DATA ARCHIVING AND ORGANIZATIONAL COMPETITIVENESS OF INDIGENOUS OIL/GAS COMPANIES IN SOUTH-SOUTH, NIGERIA

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ABSTRACT

This study surveyed the relationship between data archiving and organizational competitiveness of indigenous oil/gas firms in South-South, Nigeria. The theoretical foundation for the study was laid on the knowledge based view. The study was conducted using a descriptive research design using a cross sectional survey approach. The targeted population comprised 165 principal officers of indigenous oil/gas firms in south-south, Nigeria. The study adopted a census sampling method since the population was small and manageable. Data was collected using a structured and close-ended questionnaire. Retrieved data was analyzed and results presented in tables, mean and standard deviation. The hypotheses were tested using the Spearman Rank Order of Correlation Coefficient. The findings revealed that there is a positive and significant relationship between data archiving and organizational competitiveness of indigenous oil/gas companies in South-South, Nigeria using the Pearson Product Moment Correlation tool at 95% confidence interval. Based on the findings made, it was therefore recommended that indigenous oil/gas firms should prioritize data archiving since it is integral to the competitiveness of indigenous oil/gas companies in South-South, Nigeria.

Keywords: Data archiving, Organizational Competitiveness, Technology Capability, Innovativeness and Responsiveness

INTRODUCTION

In today's highly competitive business environment, organizations are constantly seeking strategies to enhance their organizational competitiveness. According to Ramlall (2003), one effective strategy is to invest in human resource management (HRM) practices that foster employee engagement and development. Engaged and well-trained employees are more likely to contribute their skills and knowledge to improve organizational performance, resulting in a competitive advantage. Another strategy is to foster a culture of innovation and continuous improvement within the organization. This involves encouraging employees to generate new ideas, experiment with different approaches, and embrace change. Organizations that prioritize innovation are better equipped to adapt to market trends and customer needs, giving them a competitive edge. Additionally, organizations can enhance their competitiveness by building strong relationships with suppliers, customers, and other stakeholders. Collaborative partnerships and alliances can provide access to resources, expertise, and market opportunities that may not be readily available internally. By leveraging these relationships, organizations can strengthen their position in the market and gain a competitive advantage.

Organisational competitiveness is a crucial factor in today's dynamic business environment. It is the ability of an organization to outperform its competitors and achieve sustainable success. By focusing on key areas such as strategic planning, innovation, customer satisfaction, and continuous improvement, organizations can enhance their competitiveness and stay ahead in the market. The role of data creation in enhancing organizational competitiveness is undeniable. With the advent of advanced technologies and data analytics, companies now have the ability to collect, analyze, and leverage vast amounts of data to gain a competitive edge. Data creation is an essential

component of organizational competitiveness. By collecting and analyzing data effectively, organizations can better understand their customers, improve operational efficiency, and develop new products and services. Data has become the lifeblood of modern organizations, playing a crucial role in informing decision-making, improving efficiency, and driving innovation (Binsaeed, Grigorescu, Yousaf, Radu, Nassani & Tabirca, 2023). The ability to effectively create and manage data has become essential for organizational competitiveness. As technology continues to advance and data becomes increasingly abundant, organizations must prioritize data management strategies to harness its full potential. By doing so, organizations can gain a competitive edge in today's data-driven world and position themselves for long-term success.

In today's rapidly evolving business landscape, leveraging data has become a crucial strategy for organizations to develop new products and services and stay ahead in the market. As highlighted by Campbell et al. (2020), data provides valuable insights into customer preferences, market trends, and emerging opportunities, enabling businesses to make informed decisions and drive innovation. By analyzing large datasets, companies can identify patterns, correlations, and customer behaviors that were previously hidden, allowing them to uncover untapped market segments and develop tailored solutions to meet specific needs. Moreover, data-driven product development enables organizations to minimize risks by testing prototypes, validating assumptions, and iterating designs based on real-time feedback, resulting in more successful product launches. By continuously collecting and analyzing data, companies can also gather feedback on existing products and services, identify areas for improvement, and adapt their offerings to changing customer demands. This data-driven approach not only enhances customer satisfaction but also helps organizations maintain a competitive edge in the market.

The primary goal of data archiving is to optimize the utilization of primary storage resources, enhance system performance, and ensure that organizations can meet legal and regulatory obligations related to data retention (Kunduru & Kandepu, 2023). By categorizing and selectively storing data based on its lifecycle stage, businesses can free up valuable space on high-performance storage systems while still retaining access to information that holds historical, analytical, or compliance significance.

Data archiving encompasses a range of considerations, including the choice of storage solutions, implementation of robust security measures, adherence to compliance standards, and the development of efficient retrieval mechanisms (Abiodun, Alawida, Omolara & Alabdulatif, 2022). Whether through on-premises solutions, cloud-based platforms, or a combination of both, organizations must tailor their archiving strategies to align with their specific needs, industry regulations, and future scalability requirements.

Purpose of the Study

The main aim of this study is to examine the relationship between data creation and organisational competitiveness. While the specific objectives of the study are:

i. To examine the relationship between data archiving and technological capabilities
ii. To examine the relationship between data archiving and market share.
iii. To investigate the relationship between data archiving and responsiveness.

Conceptual Framework

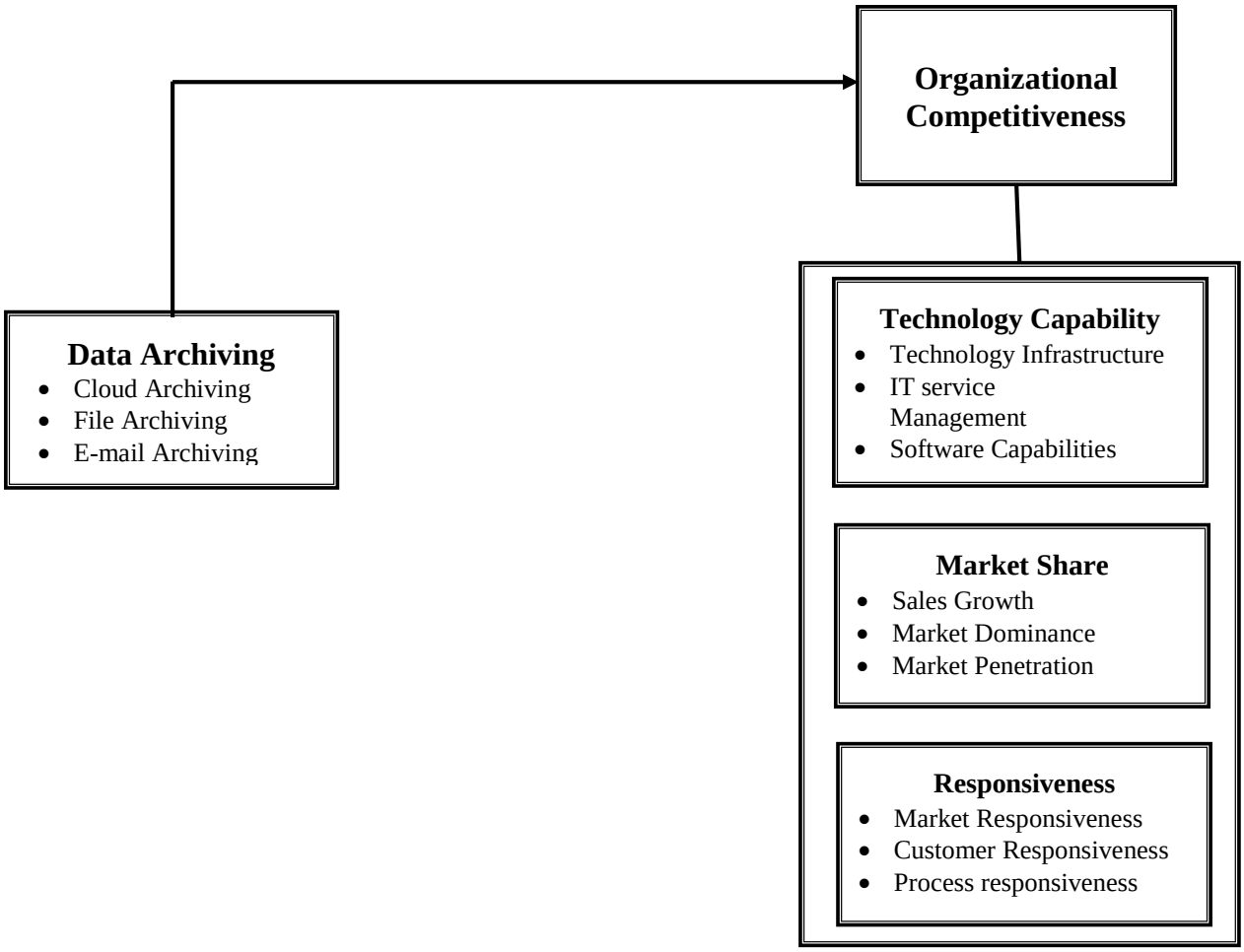

Fig 1.1 Conceptual framework of the relationship between data archiving and organizational competitiveness

Source*:* Desk Research (2023)

THEORETICAL FOUNDATION

Knowledge Based View

Knowledge Based Theory (KBT) posits that the primary role of the firms is the creation and application of knowledge (Spender, 1996). According to Grant (1996) the theory focuses on knowledge as a fundamental source of human productivity. The central premise of this theory is that knowledge that is largely tacit can be a source of competitive advantage. Such knowledge is difficult for competitors to imitate (Barney, 1991). This theory depicts organizations as repositions of knowledge and competences where knowledge is transformed into valuable products and services adapted to market needs to deal with competitive challenges (Kogut and Zander, 1992).

The ability of a firm to generate knowledge and effectively employ it through productive organizations determines its success and competitiveness (Drucker, 1988). Knowledge is created and held by individuals but it can become embedded within the organization as organizational processes and routines are performed repeatedly (Grant, 1996). Competitive advantage of firms

arises from their superior capability in creating and transferring knowledge (Lopez and Esteves, 2013). This study holds that knowledge helps organizational employees to learn and work more effectively contributing to better organizational performance.

The focus of this study is on the use of knowledge for organizational internal purposes. As an outgrowth of the resource-based view, the knowledge-based view focuses upon knowledge as the most important of the firm's resource (Cheng, Wang & Qu, 2020). According to this view, its rationale is based on the fact that certain key decisions need to be made by the top management regarding the management of knowledge.

One's decision is on the development of professional knowledge internally and modalities of doing it with an option of when it would be desirable to draw upon external expertise, and internal and external knowledge when jointly used through consultants. A third could be on how the internal knowledge can be marketed beyond organizational boundaries (Salina & Wan Fadzilah, 2010). This study focused on how the internal knowledge can be leveraged through the use of communities of practice and knowledge mapping, within a culture and structure that encourages knowledge sharing. Recent studies have pointed out the role of knowledge management (KM) and employees' knowledge sharing practices (Singh, 2019) in the enhancement of firm performance and the development of a firm's competitive advantage (Santoro, Bresciani & Giudic, 2019).

This view further proposes that the aforementioned decisions and others can only be effective if organizational members are accorded professional support in their day-today activities which include clarity of instructions, free flow of information, constant review and improvement of recurring tasks and transparent coordination techniques, (Salina & Wan Fadzilah, 2010). Furthermore, a study by Aminga (2015), recommends implementation of KM practices policy to improve institutional accountability and performance in public universities. Another study by Gichuhi, (2014) also recommends the adoption of KM strategies to empower employees with techniques of creating and utilizing their knowledge. All these basic functions were aligned to the objectives of this study which were focused on combining management of employee core competencies within a knowledge culture and supportive structures of communities of practices, knowledge mapping and organizational learning.

The Knowledge-Based View (KBV) theory is relevant to the study in several ways. Firstly, the KBV theory emphasizes the importance of knowledge as a critical resource for organizations. Knowledge harvesting is a key process for capturing and leveraging the knowledge assets of an organization, which can be used to improve organizational agility. By capturing and sharing knowledge within the organization, they can respond more quickly and effectively to changes in the market, which can help them remain competitive. Secondly, the KBV theory suggests that knowledge is a key source of competitive advantage. By leveraging their knowledge assets and developing their organizational agility, they can create a unique competitive advantage that is difficult for competitors to replicate. Thirdly, the KBV theory emphasizes the importance of knowledge creation and innovation. By harvesting knowledge and developing organizational agility, organisations can create new knowledge and innovative solutions that help them stay ahead of their competitors.

LITERATURE REVIEW

Data Archiving

Data archiving is the process of moving data that is no longer actively used to a separate storage device for long-term preservation (Olson, 2010). Data archiving is the strategic process of storing and managing data over an extended period for historical, reference, or compliance purposes (Krier, & Strasser,2014). It involves the relocation of data that is no longer in active use to a designated storage location. This secondary storage typically has lower cost and performance requirements compared to primary storage, freeing up resources on primary systems and enhancing overall performance. Archived data consists of older data that remains important to the organization or must be retained. The archived data is stored on a lower-cost tier of storage, reducing primary storage consumption and the related costs (Mansouri, Toosi & Buyya, 2017). Archiving software automatically moves aging data to the archives according to a data retention policy, which might also include specific retention requirements for each type of data. Data archiving is critical for businesses and organizations that acquire new information regularly, and it is also important for regulatory compliance (Wang, Kung & Byrd, 2018). Best practices for data archiving include establishing clear archiving policies, sorting and prioritizing data, and putting data security measures in place

Organisational Competitiveness

Competitiveness has also been described and understood as an attribute of a company expressed in terms of its operational effectiveness, and efficiency (Kuźmiński, Jalowiec, Maśloch, Wojtaszek & Miciuła, 2020). As for Ambastha and Momaya (2004), competitiveness is the ability of a company to design, manufacture and sell better products and services than those offered by competitors, taking into account price and non-price quality criteria in the assessment. Lisowska (2013) views the competitiveness of small and medium-sized enterprises as the ability to take quick and adequate actions to manage resources efficiently. In the case of business competitiveness, we can define it as the ability of organizations to produce goods or services with a favourable quality price ratio that guarantees good profitability while achieving customer preference over other competitors. The competitiveness of an enterprise should be understood as a proper feature of the enterprise, playing an important role in formulating the enterprise's development strategy (Ungerman, Dedkova & Gurinova, 2018; Kuźmiński et al., 2020). Competitiveness describes the extent to which the organization is aggressive in driving for its own success and goals (Jiang, Chai, Shao & Feng, 2018).

Organisational competitiveness is considered unavoidable where organizations have to advance their service features to draw in customers alongside other organizations with similar goals. That is to say, markets which have organizations vying for the attention and interest of shared customers tend to engage in competition or perceive themselves as competitors. Jacobs, Vickery and Droge (2007) opined that competitiveness ensures the relevance and survival of the organization, and within highly populated markets, requires that organizations not only advance innovations that address existing gaps, but also adopt features and structures that are engaging.

Technology Capability

In global markets, the organizations' competitive advantages result from the ability to develop new technologies more rapidly than their competitors, and to create and disseminate technological

innovations (Guan & Ma, 2003). Technology is an essential valuable resource that provides sustainable competitive advantages (Caloghirou, Kastelli & Tsakanikas, 2004). It is at the centre of competition in the world market. The diffusion, assimilation and further improvement of new technology determine the patterns of competition, growth and trade around the world at large (Lall, 1990). The capability to access new technology affects the ability of companies in emerging countries to build indigenous technological capabilities and compete in world markets (Lall, 1990). Consequently, technological capability (TC) has become the focus of attention not only among academics, but also among business managers and government officials (Lall, 1990; Miyazaki, 1995; Kim, 1997).

The strategic role played by technological capabilities in affecting the competitive advantage of a company, an industry, and even a country cannot be overlooked. Bergerk, Tell, Berggren, and Watson (2008) and Coombs and Bierly III (2006) sees TC comprising the system of activities, physical systems, skills and knowledge bases, managerial systems of education and reward, and values that create a special advantage for an organization. Normally, a firm is capable of operating, maintaining, adapting, and assimilating the transferred technology. The two main dimensions of TC are activities and strategies (Bergerk, Tell, Berggren, & Watson, 2008). Activities consist of R&D activity in term of patenting, product launching, and problem solving whereas strategy will consider the technology sourcing strategy. TC plays an important role in achieving competitive advantages and increasing performance of organizations, industries, industrial clusters, and as well as for the countries. Technological capability is one of the foundations of a firm's competitive capability. It helps firms to increase their ability to apply technical knowledge in creating and delivering innovative products that consumers may value; and thus, affect the overall business performance and new product development performance of a firm (Latip, Salleh, Omar & Yaakub, 2013; Wang, Lo, Zhang & Xue, 2006).

Market Share

Market share refers to the percentage of sales a company has in a specific market within a specific time period. Higher market share translates into higher profits. Gaining or building market share is an offensive or attack strategy to improve the company's standing in the market (Akintokunbo, 2018). Market share is a measure of the consumers' preference for a product over other similar products. A higher market share usually means greater sales, lesser effort to sell more and a strong barrier to entry for other competitors. A higher market share also means that if the market expands, the leader gains more than the others. By the same token, a market leader - as defined by its market share also has to expand the market, for its own growth (Schnaars, 1998).

Most organizations measure growth based on the strength its market share position occupies in the industry. Accordingly, Koontz & Donnell, (2003) viewed market share as a key indicator of the organizational growth. Hence, due to globalization Apple inc., a leading telecommunication company with branches all over the world has taken advantage of the trend to increase their market share by introducing and sales of sophisticated phones and gadgets. Market share of any organization is its portion of total sales as it relates to the industry it operates. For instance, if Apple inc. make a sales of 1 million worth of phone in a given year and the total worth of phones sold by telecommunication industry is 2 million; this implies that Apple inc. market share in the phone industry would be 50% of the total earning.

Furthermore, market share increase will enable firms to achieve greater economic of scale in product and service, customer loyalty, firm's revenue and improve its operations. Thus, shareholders are keen in monitoring the fluctuation of market share, because they are precursor of competitiveness of the firm's growth. In addition, Wikipedia attribute market share as representing the percentage of an industry or market's total sales that is earned by a particular company over a specified time period.

There are many different ways to increase market share; companies usually use a combination of strategies. Sometimes, something as basic as increasing advertising can have huge effects, as can adjusting pricing. Breaking products into groups and targeting them at specific demographics can also increase this percentage, as can making of complementary products. Another strategy is improving the product or service itself, which can attract customers from competitors, though this can be difficult, so many companies try to grow along with a growing market rather than trying to take business from the competition (Sliden, 2014).

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). 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.

Scholars have conducted numerous studies to explore how organizational responsiveness can be enhanced (Wei &Wang, 2011). According to Bernardes and Hanna (2009) central to this concept of organizational responsiveness seems to be the capability to learn fast in an environment where changes are fast-paced and difficult to foresee. Accordingly, scholars have increasingly realized that to develop and maintain responsiveness, a firm must constantly learn from partners with rich experiences in terms of responding to market changes (Yu, Jacobs, Salisbury & Enns, 2013).

Data Achieving and Organisational Competitiveness

Data is the lifeblood of modern organizations. It is used to inform decision-making, improve efficiency, and develop new products and services. The ability to create and manage data effectively is therefore essential for organizational competitiveness. Data is increasingly recognized as a strategic asset for organizations. Davenport and Patil (2012) argue that data has the potential to transform industries and create competitive advantages through data-driven decision-making. The ability to make informed decisions based on data is crucial for organizational competitiveness. Brynjolfsson and McAfee (2014) suggest that data-driven organizations outperform their peers.

Data archiving, through its meticulous management of organizational data, becomes a pivotal factor in shaping the competitive landscape of businesses. By strategically storing less active or historical data in cost-effective repositories, companies can optimize their primary storage resources (Kunduru & Kandepu, 2023). This optimization not only enhances system performance but also reduces overall storage costs, a crucial consideration in the face of ever-expanding data volumes. Furthermore, data archiving contributes significantly to compliance and risk

management (Bertolaccini, Falcoz, Brunelli, Batirel, Furak, Passani & Szanto, 2023). Adhering to data retention regulations is not only a legal necessity but also a means of safeguarding the organization against penalties and legal complications. This commitment to compliance fosters a trustworthy reputation, adding a layer of competitiveness in industries driven by integrity and adherence to standards.

Efficient data retrieval mechanisms embedded in archiving systems empower organizations to swiftly access historical data when needed (Abu-Elkheir, Hayajneh & Ali (2013). This capability translates into faster decision-making processes, ultimately boosting operational efficiency and responsiveness to market dynamics. Strategic decision-making benefits from the wealth of insights that archived data can provide. Analyzing trends, patterns, and past performance equips organizations with valuable information, enabling them to stay ahead in a competitive environment.

In the realm of customer experience, a streamlined and organized data environment, facilitated by archiving systems, enhances efficiency in customer service. This contributes to an overall positive customer experience, a factor that can significantly influence competitiveness in customer-centric industries. Security is paramount, and many archiving solutions integrate robust measures to ensure the confidentiality and integrity of archived data (Kunduru & Kandepu, 2023). This commitment to data security not only safeguards sensitive information but also builds trust with customers and partners, enhancing the competitive position of the organization. By leveraging the historical data stored in archives, organizations can gain valuable insights into past projects, market trends, and competitor activities. This competitive intelligence becomes a strategic asset, providing a foundation for informed decision-making and proactive measures to stay ahead in the market. In essence, data archiving is not merely a technical necessity; it is a strategic tool that, when wielded effectively, optimizes resources, ensures compliance, facilitates efficient operations, and empowers organizations with the insights needed to compete and thrive in dynamic and competitive business environments.

Based on the foregoing, the study thus hypothesized that:

Ho_1: There is no significant relationship between data archiving and technological capabilities.
Ho_2: There is no significant relationship between data archiving and market share.
Ho_3: There is no significant relationship between data archiving and responsiveness

CONCLUSION

The paper concludes that data archiving, which is the strategic storage of data, judiciously moving less active information to cost-effective repositories, not only optimizes resource utilization but also alleviates storage costs amid the relentless growth of data volumes. The efficiency embedded in data archiving systems extends to swift data retrieval, empowering organizations to make informed decisions promptly. This operational agility, coupled with the strategic insights derived from archived data, positions companies to stay ahead in dynamic industries where adaptability is a key competitive advantage.

RECOMMENDATIONS

i. Organisations should formulate a clear strategy for data archiving that aligns with organizational goals, compliance requirements, and data lifecycle management. This strategy should consider the types of data to be archived, storage solutions, and retrieval mechanisms.

ii. Choose appropriate archival storage solutions based on the organization's needs and budget. Consider factors such as scalability, security features, and long-term data preservation capabilities. Regularly update and maintain the archiving infrastructure to ensure optimal performance.

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