intended to be measured.

4.4 Descriptive Statistics on Strategic Entrepreneurial Mindset

The questionnaire statements were scored based on 5-point Likert scale defined as follows: SA = Strongly agree (5), A = Agree (4), N = Neutral (3), D = Disagree (2) and SD = Strongly disagree (1). The 5-point scale has a mean value of 3.00 (5+4+3+2+1)/5 which is the bench mark mean for the questionnaire statements and study variables. The percentages are in parenthesis in the tabulated results.

Table 4.4: Descriptive Statistics on Strategic Entrepreneurial Mindset

S/No	Items Code	Strategic Entrepreneurial Mindset	Strongly disagree (%)	Disagree (%)	Neutral (%)	Agree (%)	Strongly agree (%)	Number of Respondents	Mean	Standard Deviation
1	SEM1	We consistently practice innovativeness in providing solutions to solve the problems of our customers.	1 (0.3)	1 (0.3)	12 (4.1)	163 (55.8)	115 (39.4)	292	4.3356	0.6067
2	SEM2	We passionately seek, recognize and explore new opportunities in our business environment.	0 (-)	2 (0.7)	8 (2.7)	147 (50.3)	135 (46.2)	292	4.4212	0.5838
3	SEM3	We are always ready to take quick actions in offering better products and services to our customers.	0 (-)	1 (0.3)	5 (1.7)	145 (49.7)	141 (48.3)	292	4.4589	0.5515
4	SEM4	We always scan and analyse our business environment for the problems and needs of our customers.	0 (-)	1 (0.3)	5 (1.7)	133 (45.6)	153 (52.4)	292	4.5	0.553
5	SEM5	We are creative in our approach in providing solutions to customers specific challenges.	1 (0.3)	2 (0.7)	2 (0.7)	124 (42.5)	163 (55.8)	292	4.5274	0.5885

Source: Field Survey Data, 2024; Microsoft Excel, 2016 Output

Percentages in Parenthesis

Table 4.4 above shows the descriptive statistics on strategic entrepreneurial mindset questionnaire statements in frequencies, percentages, means and standard deviations. For questionnaire statement SEM1, 0.3% of the respondents expressed both strongly disagree and disagree, 4.1% of the respondents were neutral, 55.8% and 39.4% of the respondents indicated agree and strongly agree respectively. The mean and standard deviation values of statement SEM1 were 4.3356 and 0.6067 respectively meaning that the variations in the respondents' opinions from the mean were small. For questionnaire statement SEM2, none of the respondents indicated strongly disagree, 0.7% of the respondents expressed disagree, 2.7% were neutral while 50.3% and 46.2% of the respondents showed agree and strongly agree respectively. The mean and standard deviation values of statement SEM2 were 4.4212 and 0.5838 respectively meaning that the variations in the respondents' opinions from the mean were small. For questionnaire item SEM3 statement, none of the respondents expressed strongly disagree, 0.3% of the respondents indicated disagree, 1.7% of the respondents were neutral while 49.7% and 48.3% of the respondents indicated agree and strongly agree respectively. The mean and standard deviation values of the respondents to questionnaire item SEM3 statement were 4.4589 and 0.5515 respectively meaning that the variations in respondents' opinions from the mean were small. For questionnaire item SEM4 statement, none of the respondents indicated strongly disagree, 0.3% of the respondents showed disagree, 1.7% of the respondents were neutral while 45.6% and 52.4% of the respondents expressed agree and strongly agree respectively. The mean and standard deviation values of this particular questionnaire statement SEM4 were 4.5 and 0.553 respectively meaning that the variations in respondents' opinions from the mean were small. For questionnaire statement SEM5, 0.3% and 0.7% of the respondents expressed strongly disagree and disagree respectively, 0.7% of the respondents were neutral to the statement while 42.5% and 55.8% of the respondents indicated agree and strongly agree respectively. The mean and standard deviation values of statement SEM5 were 4.5274 and 0.5885 respectively meaning that the variations in respondents' opinions from the mean were small.

4.5 Descriptive Statistics on Productivity

Table 4.5: Descriptive Statistics on Productivity

S/No	Items Code	Productivity	Strongly disagree (%)	Disagree (%)	Neutral (%)	Agree (%)	Strongly agree (%)	Number of Respondents	Mean	Standard Deviation
1	P1	We ensure increase in output of our production and operational processes.	0 (-)	1 (0.3)	2 (0.7)	150 (51.4)	139 (47.6)	292	4.4623	0.5327
2	P2	We spend less time in the delivery of products and services to customers.	0 (-)	0 (-)	0 (-)	122 (41.8)	170 (58.2)	292	4.5788	0.4946
3	P3	We minimize wastage of resources in our production and operational processes as well as in the delivery of products and services to customers.	0 (-)	1 (0.3)	2 (0.7)	140 (47.9)	149 (51.0)	292	4.4966	0.5341
4	P4	We use the same or less input factors for more outputs in our production and operational processes.	0 (-)	0 (-)	2 (0.7)	116 (39.7)	174 (60)	292	4.589	0.5066
5	P5	We are engaged in continuous improvement practices and exercises.	0 (-)	0 (-)	4 (1.4)	112 (38.4)	176 (60.3)	292	4.589	0.52

Source: Field Survey Data, 2024; Microsoft Excel, 2016 Output

Percentages in Parenthesis

Table 4.5 above shows the descriptive statistics on productivity questionnaire statements in frequencies, percentages, means and standard deviations. For questionnaire statement P1, none of the respondents expressed strongly disagree, 0.3% of the respondents indicated disagree respectively, 0.7% were neutral while 51.4% and 47.6% showed agree and strongly agree respectively. The mean and standard deviation values were 4.4623 and 0.5327 respectively meaning that the variations in the respondents' opinions from the mean were small. For questionnaire statement P2, none of the respondents showed strongly disagree, disagree and neutral while 41.9% and 58.2% of the respondents indicated agree and strongly agree respectively. The mean and standard deviation values were 4.5788 and 0.4946 respectively meaning that the variations in the respondents' opinions from the mean were small. For questionnaire statement P3, none of the respondents expressed strongly disagree, 0.3% of the respondents showed disagree, 0.7% were neutral while 47.9% and 51.0% of the respondents indicated agree and strongly agree respectively. The mean and standard deviation values were 4.4966 and 0.5341 meaning that that the variations of the respondents' opinion from the mean were small. For the questionnaire statement P4, none of the respondents showed both strongly disagree and disagree, 0.7% of the respondents were neutral while 39.7% and 60.0% of the respondents indicated agree and strongly agree respectively. The mean and standard deviation values were 4.589 and 0.5066 respectively meaning that the variations of the respondents' opinions from the mean were small. For the questionnaire statement P5, none of the respondents indicated both strongly disagree and disagree, 1.4% were neutral while 38.4% and 60.3% of the respondents expressed agree and strongly agree respectively. The mean and standard deviation values were 4.589 and 0.52 respectively meaning that the variations of the respondents' opinions from the mean were small.

4.6 Bivariate Pearson Product Moment Correlations of Strategic Entrepreneurial Mindset and Productivity.

The decision rule or criteria for bivariate Pearson Product Moment Correlations Coefficient (PPMCC) r , analysis for hypotheses testing on the strength and direction of the relationship between the study variables is reject the null hypothesis (H_0) if the p-value is ≤ 0.05 , otherwise accept the alternate hypothesis (H_a).

Table 4.6: Bivariate Pearson Product Moment Correlations of Strategic Entrepreneurial Mindset and Productivity.

		Strategic Entrepreneurial Mindset	Productivity
Strategic Entrepreneurial Mindset	Pearson Correlation	1	.202**
	Sig (2-tailed)		0.001
	N	292	292
Productivity	Pearson Correlation	.202**	1
	Sig (2-tailed)	0.001	
	N	292	292

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

Source: Field Survey Data, 2024; IBM SPSS, 29 Output

Table 4.6 above shows a bivariate Pearson Product Moment Correlations Coefficient of $r = .202$, $N = 292$ and a probability value of 0.001. The result indicates that there is a weak and positive significant relationship between strategic entrepreneurial mindset and productivity of Nigerian indigenous oil and gas service companies in selected South-South States, Nigeria. The coefficient of determination ($r^2 = 0.0408$) indicates that 4.0804% of productivity is explained by strategic entrepreneurial mindset to grow in size, scope and scale. This implies that 4.0804% of the respondents agreed that strategic entrepreneurial mindset to grow in size, scope and scale significantly determines the productivity of Nigerian indigenous oil and gas service companies in selected South-South States, Nigeria. Therefore, as stated in the decision rule or criteria, the null hypothesis (H_0) for this relationship which states strategic entrepreneurial mindset does not significantly relate to productivity of Nigerian indigenous oil and gas service companies in selected South-South States, Nigeria was rejected. In contrast, the alternate hypothesis (H_A) which states that strategic entrepreneurial mindset significantly relates to productivity of Nigerian indigenous oil and gas service companies in selected South-South States, Nigeria was accepted because the probability value of 0.001 was less than the critical value at 0.05 level of significant (2-tailed).

4.7 Simple Linear Regression Analysis Results of Strategic Entrepreneurial Mindset on Productivity.

According to Kothari & Garg. (2019) regression analysis decision criteria for interpreting test statistics, p -values and significance for hypothesis testing are as follows:

Decision Rule 1: The stated null hypothesis H_0 , was that there was no significant relationship between the response (dependent) and one or more predictor (independent) variables while the alternative hypothesis was that there was a significant relationship between the response (dependent) and one or more predictor (independent) variables. A big F , with a small p -value (< 0.05), meant that the null hypothesis was discredited or rejected and the alternate hypothesis was accepted which would assert that there was a significant relationship between the response (dependent) and one or more predictor (independent) variables. A small F , with a big p -value (> 0.05) indicated that there was no significant relationship between the response (dependent) and one or more predictor (independent) variables.

Decision Rule 2: Also, the null hypothesis H_0 , was that the value of the p -th regression coefficient was 0, and the alternate hypothesis H_A , was that it wasn't. A big t , with a small p -value meant that the null hypothesis H_0 , was discredited or rejected, and we would assert that the regression coefficient was not 0. A small t , with a big p -value indicated that it was not significantly different from 0.

Table 4.7: Summary of Simple Linear Regression Analysis Results of Strategic Entrepreneurial Mindset on Productivity of Nigerian Indigenous Oil and Gas Service Companies in Selected South-South States, Nigeria.

Number of Respondents	Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	R	R ²	Adjusted R ²	F-Value	Sig.	Durbin-Watson
		B	Standard Error	Beta								
292	(Constant)	3.742	0.230		16.300	0.001	0.202	0.04	0.037	12.312	0.001	1.786
	Strategic Entrepreneurial Mindset	0.180	0.051	0.202	3.509	0.001						

Dependent Variable: Productivity

Source: Field Survey Data, 2024; IBM SPSS, 29 Output

Table 4.7 above shows the summary of simple linear regression results on the effect of strategic entrepreneurial mindset on productivity of Nigerian indigenous oil and gas service companies in selected South-South States, Nigeria. The results revealed that strategic entrepreneurial mindset had significant effect on productivity of Nigerian indigenous oil and gas service companies in selected South-South States, Nigeria ($\beta = 0.180$, $t = 3.509$, $p < 0.05$). The t-value shows that the coefficient of the model parameter was statistically significant ($p = 0.001$). The regression analysis results also revealed that the coefficient of relative effect ($R = 0.202$) meaning that a weak and positive correlation exists between strategic entrepreneurial mindset and productivity. The coefficient of determination $R^2 = 0.04$ indicates that 4% of the variation in productivity of Nigerian indigenous oil and gas service companies in selected South-South States, Nigeria was explained by strategic entrepreneurial mindset. The regression coefficient of strategic entrepreneurial mindset was 0.180 which implied that a unit change in strategic entrepreneurial mindset causes to a positive change of 0.180 units in productivity of Nigerian indigenous oil and gas service companies in selected South-South States, Nigeria. Furthermore, table 4.7 showed the ANOVA result which revealed that overall, the explanatory power of the model was considered statistically significant with the F-statistic value output of the regression analysis model reporting a p -value of 0.001 ($F = 12.312$, $p < 0.05$).

Therefore, the null hypothesis H_0 , which states that strategic entrepreneurial mindset does not significantly affect productivity of Nigerian indigenous oil and gas service companies in selected South-South States, Nigeria was rejected. Meanwhile, the alternate hypothesis H_a , which states that strategic entrepreneurial mindset significantly affect productivity of Nigerian indigenous oil and gas service companies in selected South-South States, Nigeria was accepted. This result is consistent with the findings of Nkem and Onuoha. (2023) who established that entrepreneurial mindset had a significant and positive effect on organisational effectiveness of manufacturing firms in Port Harcourt, Rivers State, Nigeria. Also, this result is in agreement with the findings of Kariuki, Wachira and Mwenda. (2022) that a significant and positive relationship exist between entrepreneurial mindset and innovation by 1-3 star rated hotels in Kenya. Additionally, this result is in accordance with the findings of Yunusa and Abubakar. (2020) which established that entrepreneurial mindset has significant impact on micro, small and medium enterprises sustainability in Mubi local government area of Adamawa State, Nigeria. Again, this result is consistent with the findings of Bayo and Red-Well. (2020) who established that disruptive technologies have positive and significant relationship with productivity in the soft drinks manufacturing firms in the South-South region of Nigeria. Furthermore, this result is in agreement with Ruth, Jaja and Ukoha. (2018) who found that a positive and significant relationship between entrepreneurial mindset and human capacity building in small and medium scale businesses in Port Harcourt. This result is in tandem with the findings of Asenge, Diaka and Soom. (2018) who established that entrepreneurial mindset dimensions of innovativeness, creativity, business alertness and risk-taking significantly affected performance of SMEs in Makurdi Metropolis, Benue State, Nigeria. Moreover, this result is in accordance with the findings of Adokiye, Alagah and Onuoha. (2017) who found that a significant relationship exists between entrepreneurial mindset and organisational success of SMEs in Port Harcourt, Rivers State, Nigeria.

5.0 Conclusion and Recommendations

The study concludes that strategic entrepreneurial mindset to grow in size, scope and scale had significant and positive influence on the productivity of Nigerian indigenous oil and gas service companies in selected South-South States of Nigeria.

Based on the study findings, the study recommends the followings among others:

- i. Owners/managers and employees of Nigerian indigenous oil and gas service companies should have entrepreneurial mindset to manage and grow their

- companies in size, scope and scale since it was discovered to significantly and positively influence productivity.
- ii. Owners/Managers of Nigerian indigenous oil and gas service firms should promote gender equity and inclusiveness by promoting qualified female employees into management positions in line with sustainable development goal of gender diversity and inclusion.

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