

DATA QUALITY MANAGEMENT AND RESPONSIVENESS OF INDIGENOUS OIL AND GAS COMPANIES IN RIVERS STATE, NIGERIA

FLORENCE ARIKEKPAR and PROF. A.E. BESTMAN

Department of Management, Faculty of Management Sciences, Rivers State University,
Nkpolu-Oroworukwo, Port Harcourt, Nigeria

ABSTRACTE

This study examined the relationship between data quality management and responsiveness of indigenous oil and gas companies in Rivers State, Nigeria. The dimension of data quality management used was data reliability. The study adopted the cross-sectional research survey design. Primary data was generated through structured questionnaire. The population of this study consisted of the thirty-three (33) registered and functional indigenous oil and gas companies in Rivers State, Nigeria. In this study the researcher adopted a census sampling technique to study all the thirty-three (33) registered and functional indigenous oil and gas companies in Rivers State, Nigeria because the population was small. However, the study respondents were 99 in the 33 indigenous oil and gas companies in Rivers State. The reliability of the instrument was achieved by the use of the Cronbach Alpha coefficient with all the items scoring above 0.70. The hypotheses were tested using the Spearman's Rank Order Correlation Coefficient. The tests were carried out at a 0.05 significance level. Findings revealed that there is a significant relationship between data quality management and responsiveness of indigenous oil and gas companies in Rivers State, Nigeria. The study concludes that there is a positive significant relationship between data quality management and the responsiveness of indigenous oil and gas companies in Rivers State, Nigeria. Therefore, the study recommended that Indigenous oil and gas companies should establish robust procedures to validate and verify the reliability of data. This includes conducting thorough checks to ensure data accuracy, consistency, and integrity. Implement validation rules, cross-referencing techniques, and data reconciliation processes to identify and address any discrepancies or errors.

Keywords: Data quality management, Responsiveness, Data reliability, Adaptability, Agility, Praocativeness

INTRODUCTION

Responsiveness is the act of being ready and disposed to offer services in a timely manner to clients in a bid to meet or surpass their expectations by utilizing information obtained from the market. Responsiveness is important in creating a good impression in the minds of customers which will likely increase their tendency in prolonging their relationship with the organization. Through technology, organizations are now able to perform creditably and respond swiftly in line with customers' expectations that will bring up the level of customers' satisfaction (Georgewill, 2021).

Responsiveness denotes the multiplicity of responsive measures that a firm can make with effortlessly, speed, and expertise upon detecting opportunity and threat in a business environment (Roberts & Grover, 2012). In order for organizations to be successful and achieve superior performance, firms must continually anticipate, determine and deliver customer satisfaction to the target markets, keep abreast with the emerging market trends, monitor competitor activities and proactively adjust their products and service offering, reconfigure internal resources and operating routines more effectively and efficiently than competitors (Gattiker, Chen & Goodhue, 2005). Firms can achieve this by adopting inter-organizational collaborations which suggests that the long-term purpose of a firm is to satisfy customers' needs while maximizing firm profits (Kohli & Jaworski, 2006). The primary goal of adopting effective inter-organizational collaborations and strategic alliances is improved organizational performance. The concept of inter-organizational collaborations has emerged as a central area concerning improving organization performance (Brudan, 2010). One key way to achieving responsiveness is by ensuring that an organisation puts in place a good data quality management system in place.

The management of data quality is essential for any business to succeed in today's information-driven world. Without proper data quality management, businesses are unable to accurately measure performance and make informed decisions. Data quality management (DQM) is becoming an increasingly important tool in business. Pipino, Lee and Wang (2002) argued that data quality management can be a powerful asset for businesses. They explain that data quality is defined by the ability of the data to meet the needs of the consumer and that it is a measure of the integrity, accuracy, and completeness of the data. The authors suggest that data quality management is necessary for businesses because it helps them make well informed decisions, identify and address data quality issues, and accurately measure performance. Furthermore, they claim that DQM can improve the quality of data by reducing errors, improving accuracy, and increasing the completeness of data. The authors also suggest that data quality management is essential for businesses to remain competitive in the modern market and to be able to make decisions quickly and accurately. In conclusion, Pipino, Lee and Wang (2002) clearly demonstrate the necessity of data quality management in business. Without this tool, businesses may lack the ability to make informed decisions, leading to losses of time and money.

It is necessary to understand the components of data quality management in order to ensure that data is reliable, accurate, and of high quality. The three main components of data quality management are accuracy, completeness, and timeliness. Accuracy is the most fundamental component and refers to the accuracy of the data itself. It is important to ensure that all data entered into the system is accurate and free from errors. Completeness refers to the amount of data that is available for analysis. It is important to have a full set of data in order to make accurate decisions and conclusions. Finally, timeliness refers to the speed at which data is available for analysis. Data that is not up-to-date can lead to incorrect decisions and conclusions. Therefore, it is important to ensure that data is accurate, complete, and timely in order to guarantee that data management is successful (Wang, 1998).

The purpose of this study was to examine data quality management and responsiveness of indigenous oil and gas companies in Rivers State, Nigeria. Specifically, the objective was to examine the relationship between data reliability and organizational responsiveness of Indigenous Oil And Gas Companies In Rivers State, Nigeria.

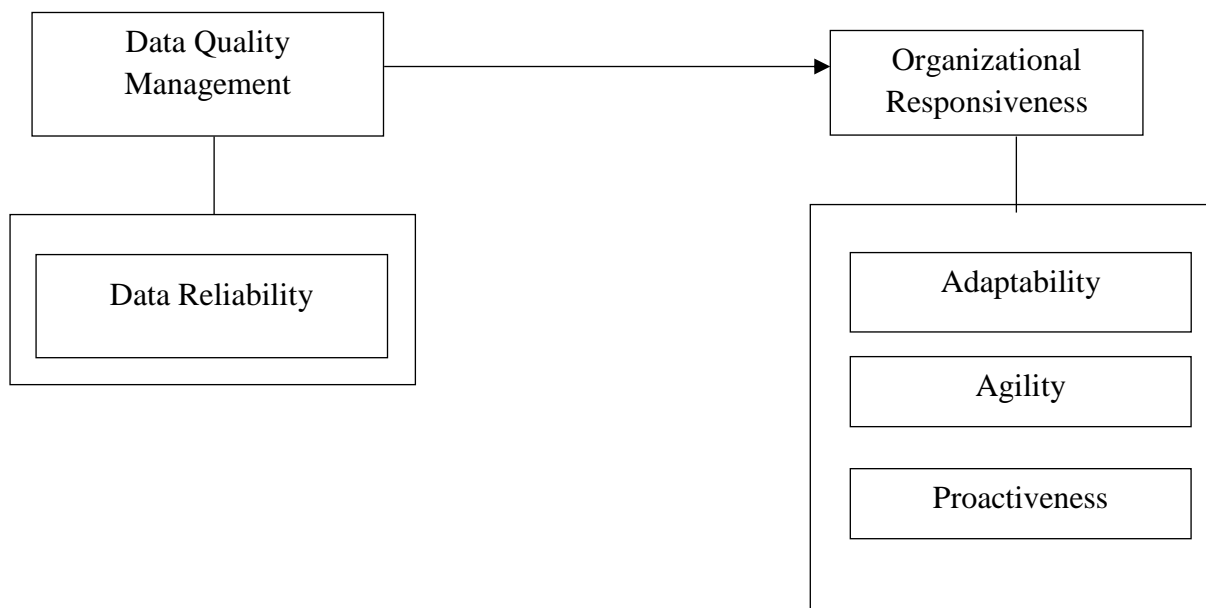


Figure 1: conceptual model for the relationship between data quality management and organisational resilience

Source: Desk Research (2023)

LITERATURE REVIEW

Theoretical Foundation

Technology Acceptance Model (TAM)

Technology Acceptance Model (TAM) was proposed by Davis (1989). Although, it was extended to TAM (Venkatesh & Davis, 2000) to explain perceived usefulness and usage intentions including social and cognitive influence. Subsequently, it was stretched to create a new version aka TAM3 (Venkatesh & Bala, 2008) to incorporate anchors and adjustments factors to perceived ease of use. However, Bernadette (1996) reports that the original TAM is more appropriate as compared with the later extensions. It is one of the models which provide the foundation for unveiling the influence of external variables on the adoption decisions based on the economic, usability and behavioral grounds.

The original TAM states that perceived usefulness is a major determinant of people’s intention to use technological innovation (Davis, 1989). It further proposes that the degree to which an IT system will be accepted is related to perceived usefulness (PU) and perceived ease of use (PEOU). PU can be defined as the user’s perception in terms of the likelihood that the innovation will increase their job performance within an organizational context. While PEOU is defined as the degree of the user’s expectation that innovation or system to be adopted can be free of effort (Davis, 1989). But unfortunately, it is being criticized for focusing more on technological aspect and not considering the effects of organizational and human factors viz-a-viz., the influence of external variables (Shih, Shih, Li, Chen, Chen & Chen, 2011; Wayne, 2016; Wu, Li, & Fu, 2011; Yarbrough & Smith, 2007). Notwithstanding, researchers have advocated the inclusion of customized variables and advocates for considering beyond the technical perspective (Marc, 2011; Shabir & Padma,

2017). Park (2009) reported that variables related to the actual use of information technology could be grouped into four categories: human context, technology context, social context, and organizational context. Here the social context means social influence on personal acceptance of technology usage and organizational context emphasizes the organization's influence or support related to information technology use.

Determinants of technology use have been investigated to predict and explain end-user adoption and acceptance of information technology and systems. One of the first theories in this field is Fishbein and Ajzen's generic Theory of Reasoned Action (TRA) that explains user's attitude towards technology in the organizations. TRA argues that a person's behavior is predicted by his or her behavioral intention. Now in this field the most prevalent model is Technology Acceptance Model (TAM) that was adapted from the Theory of Reasoned Action (TRA).

Concept of Data Quality Management

Data quality is a multidimensional construct and is defined as fitness for purpose (Chapman, 2005; Gamble & Goble, 2011; Shaw & Norton, 2008). High quality data facilitates operation, decision making and planning in most industries. While if data stakeholders assess the quality of data as poor, this assessment will sway their behaviour. Data Quality Management refers to the process of ensuring that data is accurate, consistent, complete, timely, and relevant for its intended purpose. It involves a series of activities that are designed to maintain and improve the quality of data throughout its lifecycle.

According to Redman and Wang, data quality is defined as "the degree to which data is fit for use by data consumers in their intended uses" (Redman and Wang, 1998). Data quality management is therefore focused on ensuring that data meets the needs of its intended users, whether they are internal or external to the organization.

There are several key components of data quality management, including data governance, data profiling, data cleansing, and data monitoring. Data governance involves the establishment of policies, standards, and procedures for managing data, while data profiling is the process of analyzing data to identify its quality characteristics. Data cleansing involves the correction or removal of errors and inconsistencies in data, while data monitoring involves ongoing monitoring of data to ensure that it continues to meet quality standards.

Effective data quality management can provide numerous benefits to organizations, including improved decision-making, increased operational efficiency, and enhanced customer satisfaction. However, it requires a commitment to ongoing improvement and a culture of data quality within the organization.

Timely availability of data is essential for successful decision-making. In order to ensure that data is available when and where it is needed, strategies must be implemented. According to Pappaioanou et al. (2003), organization-wide strategies can be implemented to ensure timely data availability. This includes improving the quality of existing data, developing a framework for decision-making, and utilizing technology for data storage, manipulation, and communication. Quality improvement initiatives should involve improving data accuracy, completeness, and clarity. Organizations should also develop a framework for decision-making that includes data collection protocols and clear processes for data analysis. Utilizing technology for data storage, manipulation, and communication is also important to ensure timely data availability. This includes the use of data warehouses, data mining, and data visualization tools. By utilizing these strategies, organizations can ensure that relevant data is available when and where it is needed to enable informed decision-making.

Data Reliability

Data reliability refers to the accuracy and consistency of data over time, across sources, and between users. Reliable data is considered trustworthy and can be used to make informed decisions, conduct research, and develop policies (Al Nuaimi, Al Neyadi, Mohamed & Al-Jaroodi, 2015). Data reliability is a crucial factor for decision makers when assessing information systems. According to Fisher, Chengalur-Smith (2003), there is a need for data to be reliable so that decision makers can trust the information being presented to them. This is because, if the data is not reliable, the decision makers will not be able to make informed decisions. Furthermore, data reliability is also important for the accuracy of the decisions. As such, it is important for decision makers to ensure that the data they are using is reliable, so that they can make decisions with a high level of accuracy. In addition, data reliability is also necessary for the effectiveness of decision-making processes. Without reliable data, decision makers may end up making decisions that are not effective, or even worse, that are detrimental to the organization. Therefore, data reliability is essential for effective decision making and should be taken into consideration when assessing information systems.

Data reliability is of utmost importance in decision making as it serves as the foundation upon which accurate and informed decisions are made. According to Fisher, Chengalur-Smith, and Ballou (2003), data reliability refers to the degree to which the data accurately represents the real-world phenomena it is intended to capture. In the context of decision making, relying on unreliable data can lead to erroneous conclusions and ineffective strategies. Decision makers heavily depend on data to understand trends, patterns, and relationships, and to identify opportunities and risks. Therefore, if the data is unreliable, decision makers may end up basing their judgments on inaccurate or incomplete information, leading to poor decision outcomes. To ensure data reliability, organizations must invest in robust data collection methods, implement data quality checks, and establish data governance frameworks to promote data accuracy, consistency, and integrity. By doing so, decision makers can have confidence in the data they rely on, enabling them to make informed and effective decisions.

Data reliability and accuracy are crucial aspects in scientific research and healthcare settings, as they directly impact the validity and credibility of the findings. Several factors can influence the reliability and accuracy of data. According to Zozus et al. (2015), one such factor is data collection methods. The authors argue that the choice of data collection methods can significantly affect the quality of the data obtained. For instance, self-report measures and subjective assessments may introduce biases and inaccuracies, leading to unreliable data. Additionally, the authors highlight the importance of data management and storage practices. Poor data management, such as inadequate documentation or lack of standardized protocols, can compromise the reliability of the data. Furthermore, data entry errors and inconsistencies can occur during data processing and analysis, leading to inaccurate results. It is crucial to implement quality control measures, such as double-checking data entry and performing data validation, to minimize these errors. Finally, the authors also emphasize the influence of the human factor on data reliability and accuracy. Factors such as lack of training, inadequate supervision, and personal biases can all contribute to errors and inconsistencies in data collection and interpretation. To address these challenges, researchers and healthcare professionals must strive to implement rigorous data collection and management practices, ensure appropriate training and supervision, and promote transparency and accountability throughout the research process (Zozus et al.). By recognizing and addressing these factors, researchers can enhance the reliability and accuracy of their data, leading to more robust and valid research outcomes. (Zozus et al. 2015).

Concept of Responsiveness

Responsiveness refers to the extent to which firms react rapidly to changes in a business environment to seize potential opportunities (Bernardes & Hanna, 2009). This responsiveness reflects “the efficiency and effectiveness with which firms sense, interpret, and act on market stimuli (Garrett, Covin & Slevin, 2009), and has been treated as a competitive advantage. For example, Wei and Wang (2011) proposed that this responsiveness represents a competitive marketing advantage by deploying resources to satisfy customer needs. Inman Sale, Green, Jr and Whitten (2011) noted that a firm with a high level of responsiveness outperforms its competitors in terms of operations. Inman *et al.* (2011) noted that a firm with a high level of responsiveness outperforms its competitors in terms of operations. In dynamic and complex environments, organizational responsiveness presents itself as the adaptive capability of the company. Organizations can anticipate unexpected changes and uncertainties more rapidly when this pattern fits their strategic direction. Zhou and Li (2010) underlined this point when they referred point to strategic orientation as an important driver of the adaptive capacity of a company. According to the authors, strategic orientation influences the way.

Adaptability

Adaptability is an aspect of resilience that reflects, learning, flexibility to experiment and adopt novel solutions, and the development of generalized responses to broad classes of challenges (Walter, et al., (2006). According to Bowden (1946) researching the past world war, adaptive capability is the ability or inclination of individuals or group to maintain an experimental attitude towards new situations as they occur and to act in terms of changing circumstances. Adaptability is addressed in this context through two approaches; socio environmental and organizational (Mc Manus, et al; 2008).

An organization’s ability to adapt is at the heart of their ability to display resilient characteristics. Starr, et al; (2003) discussed the importance of adaptation and notes that the aim is to create advantages over less adaptive competitors. This suggests that adaptability is also linked to competitiveness. Dalziell and Mc Manus (2004) define adaptability as the engagement and involvement of organizational staff so that they are responsible, accountable and occupied with developing the organization’s resilience through their work because they understand the links between the organization’s resilience and its long-term success. It is the ability of the system to respond to the changes in its external environment and to recover from damage of internal structures with the system that affect its ability to achieve its purpose.

Proactiveness

According to Onyema and Hamilton (2020) proactiveness is a firm’s ability to think ahead, foresee, initiate a change or take a first mover leap rather than being reactionary or defensive in its strategic posture. Proactiveness refers to an on-going perspective where a firm actively seeks to anticipate and take advantage of opportunities to develop and introduce new products and implement changes to existing firm’s strategies and tactics.

Pro-activeness is related to initiative and first-mover advantages and to taking initiative by anticipating and pursuing new opportunities (Lumpkin & Dess, 1996). The oxford dictionary defines pro-activeness as acting in anticipation of future problems, needs, or changes. Lumpkin & Dess (1996) argued that pro-activeness may be crucial to an Entrepreneurial Orientation because it suggests a forward-looking perspective that is accompanied by innovative and entrepreneurial activity. Pro-activeness relates to market opportunity in entrepreneurship by seizing initiative and acting opportunistically in order to shape the

environment, that is, to affect trends and, perhaps, even to create demand. The characteristics of a Proactive enterprise involve aggressiveness and unconventional tactics towards rival enterprises in the same market segment, such enterprises shape their environments by actively seeking and exploiting opportunities. Proactive firms introduce new products, technologies, administrative techniques to shape their environment and not react to it (Callaghan, 2009).

Agility

A standard definition of agility is that it is "... the ability to create and respond to change. It is a way of dealing with, and ultimately succeeding in, an uncertain and turbulent environment" (Agile Alliance, 2020). Gren and Lenberg (2019) have proposed a shorter and more straightforward definition of agility as "responsiveness to change". From these definitions, it becomes clear that the concept of agility is mostly concerned with organizational responsiveness and adaptability in what many commentators describe as increasingly turbulent and dynamic competitive environments (Millar, Groth & Mahon, 2018). Strategic agility has to do with the capacity to respond swiftly to changing situations as demonstrated by business organisations. The ability of an organisation to have the foresight to see the trend and forecast the future in order to respond appropriately defines the strategic agility of such an organisation.

Strategic Agility (SA) is the ability of a firm to respond swiftly to changing environmental conditions. The flexibility in the operational responses of firms to discontinuities and volatility in the business environment defines the SA of a firm. Firms that are embedded with SA capability can successfully predict and adapt to new opportunities and threats. In line with this, Mavengere (2013) posits that SA has to do with an organisation's sensitivity to or being armed with the foresight to understand and predict novel happenings in the environment where the organisation operates. It is the capability of a firm to identify and react to environmental opportunities and threats with affluence, speed, and nimbleness (Tallon & Pinsonneault, 2011).

Strategic agility has to do with the capacity to respond swiftly to changing situations as demonstrated by business organisations. The ability of an organisation to have the foresight to see the trend and forecast the future in order to respond appropriately defines the SA of such an organisation. Tende and Ekanem (2018) opine that SA is the capability of an organisation to predict, anticipate, and forecast trends and events in the business environment to fashion appropriate response with proactive moves. Therefore, survival is no longer guaranteed on the premise of having financial muscle or capital, but in the ability to adjust to changes in the environment and device means to stay relevant. Akhigbe and Onuoha (2019) posit that it is no longer the fittest organisation that lasts longer, but organisations with high resilience and capacity to adjust.

Data Quality Management and Responsiveness

by Mathieu and Zajac, (2002) who agreed that data management has been used to implement activities and functions that increase response from participants in functions within the organization, which are incredibly vital for valuable performance. Data quality is seen from the degree to which data is fit for use by data consumers in their intended uses" (Redman and Wang, 2008). Data quality management is therefore focused on ensuring that data meets the needs of its intended users, whether they are internal or external to the organization.

Studies shows that data quality management is anchored by data governance involves the establishment of policies, standards, and procedures for managing data, while data profiling

is the process of analyzing data to identify its quality characteristics. Data cleansing involves the correction or removal of errors and inconsistencies in data, while data monitoring involves ongoing monitoring of data to ensure that it continues to meet quality standards (Rui Li, Youtian Wang & Rong Du, 2019; Redman & Wang, 2020).

Effective data quality management can provide numerous benefits to organizations, including improved decision-making, increased operational efficiency, and enhanced customer satisfaction. Data management requires a commitment to ongoing improvement and a culture of data quality within the organization.

Timely availability of data is essential for successful decision-making. In order to ensure that data is available when and where it is needed, strategies must be implemented. According to Pappaioanou et al. (2003), organization-wide strategies can be implemented to ensure timely data availability. Quality improvement initiatives should involve improving data accuracy, completeness, and clarity. Organizations should also develop a framework for decision-making that includes data collection protocols and clear processes for data analysis (Kim & Cho, 2018; Malik, 2013; Winter & Davidson, 2018)

Based on the foregoing, the study thus hypothesized that:

- Ho₁:** Data reliability does not significantly relate with adaptability of indigenous oil and gas companies in Rivers State.
- Ho₂:** Data reliability does not significantly relate with agility of indigenous oil and gas companies in Rivers State.
- Ho₃:** Data reliability does not significantly relate with proactiveness of indigenous oil and gas companies in Rivers State.

METHODOLOGY

The study adopted the cross-sectional research survey design. Primary data was generated through structured questionnaire. The population of this study consisted of the thirty-three (33) registered and functional indigenous oil and gas companies in Rivers State, Nigeria. In this study the researcher adopted a census sampling technique to study all the thirty-three (33) registered and functional indigenous oil and gas companies in Rivers State, Nigeria because the population was small. However, the study respondents were 99 in the 33 indigenous oil and gas companies in Rivers State. The reliability of the instrument was achieved by the use of the Cronbach Alpha coefficient with all the items scoring above 0.70. The hypotheses were tested using the Spearman's Rank Order Correlation Coefficient. The tests were carried out at a 0.05 significance level.

DATA ANALYSIS AND RESULTS

Table 1: Correlations Matrix for Data reliability and Adaptability

			Data Reliability	Adaptabil ity
Spearman's rho	Data Reliability	Correlation	1.000	.756**
		Coefficient		
		Sig. (2-tailed)	.	.000
		N	78	78
	Adaptability	Correlation	.756**	1.000
		Coefficient		
Sig. (2-tailed)		.000	.	
	N	78	78	

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

Source: SPSS 23.0 Output

H₀₁: There is no significant relationship between data reliability and adaptability of indigenous oil and gas companies in Rivers State, Nigeria.

Table 1 shows a Spearman's correlation coefficient (rho) of 0.756 which indicates a positive very high relationship between data reliability and adaptability of indigenous oil and gas companies in Rivers State, Nigeria. This is indicative of a very strong correlation between data reliability and adaptability of indigenous oil and gas companies in Rivers State, Nigeria. Similarly displayed in Table 1 is the statistical test of significance (p - value), which makes possible the generalization of our findings to the study population. From the result obtained the probability value is (0.000) < (0.05) level of significance; hence the researcher rejects the null hypothesis and concludes that there is a significant relationship between data reliability and adaptability of indigenous oil and gas companies in Rivers State, Nigeria.

Table 2: Correlations Matrix for Data reliability and Agility

			Data Reliability	Agility
Spearman's rho	Data Reliability	Correlation Coefficient	1.000	.909**
		Sig. (2-tailed)	.	.000
		N	78	78
	Agility	Correlation Coefficient	.909**	1.000
		Sig. (2-tailed)	.000	.
		N	78	78

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

Source: SPSS 23.0 data Output, 2023

H₀₂: There is no significant relationship between data reliability and agility of indigenous oil and gas companies in Rivers State, Nigeria.

Table 2 shows a Spearman's correlation coefficient (rho) of 0.909 which indicates a positive very high relationship between data reliability and agility of indigenous oil and gas companies in Rivers State, Nigeria. This is indicative of a very strong correlation between data reliability and agility of indigenous oil and gas companies in Rivers State, Nigeria. Similarly displayed in Table 2 is the statistical test of significance (p - value), which makes possible the generalization of our findings to the study population. From the result obtained the probability value is (0.000) < (0.05) level of significance; hence the researcher rejects the null hypothesis and concludes that

there is a significant relationship between data reliability and agility of indigenous oil and gas companies in Rivers State, Nigeria.

Table 3: Correlations Matrix for Data reliability and Proactiveness

			Data Reliability	Proactiveness
Spearman's rho	Data Reliability	Correlation Coefficient	1.000	.686*
		Sig. (2-tailed)	.	.029
		N	78	78
	Proactiveness	Correlation Coefficient	.686*	1.000
		Sig. (2-tailed)	.029	.
		N	78	78

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

Source: SPSS 23.0 data Output, 2023

H₀₃: There is no significant relationship between data reliability and proactiveness of indigenous oil and gas companies in Rivers State, Nigeria.

Table 3 shows a Spearman's correlation coefficient (rho) of 0.686 which indicates a positive very high relationship between data reliability and proactiveness of indigenous oil and gas companies in Rivers State, Nigeria. This is indicative of a very strong correlation between data reliability and proactiveness of indigenous oil and gas companies in Rivers State, Nigeria. Similarly displayed in Table 3 is the statistical test of significance (p - value), which makes possible the generalization of our findings to the study population. From the result obtained the probability value is (0.000) < (0.05) level of significance; hence the researcher rejects the null hypothesis and concludes that there is a significant relationship between data reliability and proactiveness of indigenous oil and gas companies in Rivers State, Nigeria.

DISCUSSION OF FINDINGS

The general finding of this study revealed that there is a positive significant relationship between data quality management and responsiveness of indigenous oil and gas companies in Rivers State, Nigeria. This reinforces previous studies by Mathieu and Zajac, (2002) who agreed that data management has been used to implement activities and functions that increase response from participants in functions within the organization, which are incredibly vital for valuable performance. Data quality is seen from the degree to which data is fit for use by data consumers in their intended uses" (Redman and Wang, 2008). Data quality management is therefore focused on ensuring that data meets the needs of its intended users, whether they are internal or external to the organization.

Studies shows that data quality management is anchored by data governance involves the establishment of policies, standards, and procedures for managing data, while data profiling is the process of analyzing data to identify its quality characteristics. Data cleansing involves the correction or removal of errors and inconsistencies in data, while data monitoring involves ongoing monitoring of data to ensure that it continues to meet quality standards (Rui Li, Youtian Wang & Rong Du, 2019; Redman & Wang, 2020).

Effective data quality management can provide numerous benefits to organizations, including improved decision-making, increased operational efficiency, and enhanced customer satisfaction. Data management requires a commitment to ongoing improvement and a culture of data quality within the organization.

Timely availability of data is essential for successful decision-making. In order to ensure that data is available when and where it is needed, strategies must be implemented. According to Pappaioanou et al. (2003), organization-wide strategies can be implemented to ensure timely data availability. Quality improvement initiatives should involve improving data accuracy, completeness, and clarity. Organizations should also develop a framework for decision-making that includes data collection protocols and clear processes for data analysis (Kim & Cho, 2018; Malik, 2013; Winter & Davidson, 2018).

CONCLUSION AND RECOMMENDATION

The study concludes that there is a positive significant relationship between data quality management and the responsiveness of indigenous oil and gas companies in Rivers State, Nigeria. By effectively managing data quality, indigenous oil and gas companies in Rivers State are likely to have access to accurate and reliable information about their operations, customers, market trends, and other critical aspects. This high-quality data enables them to make informed decisions, respond quickly to changes, and adapt their strategies accordingly.

Therefore, the study recommended that Indigenous oil and gas companies should establish robust procedures to validate and verify the reliability of data. This includes conducting thorough checks to ensure data accuracy, consistency, and integrity. Implement validation rules, cross-referencing techniques, and data reconciliation processes to identify and address any discrepancies or errors.

REFERENCES

- Agile Alliance. (2020). What is agile? Retrieved from <https://www.agilealliance.org/agile101/what-is-agile/>
- Akhigbe, O., & Onuoha, B. (2019). Strategic agility and financial performance of selected Nigerian firms. *Journal of Accounting and Financial Management*, 5(1), 39-50.
- Al Nuaimi, E., Al Neyadi, H., Mohamed, N., & Al-Jaroodi, J. (2015). Applications of big data to smart cities. *Journal of Internet Services and Applications*, 6(1), 25.
- Bernadette, B. (1996). Reconsidering the technology acceptance puzzle. *Information systems research*, 7(2), 187-213.
- Bernardes, E. S., & Hanna, S. D. (2009). Enhancing organizational responsiveness through market learning and intelligence. *Journal of Business Research*, 62(11), 1153-1161.
- Bowden, G. (1946). *Adaptive capability: its assessment and development*. New York: Columbia University Press.
- Brudan, A. (2010). Rediscovering performance management: systems, learning and integration. *Measuring Business Excellence*, 14(1), 109-120.
- Chapman, P. (2005). *Data quality: the accuracy dimension*. Morgan Kaufmann.
- Dalziell, E. P., & McManus, S. (2004). Resilience, Vulnerability, and Adaptive Capacity: Implications for System Performance. Melbourne: Australian & New Zealand School of Government.
- Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS quarterly*, 319-340.
- Fisher, J., & Chengalur-Smith, I. (2003). A framework for information quality assessment. *Communications of the ACM*, 46(12), 120-125.
- Gamble, P. R., & Goble, C. A. (2011). Quality in data discovery and access: the role of metadata and curation. *International Journal of Digital Curation*, 6(2), 4-24.

- Garrett, R. P., Covin, J. G., & Slevin, D. P. (2009). Market responsiveness, top management risk taking, and the role of strategic leadership in entrepreneurial firms. *Journal of Business Venturing*, 24(2), 141-152.
- Gattiker, U. E., Chen, C. C., & Goodhue, D. L. (2005). Strategic orientation and firm performance in an artistic environment. *Journal of Managerial Issues*, 17(2), 239-255.
- Georgewill, U. P. (2021). The role of technology in enhancing customer satisfaction in the hospitality industry. *International Journal of Research in Business and Social Science*, 10(1), 78-88.
- Gren, L., & Lenberg, P. (2019). Complexity leadership and organizational agility. *Journal of Change Management*, 19(1), 1-14.
- Inman, R. A., Sale, R. S., Green, Jr, K. W., & Whitten, D. (2011). Strategic and operational responsiveness: Evidence from novice and expert entrepreneurs. *Journal of Small Business Management*, 49(2), 193-210.
- Kohli, A. K., & Jaworski, B. J. (2006). Co-creating value with customers. In *Handbook of relationship marketing* (pp. 79-102). SAGE Publications Ltd.
- Lumpkin, G. T., & Dess, G. G. (1996). Clarifying the entrepreneurial orientation construct and linking it to performance. *Academy of Management Review*, 21(1), 135-172.
- Malik, K. (2013). Human development report 2013. The rise of the South: Human progress in a diverse world. *The Rise of the South: Human Progress in a Diverse World (March 15, 2013)*. UNDP-HDRO Human Development Reports.
- Marc, N. (2011). *Factors affecting the design and implementation of decision support systems within organisations: Lessons from two case studies with the environment agency, England and Wales*. PhD Thesis, University of Southampton, Faculty of Social and human Sciences, School of Geography and Environment
- Mavengere, N. T. (2013). Strategic agility as a competitive advantage: A theoretical perspective. *Mediterranean Journal of Social Sciences*, 4(10), 143.
- McManus, S., Scott-Hoy, K., & Chen, H. (2008). Adaptability: The significance of coping and adjustment to the higher education environment. *Higher Education Research & Development*, 27(4), 359-370.
- Millar, C., Groth, M., & Mahon, J. (2018). The changing face of the workplace: Implications for HRM. *Journal of Organizational Effectiveness: People and Performance*, 5(1), 2-13.
- Onyema, E. M., & Hamilton, R. T. (2020). How entrepreneurship training, entrepreneurship education and enterprise skill development influence small firm performance: Evidence from Nigeria. *Journal of Small Business Management*, 58(2), 408-424.
- Pappaioanou, T., Malison, M., Wilkins, K., Otto, B., Goodman, R. A., Churchill, R., & Thacker, S. B. (2003). Strengthening capacity in developing countries for evidence-based public health: the data for decision-making project. *Social science & medicine*, 57(10), 1925-1937.
- Park, S. Y. (2009). An analysis of the technology acceptance model in understanding university students' behavioural intention to use e-learning. *Educational Technology & Society*, 12(3), 150-162.
- Pipino, L. L., Lee, Y. W., & Wang, R. Y. (2002). Data quality assessment. *Communications of the ACM*, 45(4), 211-218.
- Redman, T. C., & Wang, R. Y. (1998). Data quality and the bottom line: Achieving business success through a commitment to high-quality data. Butterworth-Heinemann.
- Roberts, N., & Grover, V. (2012). Investigating firm's customer responsiveness: The importance of a comprehensive, multidimensional framework. *Journal of Service Research*, 15(3), 332-344.

- Shabir, A. M., & Padma, T. (2017). Fuzzy decision support system for evaluation and prioritisation of critical success factors for the development of agricultural DSS. *International Journal of Multicriteria Decision Making*, 7(2), 146–172.
- Shaw, M. J., & Norton, J. M. (2008). Creating a context for data quality. *Journal of Business Research*, 61(12), 1219-1227.
- Shih, Y. Y., Shih, H. P., Li, Y. M., Chen, W. C., Chen, H. H., & Chen, C. Y. (2011). An empirical investigation of a modified technology acceptance model in ERP implementation in China. *International Journal of Human-Computer Interaction*, 27(10), 907-929.
- Starr, K. J., MacMillan, I. C., & Narasimha, P. N. (2003). Measuring dynamic capabilities: An investigation of performance measurement in an innovation-intensive industry. *Journal of Intellectual Capital*, 4(3), 296-312.
- Tallon, P. P., & Pinsonneault, A. (2011). Competing perspectives on the link between strategic information technology alignment and organizational agility: Insights from a mediation model. *MIS Quarterly*, 35(2), 463-486.
- Tende, J. J., & Ekanem, I. U. (2018). Strategic agility: A review of the literature. *International Journal of Management and Social Sciences Research*, 7(4), 1-7.
- Venkatesh, V., & Bala, H. (2008). Technology acceptance model 3 and a research agenda on interventions. *Decision Sciences*, 39(2), 273-315.
- Venkatesh, V., & Davis, F. D. (2000). A theoretical extension of the Technology Acceptance Model: Four longitudinal field studies. *Management Science*, 46(2), 186-204.
- Walter, F., Ross, J. M., & Christopher, A. N. (2006). Developing adaptive teams: A theory of compilation and performance across levels and time. In K. E. Kram & L. L. Thompson (Eds.), *Research in organizational change and development*. Emerald Group Publishing Limited.
- Wang, R. Y. (1998). A product perspective on total data quality management. *Communications of the ACM*, 41(2), 58-65.
- Wayne, H. (2016). Integrating the unified theory of acceptance and use of technology (UTAUT) and the technology acceptance model (TAM) to determine the factors that influence behavioral intention to use an e-learning system. *The International Journal of Management Education*, 14(2), 180-197.
- Wei, Y. S., & Wang, Y. C. (2011). The study of market orientation and organizational responsiveness in Taiwan. *African Journal of Business Management*, 5(30), 12156-12167.
- Wu, J. H., Li, Y. C., & Fu, C. Y. (2011). The adoption of mobile healthcare by hospital's professionals: An integrative perspective. *Decision Support Systems*, 51(3), 587-596.
- Yarbrough, A. K., & Smith, T. B. (2007). Technology acceptance among physicians: a new take on TAM. *Medical care research and review*, 64(6), 650-672.
- Zhou, K. Z., & Li, C. B. (2010). How strategic orientation and market orientation impact on firm performance: A study of Chinese manufacturers. *European Journal of Marketing*, 44(1/2), 45-70.