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Organizational Mindset Shift And Innovativeness Of Oil And Gas Firms In South-South, Nigeria

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Abstract: This study examined the nexus between the change in the organisational mindset and the innovativeness in oil and gas and companies located in Rivers State, Nigeria. The problem that led to the study was most organisations find it hard to generate process innovation despite adopting the modernization and restructuring programmes, attributed mainly to, inflexible mindsets and lack of leadership reinforcement. The main objective was to explore the relationship between level of organisational changes in the mind set and the innovations potential and the role of leadership reinforcement to support this relationship. The study was supported in the theory of Dynamic Capability and Transformational Leadership which explains the effect of the cognitive adaptation in innovation. Positivist research philosophy was modified and research design was cross-sectional survey. Using the stratified sampling technique, the study made used of 351 respondents as the sample size which was determined using Yemane's formula. The structured questionnaire were used to collect data and the descriptive statistics and Spearman Rank Correlation Coefficient were used to analyse the data with level of significance of 0.05. The results showed that there is a positive and significant association between the dimensions of organisational mind set changes (growth mind set, adaptive learning, openness to change, and collaborative orientation) and process innovation capability. Theoretically, the study added value to the literature as it incorporated leadership support to the dynamic capability framework, whereas, managerially, the focus is on developing adaptive mindsets by supporting them through supportive leadership practises. The study suggests regular mindset renewal programmes that are led unceasingly in order to maintain innovation.
Keywords: Mindset shift, Innovation, Capabilities, Energy Firms

I. Introduction

The oil and gas in Nigeria and oil industry more especially in the South-South region is witnessing a major change due to the global energy change, technology shakeups, environmental rules and economic fluctuation. The said pressures have also imposed companies to get innovativeness, the ability to create, adopt, and introduce new ideas, products, and processes to be sustainable and remain competitive (Okafor and Eke, 2023). Innovativeness are based on the capability by the firm to integrate knowledge, resources and technology in a manner that will create value and increase the efficiency in operations (Lawson and Samson, 2001). In the environment of the South-South oil and gas industry where companies have to operate with uncertainties pertaining to their operations, restraint of resources and regulations, it is no longer as a luxury to promote innovation but as a factor to survive and develop in the long term (Nwankwo & Onuoha, 2022).

One of the important factors that determine the innovative abilities is the change in the organisational mindset, the redefinition of the beliefs, values, and behaviours by the group promoting innovativeness and flexibility (Dweck, 2017; Olulu-Briggs, 2021; Olulu-Briggs & Wobo, 2023). Change in organisational mentality allows employees to treat problems with openness, learning and openness to experimenting, and further boosts the innovative ability of the firm (Amah & Baridam 2020). One of the big things related to this change is learning/development mindset. Companies that maintain a learning culture develop a on-going improvement

of skills, sharing of knowledge and generation of ideas, which all result in an improved innovative ability (Nonaka and Takeuchi, 1995). Continuous learning is to help employees to flex and use new technologies to streamline the exploration and production process in the South South oil and gas industry where advances in automation, artificial intelligence and green energy are changing the landscape (Nwankwo and Onuoha, 2022).

Moreso, change readiness and adaptability is another important aspect of organisational mindset shift because it refers to the capacity of the firm to foresee, accept and adequately react to any change in both external and internal environment (Cameron and Green, 2020). Highly adaptive organisations have a higher capacity to incorporate new and emerging technologies, business models and sustainability practises that will generate innovation. More so, risk tolerance and exploration enable companies to make calculated risks and experiment with new concepts without having to integrate the fear of failure. This kind of attitude is necessary to promote innovation in a very risky sector as the exploration, digitalization, and alternative energy sources investments need boldness, and adaptability (Amadi and Worlu, 2021).

Despite the fact that the oil and gas industry in Nigeria has featured in many research on the issue of innovation and organisational change (Amah and Baridam, 2020; Okafor and Eke, 2023), the topic of the connexion between organisational mindset changes and innovativeness is underdeveloped especially in the South-South region. The previous studies have mostly concentrated on the structural and technological aspects that lead to the innovation with minimal emphasis placed on the psychological and behavioural aspect that influences the results of innovations (Nwankwo & Onuoha, 2022). In addition, while learning culture and adaptability have been studied separately in literature, few have combined the multidimensional view of mindset shift including learning and development mindset, change readiness, and risk tolerance and experimentation into one that affects innovation (Amadi and Worlu, 2021).

1.1 Statement of the Problem

Despite the strategic importance of the oil and gas industry on the economy of Nigeria, companies that operate within the South-South region have consistently demonstrated poor innovativeness as demonstrated by their sluggish adoption of modern technology, low investment and research and development and low innovativeness in terms of capacity for process and product innovation (Okafor & Eke, 2023). The area, which is considered to be the industrial heartland of the petroleum industry, is plagued with constant issues such as inefficiency in operations, diminishing productivity, and low competitiveness in world energy markets. This low level of innovativeness has impeded the ability of firms to diversify operations and make them more efficient, and to shift toward more sustainable energy solutions. Consequently, most oil and gas firms in the region are depending on outdated production systems, traditional management practises and reactive rather than proactive forms of change (Amah & Baridam, 2020).

The ongoing poor results in innovation hints at an underlying problem that has to do with organisational mindset. Many companies have the culture of rigidly avoiding risk that discourages experimentation and learning. The lack of a learning and development mindset, low change readiness and adaptability as well as poor risk tolerance and experimenting ability limit the ability of firms to generate and implement new ideas (Dweck, 2017; Amadi & Worlu, 2021). These internal barriers weaken innovation despite the presence of opportunities for technological innovation outside the organisation. Besides, leadership practises among oil and gas sectors in the region have not been able to create an environment conducive to creativity and innovation. Weak support of leadership in leadership, especially in terms of communicating vision, allocating resources with support, and empowering employees; has led to the further limitation of the transformation of organisational mindset to an innovative outcome (Adeniji et al., 2022; Yukl, 2013).

The gap in literature exists in the paucity of empirical studies in the literature on the effects of organisational mindset shift, which include learning and development mindset, change readiness and risk tolerance, on the innovative capabilities of oil and gas firms in South-South Nigeria. Previous studies have mainly examined either structural, financial, or technological determinants of innovation (Nwankwo and Onuoha, 2022; Okafor and Eke, 2023), while paying little attention to the psychological and cultural dimensions of innovation that determine innovative behaviour in organisations. Furthermore, little focus has been paid on moderating role of leadership support in building up the relationship between organisational mindset and innovative capabilities.

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Vol. 55 No. 1 January 2026, pp. 559-572

1.2 Aim and Objectives of the study

The aim of this study is to investigate the relationship between organizational mindset shift and innovativeness of oil and gas firms in South-South, Nigeria. Specifically, the objectives of the study are to:

i. investigate the relationship between learning and development mindset and process innovative capability;

ii. examine how change readiness/adaptability relates with process innovative capability;

iii. evaluate the nature of the relationship between risk-tolerance and experimentation and process innovative capability; and

1.3 Hypotheses

To guide the analysis, the following hypotheses will be tested:

HO_1: Learning and development mindset has no significant relationship with process innovative capability.

HO_2: There is no significant relationship between change readiness/adaptability and process innovative capability.

HO_3: Risk-tolerance and experimentation have no significant relationship with process innovative capability.

II. Literature Review

2.1 Theoretical Framework

2.1.1 Dynamic Capabilities Theory

Teece, Pisano and Shuen (1997) developed a theory called the Dynamic Capabilities Theory (DCT) to explain the way organisations develop, integrate and re-configure internal and external competencies as a response strategy to changing and fast-changing environmental conditions. In contrast to the traditional resource-based perspectives that have assumed that the source of competitive advantage is based on availability of fixed resources, the DCT assumes that the dynamism in the environment is sustained by the firm through continuous adaptation and innovation which is facilitated by the ability to renew competences (Teece 2007). The theory is particularly applicable to South-South Nigeria oil and gas companies given the unpredictability of the environment, fluctuation of prices, technological shocks, etc., the organisation need to constantly renew itself and be innovative. The DCT posits that there are three key dynamic capabilities that are critical in firms that, namely, sensing, seizing and transforming. It is called sensing to determine the opportunities and threats that can exist in the external environment, seizing to mobilise resources and capabilities to exploit opportunities and transforming to constantly realign organisational processes to remain competitive (Teece, 2018). The dimensions are closely associated with the measures of organisational mindset shift which include learning and development mindset, change readiness and risk tolerance. The learning mindset helps the firms to develop an opportunity sense by constant development of skills and knowledge. This change readiness will allow us to embrace opportunities that will be based on a sense of adaptability and flexibility and a tolerance for risk and experimentation is the backbone of changing capabilities as it will lead to innovation, trial, and experimentation.

2.1.2 Organisational Learning Theory

The Organisational Learning Theory (OLT), which was proposed by Argyris and Schon (1978) and expanded upon by Senge (1990) contains the Theory that Organisations learn and become better through the mutual acquisition, sharing and utilise knowledge. It assumes that learning does not occur as a personal experience as it is internalised in organisational systems, routines and cultures which affect the behaviour and decision making process. Organisational learning enhances innovation as one can innovate and put in use new ideas that will be efficient, flexible and competitive (Nonaka and Takeuchi, 1995). The OLT is directly connected with the idea of learning and development mindset that is one of the main indicators of the mindset shift in an organisation. Continuous improvement, reflection and sharing of knowledge is part of a learning oriented organisation, and needed to enhance innovation. Argyris (1999) notes that organisations that practise a form of learning known as the double-loop learning, that is, doubting and revisiting the assumptions upon which they are founded, have higher chances of adapting effectively to the complex and uncertain

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environments. Conversely, those organisations unable to do more than single-loop learning in which only superficial corrections are made to problems without questioning the status quo, tend to fail in innovation.

2.1.3 The Theory of Transformational Leadership

The Transformational Leadership Theory (TLT) was created by Burns (1978) and developed by Bass (1985) with the focus on the inspirational and motivational leadership behaviours that encourage followers to surpass expectations, accept change and work towards shared objectives. Transformational leaders are able to accomplish this by influencing followers by four dimensions which include idealised influence, inspirational motivation, intellectual stimulation and individualised consideration (Bass and Avolio, 1994). The moderating variable has this theory is the leadership support that is prominent in the current study. Transformational leadership offers a learning, flexible and innovative environment. By stimulating the intellect, the leaders make the employees think unconventionally and seek innovative solutions which are the main features of an innovative organisation. Inspirational motivation makes the employees more dedicated to the organisational vision and create a common ground that innovation is a strategic priority. Individualised consideration also ensures that the employees receive guidance and developmental help to increase the learning and development spirit. Lastly, the idealised influence provides role model to follow and take a risk and experiment, encourages others to follow and do the same (Yukl, 2013).

2.2 Conceptual Framework

2.2.1.1 Organisational Mindset Shifts

An organisational mindset shift is a collective change in the way the members of an organisation think, learn and behave to reach the shared goals in the ever-changing environment (Dweck, 2017). It involves replacing any inflexible, set ways of thinking with a less inflexible way of thinking that is growth-oriented, appreciates learning, experimentation, and resiliency. The change in the mindset change the approach to challenges by the employees in a way they can perceive as an arousal rather than the setback and making a chance for enhancing and innovating (Okafor and Eke, 2023). This change is necessary in the case of the oil and gas companies where the industry has been hugely affected by the global energy transitions, environmental issues, and technological changes, all of which require flexibility and innovativeness.

The learning and development attitude has to do with the role of constant learning, skills and knowledge acquisition, and sharing. Companies that are highly learning oriented would facilitate their employees to learn new competencies, reflect and apply lessons of the past to new problems (Nonaka and Takeuchi, 1995). The culture of inquisitiveness, co-operation and development encouraged by this attitude assists in the innovation and more flexible (Senge, 1990). Within the oil and gas industry, the learning culture involves the readiness of companies to respond to changes in their technologies such as the adoption of digital exploration technologies, artificial intelligence and environmental management systems. The second dimension is the change preparedness and adaptability which is the capacity of an organisation to foresee, accept and harmonise change. According to Cameron and Green (2020), change readiness refers to the ability of an organisation to act positively to the changing business environments. Change readiness in such a volatile industry as oil and gas gives firms the chance to be able to change strategy, utilise sustainable energy practises and be competitive. Adaptability also means enabling the employees to be creative and come up with new solutions to changes within the market. Lack of such preparedness will lead to stagnation and lack of efficiency in firms.

The third is risk tolerance and experimentation, which involves the development of a culture in which innovation is encouraged and failure is viewed as an experience, but not a failure. Tushman and O'Reilly (2013) are of the opinion that innovation flourishes where such organisations reward experimentation and where calculated risk taking is accepted. The risk tolerant organisations are more likely to develop the breakthrough solutions in the oil and gas operations where exploration, safety and technology investments are characterised by uncertainty. On the other hand, in a risk-averse cultures, innovation is suppressed, thus, employees do not propose new ideas which can help the growth.

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Vol. 55 No. 1 January 2026, pp. 559-572

2.2.2 Innovativeness

Innovativeness can be described as capability of an organisation to create, embrace and apply new ideas, products, processes or business models of the organisation that generates value and increase in competitiveness (Lawson and Samson, 2001). These aspects are not only in technological innovation but is more in wider scope of competences in managerial innovations, process reengineering and advancements in service delivery functions. Put simply, innovative capability is the measure of the effectiveness with which a firm is able to transform the knowledge's and resources into creative products. A number of factors usually affect innovativeness and some of them are organisational culture, structure, learning orientation and leadership. Companies with knowledge management and collaboration will be more successful to innovate since they utilise shared intelligence (Nonaka and Takeuchi, 1995). Besides, innovation requires conducive policies, essential resources, and empowering employees to explore and bring new ideas (Amadi and Worlu, 2021).

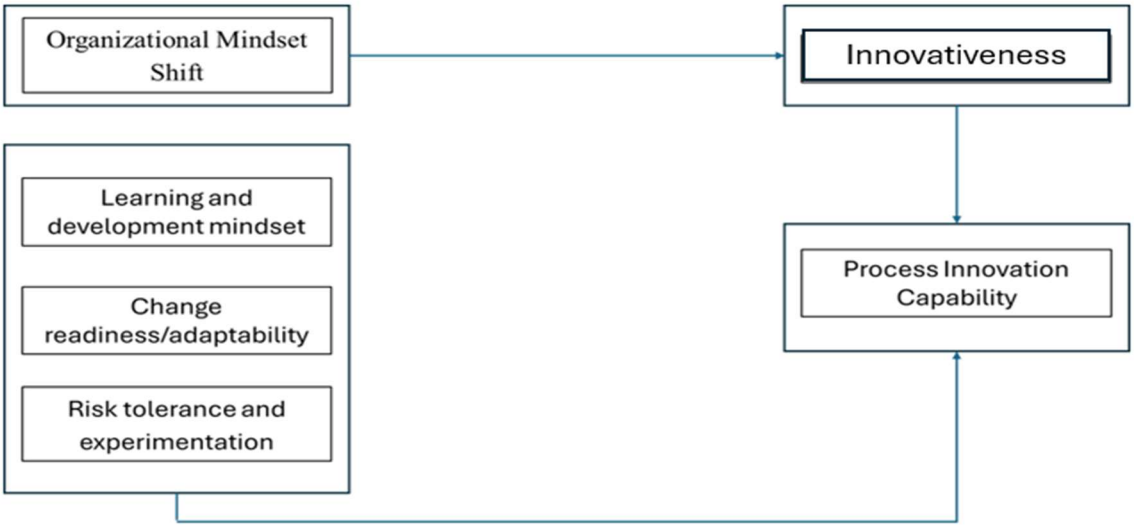

Figure 2.1: Conceptual framework on the relationship between organizational mindset shift and innovativeness in Niger Delta, Nigeria.

Source: Organizational Mindset Shift: Learning and development mindset, Change readiness/adaptability, and Risk tolerance and experimentation (Senge, 1990; Nonaka & Takeuchi, 1995; Okafor & Eke, 2023; Cameron & Green, 2020). Innovativeness: Process innovativeness (Teece et al., 1997; Teece, 2007; Amadi & Worlu, 2021).

2.3 Empirical Review

In bibliometric and empirical synthesis of 773 articles relating to organisational learning and innovation, Hael (2024) identified that organisations with high learning culture and employee training programme had better rates of innovation. The study employed the content analysis. This observation is important as a confirmation of the importance of the learning and development mindset as a source of long term innovation. The research carried out by Liu et al. (2022) is empirical research and the purpose was to accommodate testing the bonding between employee growth mindset and innovation behaviour. The statistical method Spearman Rank correlation was used for the study. They discovered that growth-oriented mindset is a powerful way of improving individual innovative behaviours using multi-method analyses that found learning orientation and creative self-efficacy as critical. This observation help to argue that learning and development attitude is a major contributor to organisational achievement in terms of innovation aspect.

In the study conducted by Giaccone et al. (2022), the risk-taking behaviour as a predictor of innovation was tested and it was found that the better the performance on innovation, the more risk-taking capability and experimentation ability a firm has. The paper has written that the more organisations pleaded for the experimentation and the calculated risk-taking, the more they were receptive to technological change. In a study by Matthewes et al. (2022), the experimental intervention reframing of the employees' perceptions of failure and uncertainty was performed, and it turned out that those individuals who were subjected to positive risk framing showed more innovative practises. The study made utilised use of the multiple regression technique. This provides empirical evidence for the consideration of risk tolerance, experimentation as essential dimension of mindset which determines innovativeness.

Adeniji, Osibanjo, and Ibidunni 2022 Examining the effects of leadership support on the improvement of innovative work behaviour in service companies in Nigeria. The study made use of Spearman's Rank correlation. In their regression analysis, they found that leadership encouragement, vision communication and provision of resources were strongly predicted as predictors of employee innovation. Equally, Okafor and Eke (2023) have discovered that the commitment of the leadership to innovation initiatives has a positive effect on the readiness of employees to experiment and embrace the innovative solutions in the oil and gas companies. The statistical method included in the study was the Spearman Rank correlation. Both of the articles support the moderating role of leadership support in establishing the relationship between mindset change and innovation performance.

A study by Eze, Chinedu, and Opara (2021) of small and mediums sized enterprises (SMEs) in Nigerian context revealed that absorptive capacity and learning-on-the-job had a positive effect on innovative performance, which contributes to the findings that learning-oriented cultures are favourable in driving innovation outcomes. A similar study carried out by Amah, and Baridam (2020) assessed the importance of the organisational culture on oil and gas companies in Rivers State with regards to innovation. The tool that the research has made to use is the Spearman Rank correlation. They found out that companies which promoted flexibility and experimentation had more product and process innovation. This means that abilities of mindset change like readiness to alter and adaptability play a crucial role in promoting innovativeness. Furthermore, Nwankwo and Onuoha (2022) also studied the impact of change readiness on technological innovation in manufacturing companies in Nigeria. They found a positive relation of the readiness to change and innovation adoption and implementation.

III. Methodology

The research took a cross-sectional survey design which implies gathering of data of a population at one point in time. This design was considered suitable since it will enable the researcher to gain perceptions, attitudes and experiences of employees and managers around organisational mindset shift, leadership support and innovativeness simultaneously (Creswell & Creswell, 2018; Sunday & Etugbo, 2023). In the context of the study, cross-sectional designs are of special interest in ascertaining the connexion between the variables without controlling one of them (Saunders, Lewis, and Thornhill, 2019).

The research is based on the philosophy of positivism that is grounded on the opinion that knowledge can be formed based on the observable phenomena and that they can be measured objectively. Positivism emphasise on empiricism, quantification, and hypothesis testing (Saunders et al., 2019). The reason behind this philosophy is that the objective of the study is to establish the quantifiable correlation between a change of mindset of organisations and innovation potentials with the leadership support as a moderator.

The study population comprised the workers and managerial level employees of the oil and gas companies that are in the South-South of Nigeria that incorporates the Rivers, Bayelsa, Akwa Ibom, Delta, Cross River and Edo States. Most of the upstream and downstream oil and gas activities in Nigeria are located in the region, therefore, it is a perfect location to carry out the study. The reason for the sampling of this population is explained by the fact that innovation and organisational flexibility are essential to the sustainability of the companies in this area as the oil and gas market is volatile (Okafor & Eke, 2023). The target group will consist of the staff members in the following departments: operations, research and development (R&D), human resource, production and administration. These are the types of employees that are placed in strategic positions where they will give relevant information on organisational learning practises, adaptability, the culture of risk-taking, leadership behaviours and the processes of innovation. On the basis of documents provided by the Department of Petroleum Resources (DPR, 2023), the number employees in oil and gas

companies in the region is of approximately 4,500, it is the total population that can be used in this research. The Yamane's (1967) formular was employed to determine the sample size from the population and it gave a sample size of 367 approximately. We, added more 23 to take care of wrongly filled questionnaire which made it 390. Stratified random sampling method was used in the research work. The first stratification of the population was according to the organisational levels- senior management, middle management and junior stff. The population was selected in the simple random sample which was done for each stratum in the population. This method was used to give a fair representation of all the subgroups of the population and decreasing sampling bias (Sekaran and Bougie, 2020). Stratification also helps in better generalisation of results as the variations of each of the groups can be well represented. The oil and gas companies were selected based on accessibility and relevancy of operation with a focus being placed on the companies engaged in the oil and gas exploration, production, refining and marketing in the South-South region. The questionnaires were administered both in physical and electronic manners, based of the working procedures and the availability of the respondents of the firms.

Validity and reliability tests were conducted to ensure that the research instrument was accurate and reliable. Content validity was ensured by subjecting the questionnaire to an expert review that was done by three management and organisational behaviour scholars and two people involved in the industry. Their feedback provided adequate coverage of all dimensions of organisational mindset shift, leadership support and innovativeness as they were spelt out in the literature. Construct validity was determined using pilot study of 30 respondents consisting of two oil companies that were not part of the main study. Exploratory factor analysis (EFA) was performed to assure that the items in the questionnaires, shot correctly on their desired constructs (Hair, Black, Babin, and Anderson, 2019). Procedures that showed factor loadings that were less than 0.50 were revised or dropped in order to improve the accuracy of measurement. The Cronbachs Alpha was used in the establishment of reliability. The results of a pilot test showed that the Alpha values of Mindset shift (organisational), leadership support, and innovativeness are 0.87, 0.83 and 0.89 respectively and hence confirming that the test has a high level of internal consistency. Nunnally and Bernstein (1994) believe that reliability coefficients of above 0.70 are good in the social science research. Therefore, it was considered to be a reliable instrument that could be used in the primary research.

Analysis of data obtained through the survey has been done based on descriptive statistics and Spearman Rank Order Correlation Coefficient. Mean, standard deviation, and frequency distribution were used as descriptive statistics to summary the demographic attributes of the respondents and the measures of central tendencies and dispersion of variables. Such descriptive findings led to a summary of the organisational attitude, management support, and degree of innovativeness in the sampled companies (Creswell and Creswell, 2018). In case inferential analysis, Spearman Rank Correlation method was used to analyse the relationship between desired variables. Spearman rho is the none-parametric test that is suitable in an ordinal test and does not presuppose the normality of data, hence it is suitable in the Likert-scale data application in this study (Pallant, 2020). It assesses the magnitude and the direction of the connexion between two ranked variables which provides information on how much the change in organisational mindset may affect the dimensions (learning mindset, change readiness, and risk tolerance) to affect innovativeness. Partial correlation coefficient was also used to find the moderating effect of leadership support. Statistical calculations were performed on Statistical Package of Social Sciences (SPSS version 26). A level of significance of .05 (5%) was used which can be considered in accordance with the social science research. Findings were also provided in form of tables and was given as explanation after the hypotheses and theoretical background of the study.

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Vol. 55 No. 1 January 2026, pp. 559-572

IV. Analysis and Results

4.1 Results

Table 4.1: Demographic Results

		Frequency	Percent	Valid Percent	Cumulative Percent
Gender	Female	150	39.7	39.7	39.7
	Male	228	60.3	60.3	100.0
	Total	**378**	**100.0**	**100.0**	
Age	18-27	186	49.2	49.2	49.2
	28-35	109	28.8	28.8	78.0
	36 and above	83	22.0	22.0	100.0
	Total	378	100.0	100.0	
Marital Status	Single	216	57.1	57.1	57.1
	Married	127	33.6	33.6	90.7
	Separated	35	9.3	9.3	100.0
	Total	**378**	**100.0**	**100.0**	
Educational Attainment	WAEC/OND	157	41.5	41.5	41.5
	HND/Bachelor	186	49.2	49.2	90.7
	Master and above	35	9.3	9.3	100.0
	Total	**378**	**100.0**	**100.0**	

Source: SPSS 28.0 Output

On the gender distribution, the results show that 150 of the total study subjects which total 39.7 percent are female and 228 of the total study subjects which total 60.3 of the total number sample is male. This means that the oil and gas companies that have been analysed are male dominated in their workforce. In terms of age distribution, the results shows that most of the respondents (49.2) are in age bracket of 18-27 years, then 28.8% are in age bracket of 28-35 years and then 22.0% are in age bracket of 36 years of age and above age. This distribution implies that the labour force is rather young, active and could be willing to study and accept changes in the organisation.

The marital status analysis shows that 57.1% of the participants are single, 33.6% of the participants are married and 9.3% are separated. The greater percentage of single respondents could be as a result of the youthfulness of workforce and intensive nature of oil and gas industry which in most cases requires flexibility, mobility and long hours of work - all of which could affect the marital status. As regards the level of education, 41.5% of the respondents have achieved WAEC/OND. 49.2% have achieved HND/Bachelors degrees and 9.3% have achieved Master Masters and above. This implies that a significant number of the workers are tertiary educated and thus necessary, in developing innovative strength.

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Vol. 55 No. 1 January 2026, pp. 559-572

Table 4.2: Spearman Rank Result

Correlations

			Process innovative capability	Learning and development mindset	Change readiness/adaptability	Risk-tolerance and experimentation
Spearman's rho	Process innovative capability	Correlation Coefficient	1.000	.606**	.518**	.444**
		Sig. (2-tailed)	.	.000	.000	.002
		N	378	378	378	378
	Learning and development mindset	Correlation Coefficient	.606**	1.000	.718**	.710**
		Sig. (2-tailed)	.000	.	.000	.000
		N	378	378	378	378
	Change readiness/adaptability	Correlation Coefficient	.518**	.718**	1.000	.773**
		Sig. (2-tailed)	.000	.000	.	.000
		N	378	378	378	378
	Risk-tolerance and experimentation	Correlation Coefficient	.444**	.710**	.773**	1.000
		Sig. (2-tailed)	.002	.000	.000	.
		N	378	378	378	378

**. Correlation is significant at the 0.01 level (2-tailed).
Source: SPSS 28.0 Output

From the outcome in table 4.2, learning and development mindset and Process innovative capability is significant (since 0.000 < 0.05) and positive (since rho = 0.606). This finding shows the high positive and significant relationship between energy adoption and Process innovative capability. The null hypothesis is rejected and the research finds that there exists a significant relationship between learning and development mindset and Process innovative capability. Change readiness/adaptability and Process innovative capability is significant (since 0.000 < 0.05) and the positive (rho=0.518). This finding suggests the existence of a strong positive and significant relationship between change readiness/adaptability and Process innovative capability. The null hypothesis is rejected and the study confirms that there is a significant relationship between the change readiness/adaptability and Process innovative capability. Ris-tolerance and experimentation and Process innovative capability is significant (since 0.000 < 0.05) and positive (rho = 0.444). This finding implies that there is a strong positive and significant relationship between risk-tolerance and experimentation and Process innovative capability. The null hypothesis is rejected, and the study shows that there is a significant relationship between risk-tolerance and experimentation and Process innovative capability.

4.2 Discussion of Findings

The study found that there was a positive and significant relationship between learning and development mindset and process innovation capability. This means that organisations that value continuous learning and skill enhancement and employee development tend to show stronger innovation capabilities in their processes. A learning-oriented culture facilitates the acquisition, assimilation, and application of new knowledge to help firms enhance their operations and thus improve the efficiency of their processes. This finding supports the work of Garvin, Edmondson, and Gino (2008) which proposes that compared to other organisations, learning organisations adapt more quickly and innovate more effectively because of a dedication to knowledge development and dissemination. From a theoretical point of view, this relation is consistent with organisation learning theory (Argyris & Schon, 1978), which is based on the idea that learning at the organisational level is a dynamic process that enhances performance and promotes innovation. According to the theory, when employees are encouraged to learn from experiences and share knowledge, organisations develop a source of intellectual capital which yields creative problem-solving. In the context of the oil and gas industry, companies that have a learning mentality are more likely to be able to redesign their processes to ensure

efficient drilling operations, to avoid endangering the environment, and to increase safety standards (Amah & Baridam, 2020). Empirical support for this finding also comes from Amadi and Worlu (2021), who reported that firms in the energy sectors in Nigeria with great learning orientations had a higher rate of innovation as a result of better technical skills and capitalization of knowledge. Therefore, the findings of this study provide further evidence that learning and development mindset is a foundational pillar for process innovation capability, in line with the theoretical postulation which holds that learning is both a source and outcome of innovation.

The second major finding showed that change readiness/adaptability has a positive and significant relationship with process innovation capability. This suggests that organisations that can anticipate, accept and respond to change are likely to innovate successfully. Adaptability: Adaptability provides firms with the flexibility to adjust the operational processes, make use of digital technologies and to comply with changes in regulations or environmental factors. This finding is in agreement with Okafor and Eke (2023) who noted that to meet the challenge and competitive edge in process innovation, adaptive oil and gas companies in Nigeria succeeded in adopting digital transformation and regulatory compliance practises. This is the outcome that can be explained by Dynamic Capabilities Theory (Teece, Pisano, & Shuen, 1997) which states that to maintain competitiveness in turbulent environments-which is unique to most of the organisations organisations must continuously integrate, build, and reconfigure their internal and external competences. In essence, firms that display change readiness have dynamic capabilities that enable them to sense the opportunities and seize innovations and subsequently transform the process accordingly (Teece, Peteraf, & Leih, 2016). The study of findings suggests oil and gas companies in South-South Nigeria that are able to cultivate adaptability can better navigate uncertainties, among others, oil prices and environmental regulations through innovation of process redesigns. Furthermore, this relationship represents the argument by Weiner (2009) that organisational readiness for change contributes to the successful implementation of innovations. Those employees who are mentally prepared to embrace change make a positive contribution to experimentation, creativity, and continuous process improvement. The implication is that adaptability is not simple an operational need but it is a cognitive and cultural disposition that promotes innovation. Thus, the evidence resulted from this research corroborates the dynamic capabilities theory, thereby proving that adaptability and agility, popular points of mindset shift, are essential to the development and sustenance of process innovation in dynamic and readily changing environments such as the one found in the oil and gas sector in Nigeria.

The third dimension of mindset shift, risk tolerance and experimentation was also found to be positively and significantly related to process innovation capability. This finding suggests that firms that promote risk-taking and experimentation are more likely to have innovative processes developed. Risk-tolerant firms provide an environment in which employees can experiment to try new ideas, fail, and learn from their failures in order to iterate toward a more effective solution. This is in line with the results obtained by Tushman and O'Reilly (2013), who stated that organisational ambidexterity, balancing exploiting existing capabilities and exploring new ideas, is what drives innovation performance. This relationship is well recorded in the risk taking and innovation theory (Weiner, 2009), which holds that exploration and experimentation are key to long term innovation and organisational renewal. According to the theory, firms that are more interested in exploration accept the necessary risks of failure as part of the innovation process. This theoretical lens helps explain why firms that are willing to take on risk are more likely to achieve superior process innovation - they encourage creative thinking about problems and the exploration of new ways of doing things. The result of the study is also fitted to empirical findings of Adeniji, Osibanjo, and Salau (2022) which show that companies in Nigeria, that support the concept of experimentation develop higher rates of success in innovation in terms of process efficiency and product improvement. Similarly, Nwankwo and Onuoha (2022) raised the issue that risk-oriented firms are more advanced in adapting to technologies such as automation and artificial intelligence-based maintenance systems; hence leading to improved operational outcomes. In the oil and gas world, this way of thinking is essential, because process innovation involves incorporating advanced technologies with unknown results. Hence, risk tolerance can be a cognitive enabler of innovation, enabling organisations to compromise between operational safety and experimentation and technological advancements.

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V. Conclusion and Recommendations

5.1 Conclusion

This research paper examined the situation of the relationship between organisational mindset reorientation and innovative abilities of oil and gas companies in South - South Nigeria where the moderating factor is leadership support. It was also found out that the organisational mindset dimensions changes such as learning and development mindset, change readiness /adaptability, and risk tolerance/experimentation have a positive and significant effect on process innovation capability.

As manager, one will note that the findings indicate oil and gas companies need to develop a progressive organisational culture that will promote ongoing learning, flexibility as well as risk-taking. The managers need to invest in employee training and development programmes which would promote innovative idea solving and knowledge exchange. Adoption of flexibility will help the firms to quickly adapt to changes in the market, technology and regulation. The leaders should also create psychologically safe space where the experimentation is encouraged and not punished. Incorporation of these practises enable the managers to improve the efficiency of the operations, process enhancement and competitiveness in the long term.

Ideally, the study is a part of the emerging study on the organisational innovation towards the Social Exchange Theory, the Dynamic Capabilities Theory and the Transformational Leadership Theory. These results confirm that mindset change improve the dynamic capabilities of firms, and they are able to sense, seize and reconfigure resources as a way of innovating.

5.2 Recommendations

To begin with, the management should make a continuous learning and development culture institutionalised by establishing a structured training programme, sharing of knowledge and innovation workshops. The companies should encourage the development of technical and creative skills of the employees through mentoring, cross-functional teams, and working with research institutions. This will enhance the problem-solving skills of the employees and their ability to be more innovative in the process. Moreover, learning programmes have to be directly linked to the innovation objectives in order to make sure that the skills development will be reflected in the process improvement in a measurable way. Second, companies should improve organisational flexibility and response to change by creating flexible organisational structures to facilitate prompt organisation reaction to environmental and technological change. The management can establish change management units 'to see the new trends, assess the level of readiness and lead the departments to changes'. Third, organisations are supposed to develop a risk taking and experimentation driven culture. Leaders should encourage pilot projects and reward positively those teams that will be testing new ideas even where the outcome is unknown. Finally, leadership support should be institutionalised in terms of a strategic facilitator of innovation. The leaders need to promote innovation, which involves having specific budgets, goals for innovation and rewarding those employees who come up with inventive solutions.

5.3 Limitations

The cross-sectional research design is another significant limitation in the research design because it only addresses data at one time. This limits the possibility to establish the critical relationship between the variables, as the shift of the organisational mindset and innovation processes are typically developed in a time period. The other limitation is the geographical location and the industry concentration. The research was only on the oil and gas companies in South-South Nigeria. Although this is rich in context and depth, it can limit the extent in which the findings can be generalised to other sectors or regions. Also, the research relied primarily on self-reported information based on employment of structured questionnaires that can introduce the effect of response bias or social desirability. To enhance the credibility of the data, mixed methodology i.e. quantitative survey with qualitative interviews or focus group discussions should be considered by future scholars to achieve a better contextual data of how leadership support and mindset transformation are promoted innovation. Lastly, process innovation capability was the only measure of innovative capability that was analysed in this study.

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