

Entrepreneurial Culture of Technology Innovation and Customer Satisfaction of Indigenous Oilfield Services Companies in Selected South-South States, Nigeria

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Abstract: This study assessed the influence of entrepreneurial culture of technology innovation on customer satisfaction of indigenous oilfield services companies in selected South-South States, Nigeria. The study adopted descriptive cross-sectional survey research design based on specific research objective, question and hypothesis aligned with the research problem. The study used a self-developed five-points Likert scale questionnaire as instrument of data collection from respondents. The study population was 1827 indigenous oilfield services companies in selected South-South States, Nigeria obtained from Nigerian Content Development and Monitoring Board (NCDMB) approved register. The study sample size was 328 obtained using Taro Yamane's formula for sample size determination and proportionally allocated with Bowley's formula. Microsoft Excel Software Package version 2016 and International Business Machine Statistical Packages for the Social Sciences (IBMSPSS) version 29 software application tools were used in computing data for descriptive and inferential results. The results showed that entrepreneurial culture of technology innovation significantly and positively influenced customer satisfaction of indigenous oilfield services companies in selected South-South States, Nigeria. The study concludes that entrepreneurial culture of technology innovation had significant positive influence on customer satisfaction of indigenous oilfield services companies in South-South States, Nigeria.

Keywords: Entrepreneurial Culture, Technology Innovation, Customer Satisfaction, Indigenous Oilfield Services Companies, South-South States.

I. Background Information

In most natural resource-rich dependent and mono-product developing economies like Nigeria, social and economic development, Gross Domestic Product (GDP) growth, poverty reduction and job creation largely depend on the success of their extractive industries and associated services firms. A mono-product economy refers to an economy mainly dependent on a single product or resource for economic growth and development. It could be further referred to as a situation where a country depends on a single product for sales or exports for its budget funding especially to the tune of seventy percent of revenue. Nonetheless, Nigeria today could be described as a mono-product economy dominated by petroleum resources as the major foreign exchange earner which accounts for about seventy-nine percent from crude oil and fifteen percent from natural gas, a third of banking sector credit, and more than half of government revenues, even though petroleum sector accounts for approximately six percent of her GDP (Asif et al, 2020; Ojha, Vij and Vrat, 2014). Though, petroleum resources contribution is less than six percent to Nigeria's Gross Domestic Product (GDP), it still remains the nucleus of the nation's economy with over ninety percent of foreign exchange earnings and government revenues from crude oil and natural gas sales. Prior to the advent of Nigerian Oil and Gas Industry Content Development (NOGICD) Act in 2010, most Nigerian entrepreneurs with interest and requisite industry expertise and experience found it very difficult accessing the massive local business opportunities existing in the industry due to specific international and technical entry barriers (Udok, Udofia and Okunbolade, 2020; Ocheni, 2015). However, with the passage of Nigerian Oil and Gas Industry Content Development (NOGICD) Act also known as the "Nigerian Local Content Policy" in 2010 and the setting up of the appropriate structures for its implementation through the Nigerian Content Development and Monitoring Board (NCDMB), provided the needed entry opportunities and encouragement for Nigerian entrepreneurs with relevant oil and gas industry knowledge, experience, expertise and skills to go into business in this critical sub-sector of the economy (Udok, Udofia and Okunbolade, 2020; Ocheni, 2015). The creation, adoption and progressive implementation of the Nigerian Local Content Policy in the oil and gas industry is seen as a strategy to increase the participation of indigenous entrepreneurs in the supply and value chain of the sector. Indigenous entrepreneurs and managers in this sector are expected to adopt certain scientific management and innovative techniques like strategic entrepreneurship to achieve sustainable competitive advantage supported by creativity and innovation in taking full advantage of opportunities to outperform rivals in the market place. Despite existing related studies and their findings on entrepreneurial culture of technology innovation and customer satisfaction in various contexts, the subject has remained inconclusive and hugely debatable. A variety of industries, economic sectors and geographical locations were used in earlier research conducted in other parts of Nigeria and the world, none of these past studies were on entrepreneurial culture of technology innovation and customer satisfaction of indigenous oilfield services companies in selected South-South States, Nigeria. As stated by Miles (2017) cited in Ugwu and Igbo (2021), new research gaps can be identified and developed based on evidence, knowledge, methodology, scope, theories, and population gaps. These researchers have established gaps in terms of

study concept, methodology (research design, population, sample size and sampling techniques, data classification and analytical techniques), scope (content, geographic coverage and unit), and empirical studies. These identified gaps in literature are what the present study seeks to fill by proffering feasible solutions, make valuable contribution to the body of knowledge with practical policy implication for implementation.

Therefore, to address these research gaps, this study intends to assess the influence of entrepreneurial culture of technology innovation as the independent variables on customer satisfaction as the dependent variables of indigenous oilfield services companies in selected South-South States, Nigeria.

Problem Statement

The indigenous oilfield services companies are uncomfortable incorporating new ideas and creative initiatives into their businesses and operational processes. They avoid taking risks by their reluctance in trying out and adopting new ideas, inventions, innovations and are less proactive than their international oilfield services competitors in exploring new opportunities in the market. There is near absence of collaborations and linkages between most of the indigenous oilfield services companies with external research, development and innovation centres like the Universities, Polytechnics, other research and training institutions and centres as well as the industry's regulatory and professional bodies.

The companies suffer from low industrial and infrastructural base, low technological capacity environment, irregular assessment of research and development needs, low investment in localized solutions driven by scientific, technological and innovative research and development (R&D) programmes and projects.

Also, there is the problem of annual capital flight in the procurement and importation of foreign oil and gas materials, hard and software technology, and loss of job opportunities to foreign and offshore located firms and businesses. It is estimated that Nigeria spends more than US\$400 million annually on foreign software, which is a huge drain on the country's foreign exchange (Nigeria Content Development and Monitoring Board, NCDMB, 2023).

The unwillingness of Nigerian entrepreneurs in this sector to embrace the culture of technology innovation driven by creativity and innovativeness present both tactical and strategic challenges to most of these indigenous oilfield services companies operating in South-South States of Nigeria which this study intends to empirically examine.

Research Objective

The study specifically assessed the influence of entrepreneurial culture of technology innovation on customer satisfaction of indigenous oilfield services companies in selected South-South States, Nigeria.

Research Question

How does entrepreneurial culture of technology innovation influence customer satisfaction of indigenous oilfield services companies in selected South-South States, Nigeria?

Research Hypothesis

H₀: Entrepreneurial culture of technology innovation does not significantly influence customer satisfaction of indigenous oilfield services companies in selected South-South States, Nigeria.

The remainder of this paper is structured as follows: Section II reviews literature while Section III discusses research method, Section IV presents results and discussions, Section V contains conclusion and recommendations, Section VI explains research implications, limitations and suggestions for future studies.

II. Literature Review

Entrepreneurial Culture of Technology Innovation

Entrepreneurial culture is a term derived from two words 'entrepreneurship' and 'culture'. The concept of entrepreneurial culture has existed for decades and described as an organizational culture embodying entrepreneurial characteristics and attributes. These characteristics are elements one would expect to see among entrepreneurs as individuals (Ukenna et al. 2019). The term entrepreneurial culture is an adjective describing how the entrepreneurs undertake what they do and particular style used in doing them (Zouhayer, 2013). According to Brownson (2011) culture is defined as attributes, values, beliefs and behaviours which can be learned or acquired by man from one generation to another, from one individual to another, from one group to another as long as one is a member of the society and it has the ability of distinguishing one group from another. It means the nurturing of certain attributes, values, beliefs and behaviours indicate attempts to foster certain types of culture (Ukenna et al. 2019). Entrepreneurial culture is a condition in which new ideas and creativity are expected, taking risk is encouraged, failure is tolerated, learning is encouraged, innovations about products, processes and management are defended and a continuous change is accepted as the carrier of opportunities (Arokadare et al. 2020; Dogan, 2015; Foss & Lyngsie, 2011). Entrepreneurial culture is a strategic tool that strengthens the small and medium sized firms' activities and improves firms' performance. It encourages failure tolerance, risk taking culture and creativity (Kabuoh et al. 2017). Entrepreneurial culture is an integral part of the entrepreneur which is

assimilated as a powerful entrepreneurial tool. A culture of entrepreneurship is one in which search for venture opportunities permeates every part of the organization (Nhut and Kapofu, 2015). According to Naranjo-Valencia et al. (2011) entrepreneurial culture is a determining key of the strategy of technology and innovation and in effect, organizations should promote values and standards according to their strategic choices. Therefore, entrepreneurial culture as stated by Foss and Lyngsie (2011) captures the firms' motivation and ability to engage in the discovery of opportunities and the exploitation of those opportunities that are highest in value and wealth creation. Entrepreneurial culture is a positive collective programming of the mind or an aggregate psychological trait of the people oriented toward entrepreneurial values such as individualism, independence and achievement (Draghici et al. 2014; Ukenna et al. 2019). Therefore, entrepreneurial culture is a multi-dimensional construct of strategic entrepreneurship in terms of where new ideas and creativity are expected, taking risks is encouraged, failure is tolerated, learning is encouraged, innovations about products, processes, and management are defended, networking in terms of alliances, partnerships, joint venture, collaboration and cooperation are encouraged, and a continuous change is accepted as windows of opportunities.

Customer Satisfaction

Customer satisfaction refers to customers' evaluation of products and services after purchase and use as against their expectations (Sayani, 2015). Chang (2010) defines customer satisfaction as a judgment for the difference between the quality of the products and services and customers' own expectations. Customer satisfaction means that the customers' feelings about their expressed demands and expectations have been fulfilled. Customers will be satisfied if the products and services perform above demands and expectations and on the other hand, customers will be dissatisfied if the products and services perform below demands and expectations (Ukenna et al., 2019). All these definitions of customer satisfaction are in line with the cognitive based school of thought which argues that satisfaction with products and services is an outcome of pre-purchase expectations and disconfirmation (Oliver, 2010). Meaning that if the perceived performance of the products and services meet and exceed expectations of the customer, the outcome is positive disconfirmation and if the performance of the products and services is below expectations, the result is negative disconfirmation (Ukenna et al. 2019). Positive disconfirmation allows for repeat purchase, loyalty, continuity and growth while negative disconfirmation results in discontinuity and negative word of mouth. Customer satisfaction is a major factor contributing to the success of all firms. Customer satisfaction has been considered as a crucial factor influencing customer expectations and loyalty which are important at global competition (Kumar, 2015). Winning in today's competitive market place entails the need to build customer relationship and not just building products and providing services. Building customer relationship means delivering superior value over competitors to target customers (Krajnakova, Navikaite and Navickas, 2015). The quality of products and services provided by an organization will depend on the customers' feedback on the levels of satisfaction they derive from consuming the products and services. It is acknowledged that higher levels of quality lead to higher levels of customer satisfaction. Customer satisfaction is one of the most important issues concerning business organization of all types which is justified by the customer oriented philosophy and the principles of continuous improvement in modern business enterprises (Arokiasamy, 2013). Therefore, this study conceptualized customer satisfaction as a multi-dimensional measure of customer loyalty, customer experience, customer expectations, customer feedback and customer relationship.

Research Conceptual Framework

The researchers developed conceptual framework for measuring the parameters of Entrepreneurial Culture of Technology Innovation (ECTI) as independent variable and Customer Satisfaction (CS) being the dependent variable of indigenous oilfield services companies in selected South-South States, Nigeria as shown in Figure 1

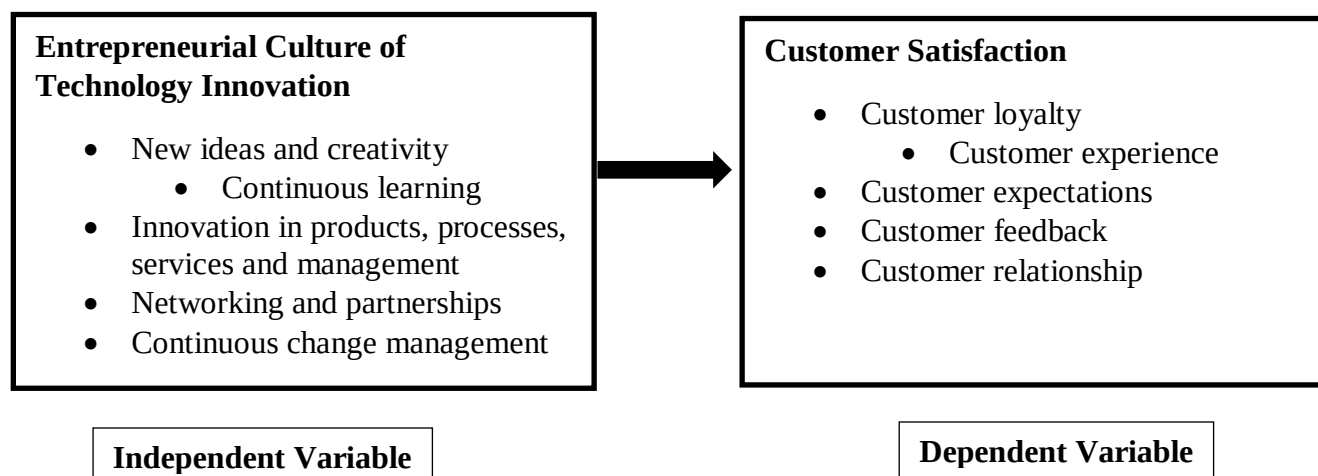


Figure 1: Conceptual Framework

Theoretical Review

Innovation Theory

Schumpeter theory of Economic development on innovation was propounded by Joseph Schumpeter in 1949. This theory believes that individuals possess mental and creative ability to convert innovative ideas to economically viable products and services that meet the demands of the people in any society. This assertion is premised on the fact that business environment changes over time and exerts considerable influence on the operations and performance of businesses. The theory argues that entrepreneurs are risk takers and their innovative ideas are orchestrated based on their pro-activeness in the environment. Although, environmental factors are succinctly external to them but responding to the environmental factors calls for logical understanding on the interplay of those factors for sound decision making. The theory therefore, posits that being proactive to the business environment help entrepreneurs to secure and sustain greater operational effectiveness and efficiency that give them greater leverage for improved operational performance. Meanwhile, the theory describes entrepreneurs as visionary change management agents who introduce new economic activity that leads to a change in the marketplace and business environment (Ukenna et al. 2019).

In effect, the creative activity of an entrepreneur is independent of the organizational or legal setting in which he or she may operate. Second, entrepreneurship is not a profession and it is not a long-lasting state. The kind of business an entrepreneur is doing perhaps does not matter, what matters is linking the market needs with innovation. Third, Schumpeter portrayed entrepreneurs as individual that add values to their businesses. For example, carving out a niche in the marketplace that distinguishes you from others. The entrepreneur breaks up with established practices and destroys the status quo while moving the market forward in a different direction (Ukenna et al. 2019). Therefore, the innovation theory is valuable to this study in assessing the influence of entrepreneurial culture of technology innovation on customer satisfaction of indigenous oilfield services companies in selected South-South States, Nigeria.

Learning Theory

Another theory this study was anchored on is the learning theory proposed by Barney in 1986 with its emphasis on the way a firm builds its knowledge-base over time and positions its stock of knowledge for survival and growth which includes the creation of value and wealth through innovation (Ketchen, Ireland and Snow, 2007) cited in Adeyeye, Wale-Oshinowo and Ayeni (2020). This assertion has been pursued under different tags, including organizational learning, the knowledge-based view and knowledge management. Learning organizations such as knowledge intensive businesses (KIBs) for which the oil and gas industry particularly the oilfield services arm is part of are entrepreneurial organizations that facilitate creativity and innovativeness, encourage research and development, innovations, systematic problem-solving, experimentation, tolerate failures, execute best practices as well as engage in knowledge transfer which are key characteristics of entrepreneurial culture of technology innovation (Bahareh, Mir and Mahmoud, 2011). Therefore, knowledge intensive businesses including indigenous oilfield services companies are learning organizations and adaptive firms in pursuit of optimal performance in their operational and business activities (Adeyeye, Wale-Oshinowo&Ayeni, 2020).

The learning theory maintains that for businesses to remain viable in an environment characterized by turbulent such as volatility, uncertainty, complexity and ambiguity, organizations and individuals alike can only survive by depending upon their ability to learn from previous good and bad events. As yesterday's knowledge and skills are vulnerable to obsolescence, and future success requires flexibility, pro-activeness, responsiveness and new capabilities. Yet, psychological organizational factors conspire to make organizations and their members resistant to change thereby missing opportunities that would have assisted in creating preferred futures for the organizations. This theory supports the fact that indigenous oilfield services companies can be likened to organizations that need to look back at their strategies and adopt modern practices that can improve overall performance and support government in tackling the socio-economic trilemma of unemployment, poverty and insecurity. Therefore, the learning theory is valuable to the current study in explaining the influence of entrepreneurial culture of technology innovation on customer satisfaction of indigenous oilfield services companies in selected South-South States, Nigeria. Though, the innovation theory and learning theory were reviewed in support of this study, its theoretical foundations and concepts was specifically based on innovation theory.

Empirical Review

Entrepreneurial Culture of Technology Innovation and Customer Satisfaction

An applied study carried out by Mehralian and Khazaei (2022) using a descriptive survey research design analyzed the interrelationships among absorptive capacity, marketing intelligence and entrepreneurial culture and their impacts on the performance of telecommunications companies in Iran. The sample size used for the study was 375 respondents selected using stratified random sampling technique from all the telecommunications firms operating in Iran. A 5-point Likert scale structured questionnaire adapted from previous related studies and modified according to the settings and objectives of this quantitative research was used in obtaining the primary data from respondents. The convergent validity and reliability characteristics of the study constructs and measurement model were tested using factor loadings, average variance extracted (AVE), Cronbach's Alpha coefficient, and composite reliability (CR). The collected data were analyzed using descriptive statistics (frequencies and percentages) and inferential statistics for testing the research hypotheses in partial least squares structural equation modelling

(PLS-SEM) as multivariate analysis technique. The research findings showed that marketing intelligence had a significant effect on performance and absorptive capacity of telecommunications companies in Iran while entrepreneurial culture had a significant effect on performance as well as absorptive capacity of telecommunications companies in Iran. The study recommended that marketing managers of telecommunications firms should be equipped with the operational strategies to improve their organizational performance especially with respect to implementing the principles of absorptive capacity, marketing intelligence and entrepreneurial culture in their organization. The study was carried out among selected telecommunications firms in Iran. The extant study was focused on indigenous oilfield services companies in randomly selected South-South States, Nigeria.

Moreover, Poi (2020), using a qualitative approach as well as a desk research methodology conceptually examined the role of entrepreneurial culture for business venture success through systematic review of extant literature. The study discussed five dimensions of entrepreneurial culture which are organization enthusiasm, stakeholder alignment, learning and development support, opportunity driven change and cohesiveness. It also reviewed entrepreneurial attributes, entrepreneurial values, entrepreneurial mindset and entrepreneurial behaviour as constituents of entrepreneurial culture. The study findings suggested that entrepreneurial culture is related to a number of positive organizational outcomes, such as creating new business ventures and improving firm performance. The study therefore recommended that both public and private organizations should imbibe the concept of entrepreneurial culture to promote entrepreneurship which is the creation of new business ventures or start-ups or entrepreneurial behaviour/action for unemployment reduction through job creation. This study was a generic systematic and qualitative conceptual review based on existing literature and lacked theoretical and empirical foundations as well as quantitative primary data for analysis and cannot be generalized to any other sectors within and outside Nigeria. The current study was anchored on conceptual, theoretical, empirical foundations and generated quantitative primary data for empirical analysis using appropriate analytical tools suitable in achieving the research objective.

Adeyeye, Wale-Oshinowo and Ayeni (2020) also carried out a quantitative empirical study employing the descriptive survey research design on the impact of entrepreneurial culture as a deterrent to corruption on information and communication technology (ICT) firms' performance in Minna Metropolis, Niger State, Nigeria. The researchers used a 5-point Likert scale measurement instrument of structured questionnaire adapted from previous related studies to generate primary data from a sample size of 150 respondents drawn from the population. Purposive sampling technique was used by the researchers in selecting respondents while validity and reliability tests of the survey instrument were performed using appropriate techniques. The obtained data were analyzed using descriptive statistics (percentages) and inferential statistics (multiple linear regression analysis). The research findings revealed that innovativeness, experimentation and accountability as dimensions of entrepreneurial culture had positive and statistical significant impact on ICT firms' performance at five percent level of significance. The study therefore recommended that ICT firms should adopt holistically the entrepreneurial culture as the organizational culture. Also, the study recommended that ICT firms should include cost of innovativeness, experimentation and accountability in their strategic budget. It as well recommended that ICT firms should demand for accountability of all resources through regular and proper inventory for transparency from top to bottom level of the organization. This study used purposive sampling technique which limits the generalization of its findings to other economic sectors, states, geopolitical regions of Nigeria as well as other countries. This present study utilized stratified proportional sample size allocation and random sampling techniques.

Also, Bunagan and Sison (2019) carried out a quantitative study using a descriptive correlation research design examined the influence of entrepreneurial culture and orientation on the development of entrepreneurial performance in the Kingdom of Bahrain. The study used a sample size of 60 respondents (i.e. 40 SME owners/managers and 20 SME staff) randomly selected from among SMEs in the Kingdom of Bahrain. Primary data for the study was obtained from selected respondents by using a 5-point Likert scale measurement instrument of structured questionnaire. The data were analyzed with descriptive statistics (frequencies, percentages and weighted mean) and inferential statistics (correlation analysis). The study found that the two groups of respondents, that is, SMEs owners/managers and staff showed no significant difference in their perceptions on the five entrepreneurial culture and orientation indicators: self-reliance, mental toughness, power distance index, avoidance and long-term orientations. The study recommended that government should foster the creation of more companies, spread innovation through trainings and initiate economic entrepreneurial activities. The study as well recommended that policy makers and business leaders should identify the lacking elements of the entrepreneurial aspects which include an entrepreneurial culture, regulatory framework, infrastructure, equity investors, financing for small and medium-sized enterprises, and formal education in entrepreneurship. The study was carried out among selected SMEs in the Kingdom of Bahrain making its findings difficult to be generalized to other economic sectors and countries. The extant study was focused on indigenous oilfield services companies in randomly selected South-South States, Nigeria.

Danish, Asghar, Ahmad and Ali (2019) using descriptive survey research design empirically evaluated factors affecting entrepreneurial culture as well as the mediating role of creativity in information technology (IT) firms in Lahore, Punjab Province, India. The sample size of the study was 300 respondents which consisted of individual employees, managerial and non-managerial level using non-probability and convenience sampling techniques as the exact number of employees were known. The primary data were collected with a 5-point Likert scale questionnaire self-administered to the sampled respondents. Statistical Package for the Social Sciences (SPSS) version 21.0 software application was used for data entry and descriptive statistics while

the inferential analysis was carried out in Analysis of a Moment Structures (AMOS) version 22.0 software application for structural equation modelling. The research findings showed that there were significant direct relationships among the variables such that openness to change and self-efficacy had positive impact on entrepreneurial culture as well as significant indirect relationship in the presence of creativity as a mediator. The researchers recommended that employees should focus on practicing and learning skills that would increase their self-efficacy enabling them effectively and efficiently perform their assigned tasks. The researchers as well recommended that learning opportunities like seminars, trainings and conferences should be provided to employees to increase their self-efficacy. Again, the researchers recommended that competitive atmospheres that welcome suggestions and reward new ideas from employees should be created in organizations. The study was among selected IT firms in Lahore, Punjab Province, India using non-probability and convenience sampling techniques which limits the generalization of its findings to other economic sectors as well as other countries. The current research involved indigenous oilfield services companies in randomly selected South-South States, Nigeria with simple random sampling techniques.

Furthermore, Prasetyo (2019) carried out a research on the role of entrepreneurial culture as the driver of economic growth of micro, small and medium enterprises (MSMEs) in Central Java Province, Indonesia. The study used a sample size of 137 respondents randomly selected from a population of 585 business actors. The primary data were obtained through survey while recursive econometric model of path analysis was employed to analyze the generated data. The research findings revealed that entrepreneurial culture positively and significantly influenced competition while entrepreneurial networking negatively and non-significantly influenced competition. Also, entrepreneurial culture positively and significantly influenced regional economic growth of MSMEs in Central Java, Indonesia. The study recommended that policy on economic development in developing economies should be based on function and role to enhance entrepreneurial and MSMEs capacity to drive economic growth for peoples' prosperity. The study lacked theoretical foundation making its findings difficult for generalization to other sectors and countries. This extant research was supported by innovation theory and learning theory.

However, in their study, Leal-Rodriguez, Albort-Morant and Martelo-Landroguez (2018) using a survey research design empirically investigated the links between entrepreneurial culture, innovation and business performance as well as the mediating role of family firms in the automotive components manufacturing industry in Spain. The study utilized a sample size of 418 firms drawn from a population of 906 companies registered with the Spanish Association of Manufacturers of Equipment and Components for the Automotive Industry database. A 7-point Likert scale measurement instrument of structured questionnaire adapted from previous related studies was used in obtaining data from sampled respondents. The research measurement model was evaluated for validity and reliability. The generated primary data were analyzed using partial least squares (PLS), a variance-based structural equation modelling (SEM) method in SmartPLS 2.0 software application. The study findings showed that entrepreneurial culture within family firms positively and significantly increases innovation processes and business performance in the Spanish automotive components manufacturing industry. The study therefore recommended that managers of family businesses fostering an entrepreneurial culture should be considered as facilitators of organizational innovativeness. The study as well recommended that managers of family business should stimulate the characteristics of innovation and entrepreneurship that may reinforce the establishment and development of synergies and knowledge sharing. The findings of this research could not be generalized to other economic sectors and countries as it was done within a specific economic sector (the automotive components manufacturing industry and a specific geographical scenario Spain). The extant study took place among indigenous oilfield services companies in randomly selected South-South States, Nigeria.

The study carried out by Koitamet and Ndemo (2017) using a descriptive research design determined the effect of entrepreneurial culture on the performance of social entrepreneurship firms in Kenya. A sample size of 79 employees selected using a stratified random sampling technique in R software was drawn from a population of 448 employees of Iko Toilet and Care Kenya. The study used a 5-point Likert scale structured questionnaire in obtaining quantitative primary raw data from the sampled employees of Iko Toilet and Care Kenya. The raw data obtained from the field survey were coded, scrutinized, organized and edited which enhanced and hastened analysis by the use of Statistical Package for the Social Sciences (SPSS). The data were analyzed in SPSS for descriptive statistics (frequencies, percentages, mean and standard deviation) and inferential statistics (Spearman's rank order correlation coefficient r , and regression analysis). The study established that entrepreneurial culture had a positive and significant relationship with the performance of social entrepreneurship firms in Kenya. The study recommended that all social entrepreneurship firms should use planning in forecasting in their activities to boost their performance. Also, entrepreneurship firms should ensure effective control of activities in their enterprise and there should be a clear structure of management in all social entrepreneurship firms. It as well recommended that employees of social entrepreneurship firms should be well trained in their areas of operations to improve their performance. The study geographic and unit scope were Kenya and social entrepreneurship firms respectively which limits the generalization of its findings to other economic sectors and countries. The geographic and unit scope of this present study were four randomly selected states in South-South, Nigeria and indigenous oilfield services companies.

Kabuoh et al., (2017) examined the effect of entrepreneurial culture on the performance of SMEs in Lagos State, Nigeria. The study adopted a theoretical approach as information were generated from textbooks, journals, magazines and some influential opinions. The study findings showed that entrepreneurial culture had a great effect on performance of SMEs in Lagos State, Nigeria measured by customer Satisfaction. The study recommended that SMEs should imbibe entrepreneurial culture of

creativity and innovations that would yield enhanced performance and sustain the economic development of developing nations like Nigeria thereby putting to an end the dependency syndrome. The study was a theoretical review with findings, conclusion and recommendations not supported with empirical data and this makes its generalization difficult. This present study used descriptive cross-sectional survey research design approach to generate quantitative primary data for analysis using appropriate data analytical techniques and tools.

Atiku and Fields (2016) using a cross-sectional descriptive research design analyzed the relationship between entrepreneurial culture and sustainable competitive advantage in the Nigerian banking sector. The study was carried out with a sample size of 380 respondents drawn from a population of 5387 employees in five selected branches of the participating commercial banks in Lagos using simple random sampling technique. The convenience sampling method was used in the distribution of copies of a 5-point Likert scale structured questionnaire adapted from previous related studies to respondents for data collection. The primary data obtained from the field survey were analyzed using descriptive statistics (mean and standard deviation) and inferential statistics for testing the formulated research hypotheses with two statistical software application packages. The International Business Machine Statistical Package for the Social Sciences (IBMSPSS) version 23.0 was valuable in running bivariate correlation analysis between the variables as well as statistical reliability and validity of the measuring instrument. The IBMSPSS AMOS version 23.0 was also instrumental in running structural equation modelling (SEM). The results of the research showed that entrepreneurial culture had a positive relationship with human resource development and sustainable competitive advantage in the Nigerian banking sector. Also, the findings showed that human resource development partially mediated the relationship between entrepreneurial culture and sustainable competitive advantage in the Nigerian banking sector. The study recommended that the sustainability of banks operating in Nigeria could be achieved by communicating and managing entrepreneurial culture through effective learning and development programmes for employees. The study as well recommended that for sustained competitive advantage, ambidextrous banks would need creativity, innovation and proactive capabilities in the process of exploiting and exploring current and future business opportunities. The findings of the study cannot be generalized to other economic sectors and countries because it used a convenience sampling technique. This present study used a combination of stratified and simple random sampling techniques.

Meanwhile, Chivasa (2014) using a case study approach empirically examined entrepreneurial culture among SMEs in Bulawayo Metropolitan Province, Zimbabwe. The study utilized both secondary and primary data. The secondary data was sourced from Zimbabwe Revenue Authority (ZIMRA) with respect to registered SMEs. The sample size of the study was 80 respondents which were selected using stratified and simple random sampling techniques. Data were obtained from randomly selected respondents by combination of a 5-point Likert scale measurement questionnaire and personal interviews. The data were analyzed using descriptive statistics. The research findings showed that most SMEs in Bulawayo, Zimbabwe failed to grow due to lack of entrepreneurial culture among which were: poor financial management, unqualified personnel including the owners/managers, weak networking in terms of collaboration and alliance partnership by owners/managers, lack of research and development resulting to no innovation and injection of new ideas into the business, little or no consultation by the owners/managers when making decisions, no trust between the owners/managers and their employees, financial transactions and matters are mainly handled by the owners/managers who in most cases do not have financial management knowledge, skills and competence, most SMEs have no strategic plan which makes it difficult to devise strategies to combat competition in highly competitive markets and external factors which are both local and international in dimension like economic crisis and liquidity crisis. The study recommended that there was need for the government to initiate policies that would enable SMEs to raise capital needed without jeopardizing their business. The study as well recommended that SMEs owners/managers and employees should undergo corporate entrepreneurship training to enable them acquire some of the skills and competencies like networking, people management skills, problem solving skills, technical skills in their areas of specialization, innovation skills, customer care and new products and services designs. This study was confined to Bulawayo Metropolitan Province in Zimbabwe which limited the generalization of its findings to the rest of the country and other economic sectors, thus the fallacy of composition. The data obtained from field work were not subjected to hypotheses testing which as well limited the generalization of the study findings and conclusion. The present study involved the empirical testing of the research hypothesis using simple linear regression, analysis of variance (ANOVA) and t-test analytical techniques in IBM SPSS version 29 software application.

Pantouvakis and Bouranta (2013) using a theoretical framework they developed conducted an empirical study across different service sectors (port, supermarket and automobile repair services) to investigate the interrelationships between organizational learning culture, employee job satisfaction and their impact on customer satisfaction. The study also examined an individual level variable (educational level) to see if it exerted moderating effects on the relationships between organizational learning culture, employee job satisfaction and their impact on customer satisfaction. A structured questionnaire was used to collect data from employees in three companies that belong to different service sectors (port, supermarket and automobile repair services). A sample of 437 usable copies of questionnaire from first line employees was collected. Regression analysis, including a moderated mediation analysis, was used to examine the relationships. The study results revealed the mediating role of employee job satisfaction on the relationship between organizational learning culture and customer satisfaction. Additionally, the research empirically supported the idea that the indirect effect of organizational learning culture on customer satisfaction via employee job satisfaction will be stronger when employee education is at a high level than when employee education is at a lower level. The study therefore recommended that when employees are supported by their organizations' learning culture, not only are they

provided with new knowledge and skills, but they are also more likely to be satisfied by their jobs. This motivates them to offer high-quality products and services that will satisfy their customers' needs. The study geographic and unit scope were Greece and involving firms in three different service sectors (port, supermarket and automobile repair services) respectively which limits the generalization of its findings to other economic sectors and countries. The present study geographic and unit scope were in four randomly selected subnational states in South-South, Nigeria and indigenous oilfield services companies operating within these subnational states respectively.

III. Research Method

The study adopted descriptive cross-sectional survey research design (Sekaran and Bougie, 2016). This research design was premised on the previous works of Atiku and Fields (2016) and Kariuki, Wachira and Mwenda (2022).

Population and Sampling

The study population was 1827 indigenous oilfield services companies in Nigeria obtained from Nigerian Content Development and Monitoring Board (NCDMB) approved register. The number of indigenous oilfield services companies in each of the selected South-South States were as follows: Akwalbom 138, Bayelsa 201, Delta 316 and Rivers 1172. The sample frame used in this study was management level positions with appropriate knowledge and experience in oilfield services business strategy, management and operations in each of the companies studied.

Sample Size Determination and Allocation

The study sample size was 328 determined with Taro Yamane's formula for sample size determination while Bowley's formula was used to proportionally allocate sample size to the selected South-South States, Nigeria.

$$\text{Taro Yamane's formula is: } n = N/[1 + N(e^2)] \quad (3.1)$$

Where: n = Sample size, N = Population of the study, e = The margin of error. Therefore, substituting $N = 1827$ and $e = 0.05$ into the stated formula gives: $n = 1827/[1 + 1827(0.05^2)] = 328$.

$$\text{Bowley's statistical formula is: } nh = nNh/N \quad (3.2)$$

Where: n = Total sample size; nh = Proportional sample size; Nh = Population of each stratum; N = Total population of the study.

Substituting $n = 328$, $N = 1827$ and Nh value for each stratum or selected state into the stated formula gives: Akwalbom State: $nh = nNh/N = (328 \times 138)/1827 = 25$; Bayelsa State: $nh = nNh/N = (328 \times 201)/1827 = 36$; Delta State: $nh = nNh/N = (328 \times 316)/1827 = 57$; Rivers State: $nh = nNh/N = (328 \times 1172)/1827 = 210$.

Research Instrument

The study which was at the organizational unit of analysis used a self-developed five-points Likert scale questionnaire as instrument of data collection from management level respondents. The questionnaire was validated and reliability of the study variables established. The construct and content validity were ascertained through checks and corrections from senior academics and research experts in the fields of entrepreneurship, innovation, strategic management and management technology who ensured the statements in the questionnaire measured the study variables.

Table 1: Reliability and Validity Tests Results

S/N o	Variables	Variabl es Code	Numb er of Items	Number of Responden ts	Reliabilit y	Validity					
					Cronbach 's Alpha	Pearson 's r Count	Pearson 's r Table 5% (292 - 2)	P- Valu e	KM O	Bartlett' s Test of Spheric ity	Sig.
1	Entrepreneur ial Culture of Technology Innovation	ECTI	5	292	0.85	0.562	0.195	0.00 0	0.75 6	784.019	0.00 0
2	Customer Satisfaction	CS	5	292	0.75	0.485	0.195	0.00 0	0.71	320.253	0.00 0

Source: Field Survey Data, 2025; IBMSPSS, 29 Output

Reliability and Validity Tests Results

Table 1 shows reliability test results of the study variables based on Cronbach's Alpha coefficient. 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 coefficient values were all greater than 0.7. Thus, the results were acceptable as per the threshold given by Sekaran and Bougie. (2019) cited in Kariuki, Wachira and Mwenda (2022); Enwere et al. (2024) who stated that Cronbach's Alpha coefficient greater than or equal to 0.7 is acceptable for basic and advanced research. This shows that the Likert scale questionnaire items and statements have high reliability as the Cronbach's Alpha values were all higher than the recommended and acceptable values of ≥ 0.5 and ≥ 0.7 . Meanwhile, Safali and Akpunar (2020) explained that reliability can be seen from two sides: reliability (the extent of accuracy) and unreliability (the extent of inaccuracy).

Table 1 shows construct validity test results for each variable of the study based on Pearson's r in IBMSPSS version 29. The basic decision rules for construct validity test with Pearson's r are as follows: Comparing the values of Pearson's r count with Pearson's r table. If the value of r count $>$ r table, test result is valid and if the value of r count $<$ r table, test result is invalid. Again, taking decision based on the result of the significance (sig) or probability value (p-value), if the significance value or p-value $<$ 0.05, test result is valid while if the significance value or p-value $>$ 0.05, test result is invalid. 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 2 were valid for all the study variables. 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 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) cited in Kariuki, Wachira and Mwenda (2020); Enwere et al. (2024). The KMO value for each variable was 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. Bartlett's test of Sphericity value for each study variable has 0.000 significance which is less than 0.05 level of significance indicating no significant correlations among the variables. Therefore, KMO and Bartlett's test of Sphericity results indicated that statements that comprised the research instruments of each variable actually measures what were intended to be measured.

The data were analyzed using descriptive and inferential statistics in Microsoft Excel Software Package version 2016 and IBMSPSS version 29 software application tools respectively. The descriptive statistics were in means and standard deviations while simple linear regression analysis was the inferential statistical technique used to establish the influence of entrepreneurial culture of technology innovation on customer satisfaction of indigenous oilfield services companies in selected South-South States, Nigeria.

Simple Linear Regression Analysis Model Specification

To assess the influence of entrepreneurial culture of technology innovation on customer satisfaction of indigenous oilfield services companies in selected South-South States, Nigeria, a model was formulated based on the research hypothesis as follows:

$$Y = f(X) \quad (3.3)$$

$$Y = \beta_0 + \beta_1 X_i + \epsilon_0 \quad (3.4)$$

$$CS = \beta_0 + \beta_1 ECTI_i + \epsilon_0 \quad (3.5)$$

Y = Dependent variable (Customer Satisfaction of Indigenous Oilfield Services Companies in selected South-South, Nigeria). β_0 = The intercept of the simple linear regression model was interpreted as the mean response when the value of $X_i = 0$ i.e., a constant in the model. β_1 = The slope of the simple linear regression model was interpreted as the change in the mean response when the value of X_i increases by one unit. X_i = Independent variable (Entrepreneurial Culture of Technology Innovation). ϵ_0 = Random error term.

The Analysis of Variance (ANOVA) revealed the overall explanatory power of the study model. The ANOVA formula is given as: The formula for ANOVA is given as:

$$F = MSE/MST \quad (3.6)$$

Where: F = ANOVA coefficient or F- statistic or F-ratio; MST = Mean sum of squares due to treatment; MSE = Mean sum of squares due to error (Kothari and Garg, 2019; Asiegbu, 2015).

IV. Results and Discussions

Questionnaire Response Rate and Demographic Information

A total of 328 copies of questionnaire were administered to management level respondents in sampled companies, out of which 292 representing eight-nine percent were retrieved from the field work and found useable for data analysis. However, 36 copies of

the questionnaire representing eleven percent were found unfit for data analysis because they were either not properly completed or not retrieved from the field. Therefore, the response rate of eighty-nine percent was found adequately good for the purposes of data analysis in this study, thereby meeting the threshold of Allen. (2016) and Rindfuss et al. (2015) cited in Kariuki, Wachira and Mwenda (2022); Enwere et al., (2024) who posited that a response rate of above fifty percent is adequate for descriptive and inferential analysis in research.

Also, the analysis of demographic information showed that 210 respondents were males representing seventy-two percent of the total respondents while 82 respondents were females representing twenty-eight percent 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 indigenous oilfield services companies in Nigeria. This means that the female gender is under represented in management level positions in these firms.

Table 2 shows the descriptive statistics of entrepreneurial culture to technology innovation with average mean and standard deviation values of 4.6400 and 0.5204 respectively meaning that the respondents' opinions were not significantly different from the mean values while table 3 shows the descriptive statistics of customer satisfaction with average mean and standard deviation values of 4.5579 and 0.5625 respectively meaning that the respondents' opinions were not significantly different from the mean values.

Table 2: Descriptive Statistics of Entrepreneurial Culture of Technology Innovation

S/No	Items Code	Entrepreneurial Culture of Technology Innovation	Strongly disagree (%)	Disagree (%)	Neutral (%)	Agree (%)	Strongly agree (%)	Number of Respondents	Mean	Standard Deviation
1	ECTI 1	We are always looking out for new and creative ideas in our environment.	1 (0.3)	2 (0.7)	6 (2.1)	142 (48.6)	141 (48.3)	292	4.4249	0.6085
2	ECTI 2	We are motivated in delivering new products and rendering services we have not done before to our customers.	0 (-)	1 (0.3)	6 (2.1)	119 (40.8)	166 (56.9)	292	4.5411	0.5577
3	ECTI 3	We encourage learning from our previous failures.	0 (-)	2 (0.7)	3 (1.0)	57 (19.5)	230 (78.8)	292	4.7637	0.4929
4	ECTI 4	We are in alliances, collaboration and co-operators with other stakeholders in the delivery of products and services.	0 (-)	0 (-)	2 (0.7)	67 (23.0)	223 (76.4)	292	4.7534	0.4474
5	ECTI 5	We are open to continuous change in products and services demands and expectations	0 (-)	0 (-)	6 (2.1)	71 (24.3)	215 (73.6)	292	4.7158	0.4954

		from our customers.								
Average Mean and Standard Deviation Values	4.6400	0.5204								

Source: Field Survey Data, 2025; Percentages in Parenthesis

Table 3: Descriptive Statistics of Customer Satisfaction

S/No	Items Code	Customer Satisfaction	Strongly disagree (%)	Disagree (%)	Neutral (%)	Agree (%)	Strongly agree (%)	Number of Respondents	Mean	Standard Deviation
1	CS1	We are available at all times to support the needs of our customers.	3 (1.0)	4 (1.4)	3 (1.0)	132 (45.2)	150 (51.4)	292	4.4726	0.6225
2	CS2	We ensure all products and services delivered to customers meet and exceed their expectations.	1 (0.3)	1 (0.3)	3 (1.0)	113 (38.7)	174 (59.6)	292	4.5876	0.5137
3	CS3	We ensure that all products and services delivered to customers are done within the lead-time.	0 (-)	3 (1.0)	6 (2.1)	120 (41.1)	163 (55.8)	292	4.5308	0.5705
4	CS4	We are efficient in the delivery of products and services to our customers.	0 (-)	1 (0.3)	8 (2.7)	103 (35.3)	180 (61.6)	292	4.5822	0.5654
5	CS5	We enjoy continuous patronage on products and services delivered to our customers.	0 (-)	1 (0.3)	5 (1.7)	99 (33.9)	187 (64.0)	292	4.6164	0.5406
Average Mean	4.5579	0.5625								

and Standard Deviation Values		
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Source: Field Survey Data, 2025; Percentages in Parenthesis

Table 4: Summary of Regression Analysis Results of Entrepreneurial Culture of Technology Innovation on Customer Satisfaction of Indigenous Oilfield Services 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	
292		B	Standard Error	Beta			0.175	0.031	0.027	9.213	0.003	1.924
	(Constant)	3.775	0.258		14.629	0.001						
	Entrepreneurial Culture of Technology Innovation	0.168	0.055	0.175	3.035	0.003						

Dependent Variable: Customer Satisfaction

Source: Field Survey Data, 2025; IBMSPSS, 29 Output

Table 4 shows the regression results on the influence of entrepreneurial culture of technology innovation on customer satisfaction of indigenous oilfield services companies in selected South-South States, Nigeria. The results revealed that entrepreneurial culture has significant influence on customer satisfaction of indigenous oilfield services companies in selected South-South States, Nigeria ($\beta = 0.168$, $t = 3.035$, $p < 0.05$). The t-value shows that the coefficient of the model parameter is statistically significant ($p = 0.001$). The regression analysis results also revealed that the coefficient of relative effect ($R = 0.175$) shows that a weak and positive correlation exists between entrepreneurial culture and customer satisfaction. The coefficient of determination $R^2 = 0.031$ shows that 3.1% of the variations in customer satisfaction of indigenous oilfield services companies in selected South-South States, Nigeria is explained by entrepreneurial culture. The regression coefficient of entrepreneurial culture is 0.168 which implies that a unit change in entrepreneurial culture influences a positive change of 0.168 units in customer satisfaction of indigenous oilfield services companies in selected South-South States, Nigeria. Likewise, table 5 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 0.003 ($F = 9.213$, $p < 0.05$).

$$CS = 3.775 + 0.168ECTI + \epsilon_0 \quad (4.1)$$

Based on the interpreted results of the simple linear regression, the null hypothesis H_0 , which states that entrepreneurial culture of technology innovation does not significantly influence customer satisfaction of indigenous oilfield services companies in selected South-South States, Nigeria is rejected. However, the alternate hypothesis H_a , which states that entrepreneurial culture of technology innovation significantly influence customer satisfaction of indigenous oilfield services companies in selected South-South States, Nigeria is accepted.

V. Discussion

The descriptive statistics of the independent variable, entrepreneurial culture to technology innovation shows that the average mean was well above the benchmark with the average standard deviation much less than 1, meaning that the differences in the respondents opinions from the mean were small while the descriptive statistics of the corresponding dependent variable, customer satisfaction shows that the average mean was more than the threshold and average standard deviation much less than 1 meaning that the variations in the respondents opinions from the mean were small.

The results of the influence of entrepreneurial culture to technology innovation on customer satisfaction found that indigenous oilfield services companies that promote the culture of technology innovation positively and significantly improved their customer satisfaction outcomes by a factor of 0.168 compared to those that adopted conventional strategic management approach. This result agrees with Mehralian and Khazaei (2022) who found that entrepreneurial culture had a significant effect on performance as well as absorptive capacity of telecommunications companies in Iran. This finding agrees with Poi (2020) who

showed that entrepreneurial culture significantly relates with a number of positive organizational outcomes of creating new business ventures and improving firm performance. Also, this result supports the finding of Adeyeye, Wale-Oshinowo and Ayeni (2020) who established that innovativeness, experimentation and accountability which are dimensions of entrepreneurial culture had positive and statistical significant impact on ICT firms' performance in Minna Metropolis, Niger State, Nigeria. However, this result disagrees with Bunagan and Sison (2019) who found that no significant difference in respondents' perception of these entrepreneurial culture indicators: self-reliance, mental toughness, power distance index, avoidance and long-term orientations in the Kingdom of Bahrain. Meanwhile, this finding aligns with Danish et al (2019) who showed that entrepreneurial culture had direct relationship with factors affecting it such as openness to change and self-efficacy and indirect significant relationship with creativity as a mediating variable in Information Technology (IT) firms in Lahore, Punjab Province, India. This result confirms Prasetyo (2019) who found that entrepreneurial culture positively and significantly influenced competition and regional economic growth of micro small and medium enterprises (MSMEs) in central Java Indonesia. Again, this result is in agreement with the findings of Koitamet and Ndemo (2017) who found that entrepreneurial culture had positive and significant relationship with the performance of social entrepreneurship firms in Kenya. Also, this finding is in tandem with Kabuoh et al (2017) who showed that entrepreneurial culture had a great effect on performance of small and medium enterprises (SMEs) in Lagos State, Nigeria. Moreover, this result is accordance with Atiku and Fields (2016) who showed that entrepreneurial culture had positive relationship with human resource development and sustainable competitive advantage in the Nigerian banking sector. Also, this result is consistent with Leal-Rodriguez, Albort-Morant and Martelo-Laudroguez (2015) who established that entrepreneurial culture within family firms positively and significantly increase innovation process and business performance in automotive components manufacturing industry in Spain. This result confirms Chivasa (2014) who found that entrepreneurial culture had negative and significant impact on performance factors of small and medium enterprises (SMEs) in Bulawayo Metropolitan Province, Zimbabwe. This result is in accordance with Pantouvakis and Bouranta (2013) who found that employee job satisfaction positively and significantly mediated the relationship between organizational learning culture and customer satisfaction of difference services sectors of the economy.

VI. Conclusion and Recommendations

Conclusion

The study concludes that entrepreneurial culture of technology innovation had significant positive influence on customer satisfaction of indigenous oilfield services companies in selected South-South States, Nigeria.

Recommendations

Owners/Managers and employees of indigenous oilfield services companies in Nigeria should embrace entrepreneurial culture of technology innovation in their organizations as it was established to significantly and positively influence customer satisfaction.

Policy makers and regulators in Nigeria's oil and gas industry should include strategic entrepreneurship assessment kits in their policy performance monitoring and evaluation activities as it was established to significantly and positively influence customer satisfaction.

Research Implications, Limitations and Suggestions for Further Studies

The results suggest that innovative approach with entrepreneurial culture of technology innovation can be an effective addition to conventional strategic management approach, particularly for the technological advancement indigenous oilfield services companies and industrialization efforts of Nigeria. This could support the realization of one of the key strategic objectives of Nigerian Oil and Gas Industry Development (NOGICD) policy on the growth of indigenous research and development, technology innovation capacities, Nigerian professional bodies, technology transfer and support for technology transfer.

This study was carried out in Nigeria, a developing nation with attendant numerous institutional weaknesses, infrastructure and technological innovation challenges and other environmental challenges as well as complexities.

Future studies should explore the need to study these variables in both developed and other emerging oil and gas producing economies. Again, further research should be conducted on the strategic entrepreneurial alliances/partnerships and sustainable growth of indigenous oilfield services companies.

References

1. Adeyeye, M. M., Wale-Oshinowo, B., & Ayeni, O. (2020). Entrepreneurial Culture as a Deterrent to Corruption on ICT Firms' Performance. *Academy of Management Journal*. Vol.15, No.4, pp, 56 – 66.
2. Allen, D. S. (2016). The impact of shortening a long survey on response rate and response quality. *Doctoral Dissertation*.
3. Arokiasamy, A. A. (2013). The impact of customer satisfaction on customer loyalty and intentions to switch in the banking sector in Malaysia. *Journal of Commerce*, 5(1), pp. 14-21.
4. Arokodare, M. A., Kuforiji, A. A., Makinde, O. G., & Asikhia, O. U. (2020). Strategic Entrepreneurship and Superior Firm Performance: The Moderating Role of Entrepreneurial Mindset. *Journal of Critical Reviews*, Vol. 9, pp. 1975 – 1987.

5. Asiegbu, I. F. (2015). *Research Methodology Handbook*. Prosper Nigeria Limited, Port Harcourt, Nigeria.
6. Asif, A. A., Asif, M., Ayyaz, A., & Amir, I. (2020). Boosting Up Operational Performance of Manufacturing Organizations through Interpretive Structural Modelling of Enabling Practice. *Hindawi Mathematical Problems in Engineering*, pp. 1 – 11.
7. Atiku, S. O., & Fields, Z. (2016). The Relationship Between Entrepreneurial Culture and Sustainable Competitive Advantage in the Nigerian Banking Sector. *Journal of Economics and Behavioural Studies*, Vol.8, No.2, pp. 26 – 39.
8. Bahareh, A., Mir, M., & Mahmoud, D. (2011). Entrepreneur learning organization: A functional concept for Universities. *Middle East Journal for Scientific Research*, 10(1), pp. 120 – 129.
9. Baridam, B. B., & Govender, I. (2019). ICT Influence on the Healthcare sector in the Niger Delta region: ICT policy at an organizational level. *Development Studies Research*, Vol.6, 1, pp:142 – 151.
10. Barney, J. B. (1986). Organizational Culture: Can it Be a Source of or Sustained as a Source of Competitive Advantage. *Academy of Management Review*. 11: 656 – 665.
11. Brownson, C. D. (2011). The impact of Government entrepreneurship promoting policy measures in fostering entrepreneurial culture in Akwa-Ibom State, Nigeria from 2004 – 2009. (Unpublished PhD Thesis) University of Essex England.
12. Bunagan, V. D., & Sison, S. (2019). Entrepreneurship Culture and Orientations of SMEs Owners/Managers in the Kingdom of Bahrain. *Journal of Small Business and Entrepreneurship Development*, Vol.7, No.1, pp. 60 – 70.
13. Chivasa, S. (2014). Entrepreneurship Culture Among SMEs in Zimbabwe: A Case Study of Bulawayo SMEs. *International Journal of Economics, Commerce and Management*, Vol.2, Issue.9, pp. 1 – 13. United Kingdom.
14. Danish, R. Q., Asghar, J., Ahmed, Z., & Ali, H. F. (2019). Factors Affecting Entrepreneurial Culture: The Mediating Role of Creativity. *Journal of Innovation and Entrepreneurship*, Springer, Heidelberg, Vol.8, Issue1, pp. 1 -12.
15. Dogan, L. (2015). The intersection of entrepreneurship and strategic management: Strategic entrepreneurship. *Social and Behavioural Sciences*, 195, pp. 1288 – 1294.
16. Draghici, A., Albulescu, C. T., & Tamasila, M. (2014). Entrepreneurial attitude as knowledge asset: its impact on the entrepreneurial activity in Europe. *Procedia - Social and Behavioural Sciences*, 109, pp. 205–209.
17. Enwere, D. I., Asiabaka, I. P., Ogolo, J. I., Ugwu, K. E., Onyechere, P. O., & Okoye, U. C. (2024). Strategic Entrepreneurship and Operational Performance of Nigerian Indigenous Oil and Gas Service Companies in Selected South-South States, Nigeria. *International Journal of Professional Business Review*, Miami, Vol. 9, No. 12, pp. 01 - 24.
18. Foss, R., & Lyngsie, N. (2011). The emerging strategic entrepreneurship field: Origins, key tenets, and research gaps. *Strategic Management and Globalization working paper*, 7.
19. Kabuoh, M. N., Ogbuanu, B. K., Chieze, A. I., & Adeoye, I. (2017). Entrepreneurial culture and performance of small and medium enterprises (SMEs) in Nigeria. *International Journal of Operational Research in Management, Social Sciences & Education*, 3 (1), pp. 1-10.
20. Kariuki, D. K., Wachira, A. W., & Mwenda, L. K. (2022). Entrepreneurial Mindset and Innovation by 1–3 Star Rated Hotels in Kenya. *Journal of Business and Strategic Management*. Vol.7, Issue 1, pp. 1 – 18.
21. Ketchen, D. J., Ireland, D. R., & Snow, C. C. (2007). Strategic entrepreneurship, collaborative innovation, and wealth creation. *Strategic Entrepreneurship Journal* 1, pp. 377 – 385.
22. Koitamet, L. K., & Ndemo, B. (2017). Effect of Entrepreneurial Culture on the Performance of Social Entrepreneurship Firms in Kenya. *International Journal of Entrepreneurship*, Vol.2, Issue.1, No.2, pp. 17 - 26.
23. Kothari, C. R., & Garg, G. (2019). *Research Methodology: Methods and Techniques*. (4th Multicolour Edition). New Age International Publishers Limited, New Delhi, India.
24. Krajnakova, E., Navikaite, A. & Navickas, V. (2015), Paradigm Shift of Small and Medium Sized Enterprises Competitive Advantage to Management of Customer Satisfaction, *Inzinerine Ekonomika-Engineering Economics*, 26(3), pp. 327-332.
25. Leal-Rodriguez, A. L., Albort-Morant, G., & Martelo-Landroguez, S. (2018). Links Between Entrepreneurial Culture, Innovation and Performance: The Moderating Role of Family Firms. *Journal of Business Research*, 5(2), pp. 35 – 49.
26. Mehralian, M. M., & Khazaei, P. (2022). Modelling the Interrelationships Among Absorptive Capacity, Marketing Intelligence, and Entrepreneurial Culture and their Impact on the Performance of Telecommunications Companies in Iran. 11th International Conference on New Insights on Entrepreneurship and Business Management, Innovation and Commercialization Research Centre, pp. 1 -11.
27. Miles, D. A. (2017). A Taxonomy of Research Gaps: Identifying and Defining the Seven Research Gaps. In *Doctoral Student Workshop. Finding Research Gaps – Research Methods and Strategies*, Dallas, Texas.
28. Naranjo-Valencia, J. C., Jiménez-Jiménez, D., & Sanz-Valle, R. (2011). Innovation or imitation? The role of organizational culture. *Management Decision*, 49(1), pp. 55–72.
29. Nhuta, M., & Kapofu, S. (2015). Evaluation of strategic entrepreneurship approaches for sustainable growth in the commercial banking sector in Zimbabwe. *International Journal of Contemporary Applied Sciences*, 2(2), pp. 57-83.
30. NOGICD. (2010). *Nigerian Oil and Gas Industry Content Development Act*, No.2.
31. Ocheni, S. (2015). Oil and Gas Industry and the Growth of Small and Medium Enterprises in Nigeria: Local Content Policy Implications. *Journal of Small Business and Entrepreneurship Development*, Vol.3, No.1, pp. 66 – 75. Published by American Institute for Policy Development.

32. Ojha, R., Vij, A. K., & Vrat, P. (2014). Manufacturing excellence and its critical factors. *Journal of Advances in Management Research*, Vol.11, No.3, pp. 312 – 332.
33. Oliver, R. L. (2010). *Customer Satisfaction: A Behavioural Perspective on Consumer* (2nd ed.). Routledge.
34. Pantouvakis, A., & Bouranta, N. (2013). The link between organizational learning culture and customer satisfaction: Confirming relationship and exploring moderating effect. *The Learning Organization*, 20(1), pp. 48–64.
35. PIA. (2021). *Petroleum Industry Act*.
36. Poi, G. (2020). Entrepreneurial Culture: A Literature Review. *International Journal of Business and Entrepreneurship Research*, Vol13, Issue 3, pp. 59 -72.
37. Prasetyo, P. E. (2019). Role of Entrepreneurial Culture as the Driver of Economic Growth. *International Journal of Economics and Financial Issues*, 9(3), pp. 237 – 243.
38. Rindfuss, R. R., Choe, M. K., Tsuya, N. O., Bumpass, L. L., & Tamaki, E. (2015). Do low survey response rates bias results? Evidence from Japan. *Demographic Research*, 32, 797 – 828.
39. Safali, S., & Akpunar, B. (2020). Validity and Reliability Study of Academic Self-Efficacy Scale for Faculty Members. *Advances in Language and Literary Studies*, 11(4), 21 – 29.
40. Sayani, H. (2015). Customer satisfaction and loyalty in the United Arab Emirates banking industry. *International Journal of Bank Marketing*, 33(3), pp. 351–375.
41. Schumpeter, J. A. (1949). *Capitalism, socialism and democracy* (3rd ed). London: George Allen and Unwin.
42. Sekaran, U., & Bougie, R. (2016). *Research Methods for Business: A Skill Building Approach*. John Wiley & Sons.
43. Sekaran, U., & Bougie, R. (2019). *Research Methods for Business: A Skill Building Approach*. John Wiley & Sons.
44. Simon, M., & Goes, J. (2016). Reliability and validity in quantitative studies. Doctoral.
45. Tavakol, M., & Dennick, R. (2011). Making Sense of Cronbach's Alpha. *International Journal of Medical Education* 2: 53–55.
46. Udok, U., Udofia, M., & Okunbolade, O. (2020). Local Content Development in the Oil and Gas Industry in Nigeria: Problems and Prospects. *European Journal of Training and Development Studies*, Vol.7, No.1, pp. 64 – 83.
47. Ugwu, K. E., & Igbo, R. C. (2021). Manpower Training and Employee Development (A case study of Access Bank Plc, ObioAkor Local Government Area, Port Harcourt Metropolis, Rivers State). *Journal of Applied Management*, Vol.19, No.2, pp. 245 – 256.
48. Ukenna, B. I., Makinde, G. O., Akinlabi, H. B., & Asikhia, O. U. (2019). Strategic entrepreneurship and organizational performance of selected agricultural SMEs in Lagos, Ogun and Oyo States, Nigeria. *International Journal of Development Strategies in Humanities, Management and Social Sciences*, 9(3), pp. 89-128.
49. Zouhayer, M. (2013). Entrepreneurial culture, profile of the leader and entrepreneurial orientation: empirical application in the case of the Tunisian companies. *Management Strategies Journal*, 22(4), pp. 18-25.