KNOWLEDGE WORK SYSTEMS: A CATALYST FOR ORGANIZATIONAL SUSTAINABILITY OF UPSTREAM OIL AND GAS COMPANIES IN SOUTH-SOUTH, NIGERIA

Gwarah, Patience Nuka
Department of Office Technology Management
Ken-Saro Wiwa Polytechnic, Rivers State, Nigeria
Email: Patience.nuka@ust.edu.ng
Tel: 0803 705 8784
&
PROF. (MRS.) E.A **BESTMAN**
Department of Office and Information Management
Rivers State University, Port Harcourt
&
PROF. E. **TANTUA (JNR)**
Department of Office and Information Management
Rivers State University
Port Harcourt

ABSTRACT

This study examined the relationship between knowledge work systems and organizational sustainability of upstream oil and gas companies in the south-south, Nigeria. The study adopted the correlational research design, taking cognizance of cross sectional survey approach. The population of the study comprised of Nineteen (19) upstream oil and gas companies in south-south, Nigeria. As a census study, the entire study population was sampled with Three (3) management staff of the 19 oil and gas companies which gave a total of fifty-seven (57) respondents served as the study sampling elements. The structured closed ended 4 point Likert scale questionnaire was used in the collection of the study data. Gathered data were analysed using Pearson Product Moment Correlation Statistics and presented with the aid of Statistical Package for Social Sciences (SPSS) version 20.0. Findings revealed a strong positive and significant relationship between knowledge work systems against the measures of organizational sustainability growth and profitability. Relying on the study findings, we concluded that, there is a positive significant relationship between knowledge work systems and organizational sustainability outcome of growth and profitability. We therefore, recommended that the knowledge work systems be adopted by oil and gas companies as it showed strong positive and significant relationship with growth and profitability, the measures of organizational sustainability.

Keywords: Knowledge Work Systems, Organizational Sustainability, Growth and Profitability.

INTRODUCTION

The upstream oil and gas industry plays critical role in the Nigerian economy, particularly in the South-South region, which is home to a majority of the country's petroleum reserves. This sector is characterized by complex operations that require the integration of cutting-edge technologies, specialized expertise, and comprehensive knowledge management practices to optimize performance and ensure sustainability. As global energy markets become more dynamic and pressures for environmental, social, and governance (ESG) compliance intensify, oil and gas companies face growing challenges to maintain profitability while aligning with sustainable development goals (Abioye, 2019). In this context, knowledge work systems (KWS) have emerged as essential tools for enhancing the efficiency and sustainability of organizational processes in the upstream oil and gas sector. Knowledge work systems (KWS) are specialized systems that help in managing the vast amount of knowledge required for decision-making, improving operational efficiencies, and ensuring long-term competitive advantage (Davenport & Prusak, 1998). These systems facilitate the collection, organization,

and dissemination of critical knowledge resources, enabling companies to innovate, reduce operational risks, and respond more agilely to changes in both local and global market conditions (Choo, 2006). The South-South region of Nigeria is particularly vulnerable to environmental degradation due to the high concentration of oil exploration and production activities. As a result, the integration of knowledge management systems can be seen as a strategic necessity for upstream companies in this region. Effective knowledge work systems not only enable these companies to optimize resource extraction and reduce operational costs but also contribute to environmental stewardship by ensuring compliance with international environmental standards (Udo-Inyang, 2015). In doing so, they enhance the long-term sustainability of these companies, both from an economic and environmental standpoint. Furthermore, knowledge work systems play a critical role in fostering a culture of continuous learning and innovation within organizations. By enabling collaboration across departments and with external stakeholders, these systems ensure that upstream oil and gas companies in the South-South region remain resilient in the face of market volatility and regulatory changes (Ofori-Dankwa & Julian, 2013). This is particularly important in the Nigerian context and Rivers State in particular where political instability, regulatory uncertainty, and environmental concerns often pose significant challenges to sustainability (Ebohon & Ogedengbe, 2012). Therefore, this study investigated the relationship between knowledge work systems and organizational sustainability of upstream oil and gas companies in South-South, Nigeria.

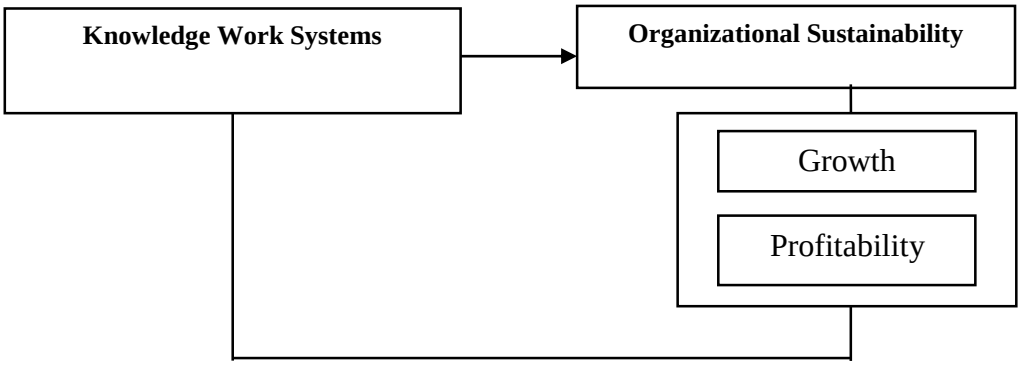

Fig. 1: Conceptual framework for knowledge work systems and organizational sustainability of Upstream Oil and Gas Companies in South-South Nigeria.

Research Questions

1. How does knowledge work systems relate with organizational sustainability of upstream oil and gas companies in south-south, Nigeria

Research Hypotheses

H_{o1}: There is no significant relationship between knowledge work systems and growth of upstream oil and gas companies in south-south, Nigeria

H_{o2}: There is no significant relationship between knowledge work system and profitability of upstream oil and gas companies in south-south, Nigeria

Theoretical Foundation

Knowledge-Based Theory: The Knowledge-Based Theory of the Firm (KBT) has emerged as an influential perspective in understanding the nature and existence of organizations, as well as their ability to create and sustain competitive advantage. This theory, which gained prominence in the late 20th century, diverges from the traditional view of firms as production functions or governance structures, and instead posits that organizations are repositories and integrators of knowledge (Grant, 1996; Spender, 1996). The origins of the knowledge base theory (KBT) can be traced back to the work of Penrose (1959), who recognized the importance of knowledge and its application in the growth and diversification of firms. However, it was the seminal contributions of scholars such as Kogut and Zander (1992), Nonaka (1994), and Grant (1996) that laid the foundation for the development of the KBT as a comprehensive theoretical framework.

Kogut and Zander (1992) proposed that firms are social communities that facilitate the transfer and integration of knowledge among individuals and groups. They argued that the primary role of firms is to create value by transforming and exploiting knowledge in a more efficient manner than the market. This perspective challenged the traditional view of firms as mere production functions and emphasized the importance of knowledge as a strategic resource. Building upon these ideas, Nonaka (1994) introduced the concept of knowledge creation, which he defined as the process of making available and amplifying knowledge created by individuals, and crystallizing it as part of the knowledge network of the organization. He argued that organizations should be conceptualized as entities that create and disseminate knowledge, rather than merely processing information. Grant (1996) further developed the KBT by proposing that knowledge integration is the primary task of the firm. He posited that firms exist because they can integrate specialized knowledge more efficiently than the market, thereby creating value. Grant (1996) identified four mechanisms for knowledge integration: rules and directives, sequencing, routines, and group problem-solving and decision-making.

LITERATURE REVIEW

Knowledge Work Systems: Are specialized tools and technologies designed to support the creation, integration, and dissemination of knowledge within organizations, particularly among knowledge workers. These systems play a pivotal role in enabling organizations to effectively manage their intellectual capital, driving innovation, improving decision-making processes, and enhancing overall performance (Davenport & Prusak, 1998). Over the years, KWS have evolved as essential components of knowledge management strategies, particularly in industries such as oil and gas, healthcare, and technology, where complex information must be managed and leveraged for operational success.

According to Choo (2006), KWS are designed to assist knowledge workers, such as engineers, scientists, and analysts, in generating, managing, and applying knowledge to solve complex problems. These systems encompass a variety of tools, including knowledge databases, collaboration platforms, enterprise resource planning (ERP) systems, and expert systems. The primary goal of KWS is to capture, store, and organize knowledge, making it readily available to employees who require it to perform their tasks efficiently.

Davenport and Prusak (1998) emphasize that KWS go beyond simple data management, offering sophisticated solutions that facilitate the creation of new knowledge through analysis and interpretation of information. For example, expert systems can simulate human reasoning to provide solutions to specific problems, thereby increasing the accuracy and speed of

decision-making processes. This capability is particularly useful in industries that rely heavily on technical expertise and require precise operational decision-making.

Organizational Sustainability: It encompasses the ability of an organization to maintain its operations, adapt to changing circumstances, and create long-term value for its stakeholders while minimizing its environmental and social impacts. For oil and gas industry in South-South Nigeria, organizational sustainability is of paramount importance due to the industry's significant environmental footprint, the socio-economic implications for local communities, and the finite nature of fossil fuel resources. According to Oguntade and Mafimisebi (2011), organizational sustainability in the Nigerian oil and gas industry requires a holistic approach that integrates economic, environmental, and social dimensions. They argue that companies must strike a balance between maximizing profitability, minimizing environmental degradation, and contributing to the socio-economic development of host communities. Failure to address any of these components can jeopardize the long-term viability of an organization and erode its social license to operate.

Akinwale and Adekunle (2019) highlight the importance of effective stakeholder engagement and community relations in achieving organizational sustainability for oil and gas companies in Nigeria. They emphasize the need for transparent and inclusive decision-making processes, as well as robust mechanisms for addressing community grievances and managing social conflicts. By fostering trust and collaboration with local communities, companies can mitigate risks, enhance their reputation, and secure long-term access to resources. Also, Adegbite and Nakajor (2011) examine the role of corporate governance in promoting organizational sustainability in the Nigerian oil and gas industry. They argue that strong governance structures, ethical leadership, and a commitment to transparency and accountability are essential for ensuring responsible and sustainable operations. Effective corporate governance can help companies navigate complex regulatory environments, manage environmental risks, and align their practices with societal expectations.

Eweje (2006) explores the concept of environmental sustainability in the Nigerian oil and gas industry, with a particular focus on the Niger Delta region. He emphasizes the need for companies to adopt sustainable practices throughout their operations, from exploration and production to decommissioning and site remediation. He advocates for the implementation of robust environmental management systems, the adoption of cleaner technologies, and the promotion of biodiversity conservation efforts. Omofonmwan and Odia (2009) investigate the social dimensions of organizational sustainability in the Nigerian oil and gas industry, highlighting the importance of corporate social responsibility (CSR) initiatives. They argue that companies should prioritize the development of human capital, support local economic diversification, and invest in infrastructure and social services within host communities. By contributing to the socio-economic well-being of local populations, companies can foster goodwill, enhance their reputation, and secure a stable operating environment.

Ite (2007) investigates the role of multi-stakeholder partnerships in promoting organizational sustainability in the Nigerian oil and gas industry. He argues that collaborative efforts among companies, government, civil society, and local communities are crucial for addressing complex environmental and social issues. Such partnerships can leverage diverse expertise, resources, and perspectives, leading to more effective and sustainable solutions that address the needs and concerns of all stakeholders. Omofonmwan and Osa-Edoh (2008) focus on the importance of effective waste management practices for achieving organizational sustainability in the Nigerian oil and gas industry. They highlight the environmental and public health risks associated with improper waste disposal, particularly in the Niger Delta region. The authors

emphasize the need for companies to adopt best practices in waste management, including waste minimization, recycling, and proper treatment and disposal of hazardous materials.

Akpan (2014) examines the role of innovation and technology adoption in enhancing organizational sustainability in the Nigerian oil and gas industry. He argues that the adoption of cleaner and more efficient technologies can help companies reduce their environmental footprint, improve operational efficiency, and enhance their long-term competitiveness. Akpan highlights the importance of investing in research and development, as well as fostering an organizational culture that embraces innovation and continuous improvement. Overall, the literature on organizational sustainability in the Nigerian oil and gas industry underscores the multifaceted nature of the challenge and the need for a comprehensive and integrated approach. Companies must address economic, environmental, and social dimensions, engage with stakeholders, adopt responsible practices, and contribute to the sustainable development of host communities. By doing so, they can secure their long-term viability, maintain their social license to operate, and contribute to the sustainable development of Nigeria's oil and gas industry.

Growth: Organizational growth is a fundamental aspect of business strategy and a key driver of organizational sustainability. It refers to the increase in an organization's size, scope, or market presence over time. Growth can be measured in various dimensions, including revenue, market share, number of employees, geographical expansion, and product or service diversification. One of the primary dimensions of organizational growth is revenue growth. This metric reflects the increase in an organization's sales or income over a given period, which is often considered a key indicator of success and sustainability (Adegbie & Fakile, 2019). Revenue growth can be achieved through various strategies, such as expanding into new markets, introducing new products or services, increasing sales and marketing efforts, or acquiring other businesses. Sustained revenue growth is essential for organizations to remain competitive, invest in innovation, and maintain profitability (Adeyemo & Tope, 2021).

Market share is another critical dimension of organizational growth. It represents an organization's percentage of total sales or market presence within a specific industry or market segment (Ogbo & Ukpere, 2014). Increasing market share can be achieved through effective marketing strategies, product differentiation, competitive pricing, and superior customer service. A larger market share not only signifies an organization's dominance but also enhances its ability to influence industry dynamics and secure a sustainable competitive advantage (Odirichukwu & Okurime, 2021). Also, geographical expansion is another avenue for organizational growth. Companies can expand their operations into new regions or countries to tap into untapped markets, diversify their customer base, and reduce dependence on a single market (Adegbie & Fakile, 2019). Geographical expansion can be achieved through various methods, such as establishing new offices or facilities, forming strategic partnerships, or acquiring local businesses. However, this growth strategy often requires significant resources, cultural adaptability, and a deep understanding of local market conditions (Ogbo & Ukpere, 2014). Product or service diversification is another approach to organizational growth. By introducing new offerings or expanding into adjacent markets, organizations can leverage their existing capabilities, reduce reliance on a single product or service line, and cater to a broader customer base (Odirichukwu & Okurime, 2021). Diversification can be achieved through internal research and development efforts, strategic acquisitions, or partnerships with other organizations. However, diversification also carries risks, such as stretching resources too thin or deviating from the organization's core competencies (Adeyemo & Tope, 2021).

By leveraging these systems, organizations can make informed decisions about growth opportunities, identify potential risks and challenges, and develop strategies to capitalize on emerging opportunities. Knowledge management systems can also support innovation and product development processes, which are crucial for achieving sustainable growth. As noted by Adegbie and Fakile (2019) knowledge management systems can facilitate the sharing of knowledge and ideas across different functional areas, fostering collaboration and accelerating the development of new products, services, or business models." By enabling the effective sharing and integration of knowledge across different functional areas, these systems can foster collaboration, facilitate knowledge transfer, and accelerate the development of new products, services, or business models. Moreover, knowledge management systems can enhance an organization's ability to adapt to changing market conditions and customer needs. As Ogbo and Ukpere (2014) highlight, "By capturing and disseminating best practices, lessons learned, and experiential knowledge, these systems can enable organizations to quickly respond to market shifts, adjust their strategies, and remain agile in the face of disruption." Additionally, knowledge management systems can support the effective integration and knowledge transfer during mergers, acquisitions, or geographical expansions.

Adeyemo and Tope (2021) note that capturing and documenting organizational knowledge, these systems can facilitate the smooth transition of knowledge and processes, mitigating the risks associated with growth initiatives and ensuring the preservation of valuable intellectual capital. Additionally, Adeyemo and Tope (2021) emphasize the significance of market share growth in the Nigerian oil and gas industry, noting that "Increasing market share allows companies to solidify their market position, gain bargaining power, and secure long-term contracts with customers. Geographical expansion is another growth strategy relevant to the Nigerian oil and gas industry. As Odirichukwu and Okurime (2021) explain, by expanding their operations to other regions within Nigeria or internationally, oil and gas companies can tap into new reserves, diversify their production portfolios, and mitigate the risks associated with relying on a single location.

Profitability: Profitability is a fundamental concept in business and a crucial determinant of organizational sustainability. It refers to the ability of an organization to generate a surplus of revenues over expenses, ensuring financial viability and long-term success. Profitability is not only essential for reinvesting in growth and innovation but also for attracting investors, retaining talent, and maintaining a competitive edge in the market. Several factors contribute to an organization's profitability, including cost management, operational efficiency, and innovation. Cost management involves the strategic allocation and optimization of resources to minimize expenses while maximizing value creation. Effective cost management strategies, such as lean operations, supply chain optimization, and process improvements, can significantly enhance profitability by reducing waste, streamlining processes, and minimizing unnecessary expenditures (Porter, 1985). Operational efficiency is another critical factor that impacts profitability. It refers to the ability of an organization to maximize output while minimizing the input of resources, such as labour, materials, and energy. Efficient operations can be achieved through continuous process improvements, automation, and the adoption of best practices (Slack et al., 2010). By optimizing operational processes and minimizing inefficiencies, organizations can reduce costs, increase productivity, and ultimately improve profitability.

Innovation is a key driver of profitability and organizational sustainability. By developing new products, services, or business models, organizations can create differentiated offerings, tap into new market opportunities, and stay ahead of competitors (Drucker, 1985). Innovation can

also lead to improved operational processes, cost reductions, and enhanced customer satisfaction, all of which contribute to increased profitability (Damanpour & Evan, 1984). In the context of the Nigerian oil and gas industry, profitability is of paramount importance due to the capital-intensive nature of the industry, fluctuating oil prices, and increasing competition (Nwachukwu et al., 2017). Cost management is particularly critical for oil and gas companies in Nigeria, as they face significant operational expenses related to exploration, drilling, production, and transportation (Iledare & Nweke, 2001). Adeniyi and Udo (2019) highlight the importance of operational efficiency for Nigerian oil and gas companies, stating, optimizing operational processes and minimizing inefficiencies can significantly improve profitability in this resource-intensive industry, where even small improvements in efficiency can translate into substantial cost savings. They further emphasize the role of technology and innovation in driving operational efficiency and profitability in the Nigerian oil and gas sector. Innovation is also crucial for the long-term profitability and sustainability of Nigerian oil and gas companies. As Okoroafor and Obeta (2019) note, innovation in exploration and production techniques, as well as the development of new products and services, can help these companies diversify their revenue streams, remain competitive in the market, and adapt to changing energy demands and environmental regulations." Knowledge management systems play a vital role in supporting profitability and long-term financial sustainability by enabling organizations to leverage their intellectual capital and knowledge assets. These systems can facilitate the capture, organization, and dissemination of valuable knowledge related to cost management, operational best practices, and innovation (Dalkir, 2011).

Adegbie and Fakile (2019) highlight the importance of knowledge management systems for innovation in the Nigerian oil and gas industry, stating, knowledge management systems can support the sharing of technical knowledge, research findings, and market insights, enabling Nigerian oil and gas companies to develop innovative exploration and production techniques, optimize operational processes, and create new products and services to meet evolving energy demands. In addition to supporting cost management, operational efficiency, and innovation, knowledge management systems can also contribute to profitability by enabling organizations to make better-informed decisions based on collective knowledge and insights (Davenport & Prusak, 1998). By providing access to relevant knowledge and analytics, these systems can support data-driven decision-making, strategic planning, and risk mitigation, ultimately leading to improved profitability and financial sustainability. However, it is important to note that the effective implementation and utilization of knowledge management systems require a supportive organizational culture that values knowledge sharing, continuous learning, and innovation (Ndlela & Du Toit, 2001). Organizations must foster an environment that encourages open communication, collaboration, and the active participation of employees in knowledge capture and dissemination processes. Furthermore, the alignment of knowledge management systems with the organization's overall business strategy and objectives is crucial for maximizing their impact on profitability and financial sustainability (Alavi & Leidner, 2001). Organizations should ensure that their knowledge management initiatives are closely aligned with their strategic goals, performance metrics, and operational processes. Additionally, knowledge management systems can contribute to revenue growth and market expansion, which are critical drivers of profitability. By capturing and disseminating market intelligence, customer insights, and competitive analysis, these systems can inform strategic decisions related to product development, pricing strategies, and market entry (Omotayo, 2015). This can help organizations identify new revenue streams, tailor their offerings to customer needs, and capitalize on emerging market opportunities, ultimately driving top-line growth and profitability.

METHODOLOGY

This study adopted the correlational research approach, taken cognizance of cross sectional survey. The population of the study consists of 19 upstream oil and gas companies operating in south-south, Nigeria. Owing to the size of the study population, the entire population was sampled using the census approach. However, sampling elements from the study population comprised of 57 management staff of the 19 upstream oil and gas companies in south-south, Nigeria based on 3 representatives of the 19 companies. The primary data source was adopted through the use of structured closed ended questionnaire with collected data analysed with descriptive and inferential statistics. The study hypotheses tested using Pearson Product Moment Correlation statistics and presented with the aid of the Statistical Package for Social Science (SPSS) version 20.0.

RESULT AND DISCUSSION OF FINDINGS

Descriptive Statistics

Table 1: Descriptive Statistics for Knowledge Work System

	N	Mean	Std. Deviation
The use of knowledge work system increases employee effectiveness.	48	3.23	1.036
Knowledge work system facilitates collaboration, communication, and information sharing among knowledge workers.	48	3.25	.934
Knowledge work system support remote work environments, enabling knowledge workers to access relevant knowledge regardless of their physical location.	48	3.10	1.115
The use of knowledge work system enhances organizational sustainability by fostering innovation and continuous improvement.	48	3.04	1.129
Valid N (listwise)	48		

Source: SPSS Output 2024 version 20.0

Table 1: illustrates that there is a high level of confirmation (where $x > 2.50$) as regards the indicators of knowledge work systems. The construct examined the context and manifestations of knowledge work systems within the target organizations with indicators aimed at examining respondents' perception of knowledge work system through its indicators. The results affirm to all four indicators of knowledge work system within the target organizations as also supported by the low disparity in response (SD <2.00). The implication of these responses is that the respondents in the oil and gas companies are strongly of the opinion that knowledge work system is a serious observed phenomenon recently brought to the organization due information technology for efficient organizational sustainability, hence are largely on the agreement range of the scale.

Table 2: Descriptive Statistics for Growth

	N	Mean	Std. Deviation
The reduction of stationeries in organization through the use of electronic document management system enhances organizational growth.	48	3.04	1.129
Effective knowledge work system utilization increases organizational growth.	48	3.21	1.031
The process of reducing expenses in organization increases chances of organizational growth.	48	3.13	1.024
Good knowledge storage enhances organizational growth.	48	2.94	1.119
Valid N (listwise)	48		

Source: SPSS Output 2024 version 20.0

The data in Table 2 illustrates that there is a high level of confirmation (where x > 2.50) as regards the indicators of growth which is a measure of organizational sustainability. The construct examined the context and manifestations of growth within the target organizations with indicators aimed at examining respondents' perception of growth through its indicators. The results affirm to all four indicators of growth within the target organizations as also supported by the low disparity in response (SD <2.00). The implication of these responses is that the respondents in the oil and gas companies in south-south, Nigeria are strongly of the opinion that growth is an observed phenomenon in their organizations and hence are largely on the agreement range of the scale.

Table 3: Descriptive Statistics for Profitability

	N	Mean	Std. Deviation
The use of electronic document management system enhances organizational profitability level.	48	2.94	1.040
Effective storage of organizational knowledge enhances chances of profitability.	48	3.06	1.099
The level of profit margin of organization detects the sustainability of organization.	48	3.02	1.082
Poor handling of knowledge management system may affect organizational profitability.	48	3.02	1.101
Valid N (listwise)	48		

Source: SPSS Output 2024 version 20.0

The data in table 3 illustrates that there is a high level of confirmation (where x > 2.50) as regards the indicators of profitability which is a measure of organizational sustainability. The construct examined the context and manifestations of profitability within the target organizations with indicators aimed at examining respondents' perception of profitability through its indicators. The results affirm to all four indicators of profitability within the target organizations as also supported by the low disparity in response (SD <2.00). The implication of these responses is that the respondents in the oil and gas companies in south-south, Nigeria are strongly of the opinion that profitability is an observed phenomenon in their organizations and hence are largely on the agreement range of the scale.

Knowledge Work System and Organizational Sustainability

Table 4: shows the result of correlation matrix obtained for knowledge work system and organizational sustainability. Also displayed in the table is the statistical test of significance (p - value), which makes us able to answer our research question and generalize our findings to the study population.

Table 4: Correlations Matrix for Knowledge Work Systems

		Knowledge Work Systems	Growth	Profitability
Knowledge Work System	Pearson Correlation	1	.990**	.967**
	Sig. (2-tailed)		.000	.000
	N	48	48	48
Growth	Pearson Correlation	.990**	1	.975**
	Sig. (2-tailed)	.000		.000
	N	48	48	48
Profitability	Pearson Correlation	.967**	.975**	1
	Sig. (2-tailed)	.000	.000	
	N	48	48	48

**. Correlation is significant at the 0.01 level (2-tailed).

The correlation coefficient (r) result in table 4 was used to answer the research question 2 stated in the chapter one of this study. Table 4 shows a Pearson Product Moment Correlation Coefficient (r) of 0.990 on the relationship between knowledge work system and growth. This value implies that strong relationship exists between the variables. The direction of the relationship indicates that the correlation is positive which implying that, an increase in organization growth was as a result of the adoption of knowledge work system. Therefore, there is a strong positive relationship between knowledge work system and growth of upstream oil and gas companies in South-South, Nigeria.

Similarly, Table 4 shows a Pearson Product Moment Correlation Coefficient (r) of 0.967 on the relationship between knowledge work system and profitability. This value implies that a strong relationship exists between the variables. The direction of the relationship indicates that the correlation is positive; implying that an increase in profitability was as a result of the adoption of knowledge work system. Therefore, there is a strong positive correlation between knowledge work system and profitability of upstream oil and gas companies in South-South, Nigeria. Therefore, to enable us accept or reject hypotheses 1 & 2 as well as generalizing our findings to the study population, the p- value was used as shown below:

H_{o1}: There is no significant relationship between knowledge work system and growth of upstream oil and gas companies in south-south, Nigeria

Similarly displayed in the Table 4 is the statistical test of significance (p-value) which makes possible the generalization of our findings to the study population. From the result obtained from Table 5, the sig- calculated is less than significant level ($p = 0.000 < 0.05$). Therefore, based on this finding the null hypothesis earlier stated is hereby rejected and the alternate

upheld. Thus; there is a significant positive relationship between knowledge work system and growth of upstream oil and gas companies in South-South, Nigeria.

H_{o2}: There is no significant relationship between knowledge work system and profitability of upstream oil and gas companies in south-south, Nigeria

Also displayed in the Table 4 is the statistical test of significance (p-value) which makes possible the generalization of our findings to the study population. From the result obtained from Table 5, the sig- calculated is less than significant level ($p = 0.000 < 0.05$). Therefore, based on this finding the null hypothesis earlier stated is hereby rejected and the alternate upheld. Thus; there is a significant positive relationship between knowledge work system and profitability of upstream oil and gas companies in South-South, Nigeria.

Therefore, the results for the study hypotheses with regards to the relationship between knowledge work system between growth and profitability, the measures of organizational sustainability measures are stated as follows:

i. There is a strong positive significant relationship between knowledge work system and growth, the measure of organizational sustainability of upstream oil and gas companies in South-South, Nigeria.
ii. There is a strong positive significant relationship between knowledge work system and profitability, the measure of organizational sustainability of upstream oil and gas companies in South-South, Nigeria.

Conclusion

The investigation of this study has showed that knowledge work systems serve as a crucial catalyst for organizational sustainability in the upstream oil and gas sector of South-South Nigeria. Its application facilitates knowledge sharing, fostering innovation, and ensuring operational efficiencies. Knowledge work systems (KWS) enhance the capacity of these companies to meet the growing demands for environmental responsibility and sustainable development. The integration of knowledge work systems will not only ensure the growth and profitability of these companies but also contribute to the broader goals of environmental sustainability in the region.

Recommendations

Therefore, based on the study findings, we recommended as follows:

i. Management of upstream oil and gas companies in south-south, Nigeria should implement the use of knowledge work systems in their operations as it enhances growth and the increases the companies' sustainability goal.

ii. Management of upstream oil and gas should increase the adoption of knowledge work systems in their organization as it has shown evidence of profit maximization through it knowledge sharing ability and information flow among organizational members thereby decreasing factors that affect organizational performance.

REFERENCES

Adeyemo, A. B., & Tope, O. S. (2021). Knowledge management practices and organizational growth in the Nigerian Oil and Gas Industry. *Journal of Business and Management Studies, 7*(1), 1-18.

Abioye, T. (2019). The dynamics of oil and gas in Nigeria: Impacts and sustainability. *Journal of Energy Studies, 7*(2), 89-104.

Akinwale, Y. O., & Adekunle, O. A. (2019). Stakeholder engagement and corporate sustainability in the Nigerian oil and gas industry. *SAGE Open, 9*(4), 215 – 225.

Alavi, M., & Leidner, D. E. (2001). Knowledge management and knowledge management systems: Conceptual foundations and research issues. *MIS Quarterly, 25*(1), 107-136.

Alavi, M., & Leidner, D. E. (2001). Knowledge management and knowledge management systems: Conceptual foundations and research issues. *MIS Quarterly, 25*(1), 107-136.

Adegbite, E., & Nakajor, H. (2011). Corporate governance and corporate social responsibility: The struggle for institutional legitimacy and sustainability in the Nigerian oil industry. CSGR Working Paper 273/11. Retrieved from https://cris.brighton.ac.uk/ws/portalfiles/portal/3629363/273.pdf

Adeniye, A. A., & Udo, G. J. (2019). Knowledge management and competitiveness of Oil and Gas companies in Nigeria. *International Journal of Knowledge Management, 15*(3), 1-17.

Adegbie, F. F., & Fakile, A. S. (2019). Knowledge management and organizational resilience in Nigerian Oil and Gas Industry. *International Journal of Energy Economics and Policy, 9*(4), 315-322.

Akpan, W. (2014). Sustainable development in the Nigerian oil and gas industry: The role of technology. *In N. Diale & G. Nwanjioku (Eds.), Sustainable Development in the Nigerian Oil and Gas Industry (89-106).* Anchor Academic Publishing.

Choo, C. W. (2006). *The knowing organization: How organizations use information to construct meaning, create knowledge, and make decisions (2nd ed.)*. Oxford University Press.

Choo, C. W. (2006). *The knowing organization: How organizations use information to construct meaning, create knowledge, and make decisions (2nd ed.).* Oxford University Press.

Davenport, T. H., & Prusak, L. (1998). *Working knowledge: How organizations manage what they know.* Harvard Business School Press.

Damanpour, F., & Evan, W. M. (1984). Organizational innovation and performance: The problem of "organizational lag". *Administrative Science Quarterly, 29*(3), 392-409.

Dalkir, K. (2011). *Knowledge management in theory and practice (2nd ed.).* MIT Press.

Ebohon, O. J., & Ogedengbe, P. S. (2012). Political instability and the sustainability of Nigeria's oil and gas industry. *International Journal of Energy Research, 36*(10), 1343-1354.

Eweje, G. (2006). Environmental costs and responsibilities resulting from oil exploration in developing countries: The case of the Niger Delta of Nigeria. *Journal of Business Ethics, 69*(1), 27-56.

Grant, R. M. (1996). Toward a knowledge-based theory of the firm. Strategic Management *Journal, 17*(S2), 109-122.

Hansen, M. T., Nohria, N., & Tierney, T. (1999). What's your strategy for managing knowledge? *Harvard Business Review, 77*(2), 106-116.

Iledare, O. O., & Nweke, A. O. (2001). Profitability of the domestic crude oil industry in Nigeria. *The Journal of Energy and Development, 26*(2), 193-212.

Ndlela, L. T., & Du Toit, A. S. A. (2001). Establishing a knowledge management programme for competitive advantage in an enterprise. *International Journal of Information Management, 21*(2), 151-165.

Nwachukwu, C., Vitalis, A., & Albert, G. (2017). Managing employee performance for sustainable organizational growth and productivity in Nigeria. *International Journal of Advanced Studies in Economics and Public Sector Management, 5*(1), 1-15.

Nonaka, I., & Takeuchi, H. (1995). *The knowledge-creating company: How Japanese companies create the dynamics of innovation*. Oxford University Press.

Ofori-Dankwa, J., & Julian, S. D. (2013). The complexities of knowledge management in turbulent environments: The case of the oil and gas industry. *Journal of Knowledge Management, 17*(2), 232-248.

Okafor, C. N., & Egbu, C. O. (2019). Role of employee involvement in the development and implementation of knowledge management systems for sustainability in the Nigerian construction industry. *International Journal of Construction Management, 19*(6), 504-518.

Omofonmwan, S. I., & Odia, L. O. (2009). Oil exploitation and conflict in the Niger-Delta region of Nigeria. *Journal of Human Ecology, 26*(1), 25-30.

Ogbo, A. I., & Ukpere, W. I. (2014). The impact of effective human resource management on organisational performance: A study of private organisations in Nigeria. *Mediterranean Journal of Social Sciences, 5*(1), 134-142.

Odirichukwu, P. C., & Okurime, G. E. (2021). Knowledge management and organizational productivity in Nigerian Oil and Gas Companies. *International Journal of Knowledge Management, 17*(1), 1-19.

Omotayo, F. O. (2015). Knowledge management as an important tool in organisational management: A review of literature. *Library Philosophy and Practice, 1*(1), 1-23.

Oguntade, A. E., & Mafimisebi, T. E. (2011). Contributions of corporate social responsibility to agriculture and rural development in Nigeria. *The Journal of Food and Agriculture, 4*(1), 58-64.

Porter, M. E. (1985). C*ompetitive advantage: Creating and sustaining superior performance*. The Free Press.

Slack, N., Chambers, S., & Johnston, R. (2010). *Operations Management (6th ed.).* Pearson.

Udo-Inyang, U. I. (2015). Environmental sustainability and oil exploration in Nigeria: A review of Niger Delta cases. *Journal of Environmental Science and Technology, 8*(3), 195-204.