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CRISES AS HARBINGERS OF OPPORTUNITIES: AN EMPIRICAL INSIGHT OF KNOWLEDGE MANAGEMENT AS MODERATOR BETWEEN ABSORPTIVE CAPACITY AND STRATEGIC AGILITY

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ABSTRACT

The upstream oil and gas businesses in Nigeria suffer from insufficient absorptive capacity, poor knowledge management in their operations, and a lack of capability to address difficulties in the country effectively. These factors impeded their capacity to be strategically agile in reacting to the sector's issues, eventually stifling their performance. This study investigated the moderating influence of knowledge management on the relationship between absorptive capacity and strategic agility in the upstream oil and gas industry of Nigeria. A survey research design was used. Instruments were sent to the upper and intermediate management of upstream oil and gas

businesses in Lagos State. The validity and reliability of the instrument were examined, and the findings indicated that the questionnaire was valid and reliable. Smart Partial Least Square (PLS) 3.0 was used for data analysis, coupled with Structural Equation Modelling. The research indicated that absorptive capacity had a substantial impact on strategic agility and that knowledge management strengthened the association between absorptive capacity and strategic agility among the chosen upstream oil and gas enterprises in Lagos State, Nigeria. The study recommended that upstream oil and gas businesses employ good knowledge management methods and construct excellent absorptive capabilities to financially engage strategic agility measures that will guarantee greater success than their sector competitors. The study's theoretical and managerial ramifications, as well as its limits and future research opportunities, were discussed.

Keywords: Absorptive capacity, competitiveness, innovation, knowledge based-view, knowledge management, strategic agility, and strategic asset.

INTRODUCTION

Firms worldwide may find it difficult to apply strategic agility measures without critical knowledge management processes and sound appropriate absorptive capacity. Specifically, organisations in the oil and gas industry are characterised by dynamic structures and trade forces, which make oil and gas companies inculcate knowledge management and absorptive capacity in the strategic agility model so as to achieve targeted results. Arshad and Pasha (2021) argued that absorptive capacity enhances the ability to detect, gather, assess, grasp, and creatively use external data, thus supporting management in the development of customer loyalty and satisfaction with dynamic capability that influences the nature and sustainability of a company's strategic agility and competitive advantage. Since the upstream oil and gas sector is unique and has a big impact on the economy, people who study oil and gas business strategies and work in the energy industry are interested in how the sector handles the shocks and forces that are typical of the industry.

The consequences of these two universal phenomena are exacerbated by the failure of companies in this sector to be proactive by engaging in strategic agility initiatives aimed at sensing and responding to the

global crisis as quickly as possible. They failed to realise that for the development of knowledge within their firms and the growth of their operations (Saad et al., 2017), acquiring new externally generated knowledge is essential; these actions are necessary antecedents to strategic agility. Strategic agility reflects the extent to which an organisation's management demonstrates the ability to adapt, be flexible and creative, and anticipate unexpected shocks within and outside its operating environment and respond to them proactively, swiftly, and effectively so that threats are transformed into opportunities (Denning, 2018; Tilman & Jacoby, 2019). Through heightened vision and adaptability, these businesses adapt and respond more effectively and efficiently to all rapid changes in market conditions and client demands than other businesses. In the process, they gain a bigger share of the market, a better business reputation, happier customers, and more creative ideas (Arokodare, 2020; Elali, 2021).

Within the upstream oil and gas sector and in the context of developing economies, Arshad and Pasha (2021) stated that a problem of knowledge management and absorptive incapacity exists, reducing strategic agility measures among oil and gas companies in the sector. Likewise, Arokodare (2021a) pointed out that Nigerian companies in the upstream oil and gas sector lacked global ideas and the appropriate absorptive capacity to globally dictate and control the upstream sector due to poor strategic agility measures necessary to react to and tackle the market forces dominating the sector. Several related studies, including Akpa et al. (2020), Arokodare (2020), Arokodare and Falana (2021), Lichtenthaler (2016), Lim (2019), Liu et al. (2021), Long and Liao (2016), and Molina-Morales et al. (2021), examined how strategic agility and absorptive capacity affected firm performance. To the best of the researchers' knowledge, most of these past studies did not investigate the interaction between knowledge management, absorptive capacity, and strategic agility in the upstream oil and gas sector. Therefore, this study filled a hole in the research by looking into and answering the subsequent research questions:

- What is the effect of absorptive capacity on strategic agility?
- How does knowledge management strengthen or diminish the relationship between absorptive capacity and strategic agility?

First, the conceptual and theoretical foundations of the study were explicated, highlighting their significance in the survival of upstream oil and gas companies within the context of the research variables.

Based on the foundations and building on related empirical findings, a conceptual model was developed, and hypotheses were proposed regarding the relationship between absorptive capacity and strategic agility and the moderating effect of knowledge management on the relationship. The hypotheses were tested with data from a survey of upstream oil and gas companies operating in Nigeria. Then, the results were used to draw theoretical and managerial conclusions. Finally, the study's flaws and areas that need more research were pointed out.

LITERATURE REVIEW

Crises and Opportunities

In general, crises are usually viewed as dangerous, costly, and most of the time, detracting from other agendas and priorities. Langan-Riekhof et al. (2017) posited that crises and extreme threats could be useful in changing the direction of organisations and nations towards enduring solutions, leading to new and profitable opportunities, especially if orthodox approaches and paradigms are questioned, challenged, and reviewed during the process. Crises do offer many unexpected benefits to organisations and nations. According to Langan-Riekhof et al. (2017), crises and challenges can lead to the development of problem-solving mechanisms and innovation in technology, policy, and procedures; increased organisational resiliency that can be used to deal with the next crisis; the evolution of new positive levels of cooperation and alliance, even among competitors; and the facilitation of systemic change that may pave the way for the emergence and acceptance of new systems, structures, and values. Specifically, from the perspective of "creative destruction" (Schumpeter, 1942), the downturn occasioned by the global pandemic might be a source of opportunities for innovators and innovation systems (OECD, 2012). Organisations and national economies were affected by the crisis because of a drop in demand for goods and services, a drop in liquidity in the financial systems, a rise in uncertainty about what will happen in the future, and changes in innovation policy.

Absorptive Capacity

Absorptive capacity (AC) is the ability of the firm to recognise the value of new external knowledge, assimilate it, and apply it to

commercial ends (Schweisfurth & Raasch, 2018). It is a dynamic capability relating to a firm's competence to acquire, assimilate, transform, and exploit new external information (Medase & Barasa, 2019). Moreover, it can assimilate and manage knowledge to improve innovation performance and competitive advantage (Noblet et al., 2015). Zahra and George (2002) reconceptualised AC as a dynamic capability that influences the nature and sustainability of a firm's competitive advantage. They also introduced the ideas of "potential AC" and "realised AC". "Potential AC" refers to the capabilities that allow firms to recognise and acquire external knowledge with the goal of developing and including it in the company's information databases. "Realised AC" refers to the capabilities that allow firms to transform and use knowledge, using information about their activities to create innovation.

According to Khan et al. (2020), potential AC empowers firms to investigate new foundations of information while realised AC guarantees that recently obtained knowledge can be utilised at commercial ends. The literature has (Van den Bosch et al., 2003) identified certain antecedents of AC to include prior related knowledge like basic skills and problem-solving language and general knowledge of related domains (Cohen & Levinthal, 1990). They also include organisational internal mechanisms, such as communication structure and character, expertise and knowledge distribution, external sources of knowledge and complementarity, and experience (Zahra & George, 2002). There are many internal and external factors that influence AC, according to Noblet et al. (2015). Internal factors include prior knowledge base, individual AC, the level of education and academic qualifications of employees, the diversity of their backgrounds, organisational structures, level of cross-functional communication, organisational culture, firm size, and investment in research and development (R&D); while external factors are a combination of the external knowledge environment and the company's position within the relevant knowledge networks.

Strategic Agility

Strategic agility (SA) has become an increasingly important management technique that modern organisations use to maintain survival in dynamic and high-velocity settings and successfully compete in this information era. SA is defined as businesses' capacity to

detect both internal and external changes in the business environment in which they operate. It involves detecting and capitalising on chances to remain competitive and maintain survival, as well as identifying possible risks and minimising or avoiding their occurrence. SA is when an organisation anticipates, initiates, and capitalises on change with speed, decisiveness, and efficiency (Jamrog et al., 2006). It is the organisation's capacity to stay adaptable in the face of new events, to modify the company's strategic direction continually, and to produce value in novel ways (Weber & Tarba, 2014). The development of SA in an organisation will allow its leadership to anticipate market developments that might be beneficial or detrimental to the company and to adopt or act swiftly on new ideas. Therefore, being strategically agile means having the capability to create new products, new services, and new offerings for external and/or internal customers and clients at high speed to stay ahead of the market (Arokodare, 2020). The need for strategically agile organisations has been driven by the changing dynamism of the contemporary business environment, which is characterised by short product life cycles, fast technology updates, rapid changes in organisational direction, and customers who are becoming increasingly impatient (Dove, 2002).

Knowledge Management

The notion of knowledge management (KM) is crucial to all organisations, whether big, medium, or small, since without information, it would be difficult for a company to successfully adapt to the ever-changing market demands required to retain competitiveness (Saqib et al., 2017). Rasula et al. (2012) defined KM as the intelligent use of given knowledge resources in an organisation and transforming individual knowledge (tacit) into organisational knowledge (explicit) through a systematic process of knowledge acquisition, creation, refinement, storage, transfer, sharing, and application to enhance employees' understanding. The management of corporate knowledge may enhance various organisational performance characteristics by making an organisation more intelligent and informed (Kumar, 2021). KM outlines the processes and tactics of finding, acquiring, transforming, implementing, and sharing knowledge to increase an organisation's competitiveness (Akpa et al., 2020). It is an organisation's capacity to produce, store, and disseminate information that enables it to achieve competitive advantage in terms of quality, speed, innovation, and price (Nonaka

& Takeuchi, 1995). Nevertheless, according to Odor (2018), KM is an extension of organisational learning since an organisation that does not learn would never have any knowledge to store, share, and apply. Later, Samuel and Odor (2018) evaluated existing research and determined that knowledge sharing is the most essential of all KM procedures. Successful implementation of KM supports the delivery of innovative goods and services by businesses. KM, the essence of which is knowledge, is the lifeblood of contemporary organisations. These businesses operate in a knowledge-based economy in which products and services are based on knowledge-intensive activities (Powell & Snellman, 2004). KM is a tool for gaining a lasting competitive advantage and better overall performance because it is a key strategic asset and a key resource for survival, stability, and growth (Samuel & Odor, 2018).

Companies with better performance rely more on their knowledge-based resources to survive and adapt to change (Choy et al., 2008). Other benefits of KM include the promotion of successful R&D; creation of richer and more transparent intra-enterprise communications; preservation of an enterprise's trade secrets and knowledge; enabling better and faster decision-making through timely availability of relevant information; enforcement of a standard paradigm for all employees to adhere to; and stimulation of innovation and growth. This research is based on the Knowledge-Based View (KBV), stating that knowledge is one of the most significant intangible resources organisations may employ to gain a competitive advantage (Sharkie, 2003). KBV serves as the study's theoretical basis and foundation.

EMPIRICAL REVIEW OF LITERATURE

Absorptive Capacity and Strategic Agility

The three concepts of absorptive capacity (AC), strategic agility (SA), and knowledge management (KM) do interact in diverse ways to ensure an organisation's survival and achieve desired organisational outcomes. The extant literature hugely supports this. Khan et al. (2020) empirically confirmed the mediating role of SA in the relationship between social capital and strategic renewal and the moderating effect of AC as a catalyst between the two constructs, while the association of AC with SA augments the effects of strategic renewal in firms.

Martínez-Caro et al. (2018) suggested that information technology (IT) assimilation supported the development of both potential and realised AC within the firm. This, in turn, had a positive effect on organisational agility. The two sets of AC mediate the influence of IT assimilation on organisational agility, which influences firm performance, thus confirming a complimentary relationship between AC and agility. Verma et al. (2017) compared the convergence of the two dynamic capabilities of agility and AC, where the sensing and responding components of agility were considered as the potential and realised components of AC. The study suggested that agility could be a special case of AC in which potential and realised AC work together to help a company do better.

In the literature, Zulkifli et al. (2020) and Arokodare (2021b) pointed out that the majority of upstream oil and gas companies, especially in developing economies like Africa, encounter challenges of price volatility, dynamic market pressures, and fiscal policy uncertainty, among others. These companies also suffer from the effects of inadequate AC on the operations of the upstream oil and gas sector and their ability to properly handle challenges experienced in host countries in that sector. Therefore, these challenges in host countries put a substantial strain on the upstream oil and gas sector's performance in all economies around the world, whether developed, emerging, or developing. This strain hurts the industry's overall performance and jeopardises the entire firm's investment programme and financial strategy. The crisis of the global pandemic (coronavirus disease-2019) has taken its toll on every sector of the national and international economies. The upstream oil and gas sector has been hit especially hard by the pandemic as it and caused a widespread and long-lasting demand shock, leading to falling crude oil prices (Arokodare & Falana, 2021).

Jabarzadeh et al. (2020) analysed the effect of individual knowledge AC on knowledge sharing through the mediation of employee agility in the banking system. The study found that all direct relationships between variables were significant, and employee agility mediated the relationship between individual knowledge AC and knowledge sharing. Mao et al. (2020) investigated the mediating role of AC on the IT-agility relationship and found that the effects of AC were multifaceted and nuanced. Organisations with higher levels of AC are more likely to be able to pick up on changes in the environment

and respond quickly to them. They are also more likely to be able to design better products that meet changing customer needs.

Therefore, firms need to develop proper AC as it measures their ability to acquire, assimilate, transform, and exploit internal and external knowledge sources in structuring and moulding their dynamic responses to changes in their competitive business environment. On this strength, Long and Liao (2016) found that AC positively affected organisational market responsiveness, though contingent on the degree of bureaucracy. Likewise, Rojo et al. (2018) established that AC as a dynamic capability enabled supply chain flexibility. Lungu (2020a) confirmed that organisations that used strategic agility had an improved performance level than organisations that did not. Therefore, the more strategically agile an organisation is, the more successful that organisation becomes in meeting its set targets. Based on the foregoing, this study hypothesised that:

H_{01}: Absorptive capacity has no significant influence on strategic agility.

Knowledge Management, Absorptive Capacity, and Strategic Agility

The literature has shown that a company's ability to acquire and utilise relevant knowledge is critical for innovation success (Guimaraes et al., 2016; Leal-Rodríguez et al., 2014; Reid, 2018; Yang & Tsai, 2019). Thus, the core of AC is knowledge from external sources, the processing of which (acquisition, assimilation, transformation, and exploitation) determines the capacity of the organisation to achieve innovation performance. In addition to depending on its interface with the external environment, an organisation's AC relies on knowledge transfers between and among its components and subunits (Cohen & Levinthal, 1990). For an organisation to obtain a competitive advantage from its AC, employees must have the disposition to impart and transfer knowledge as asserted by Chauvet and Guiot (2002).

In an examination of the effect of e-business and strategic capabilities on the performance of small and medium-sized enterprises (SMEs) while implementing their innovation and international strategies, Raymond et al. (2016) used the concept of AC as a theoretical lens and found that e-business capabilities had a significant impact on

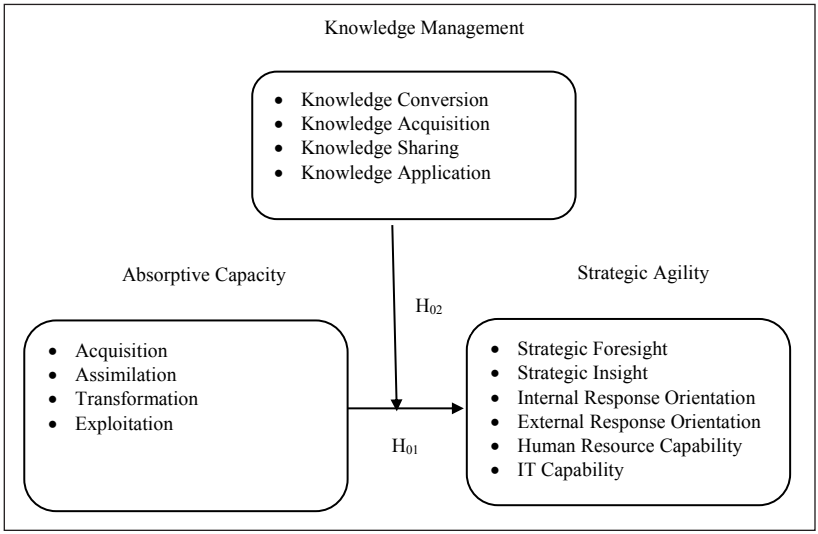
the competitive performance of SMEs. Valentim et al. (2016) found that SMEs could reinforce their AC by engaging in KM practices via collaboration with business partners, prioritising learning processes based on experience, knowledge transfer to employees, and knowledge absorption by employees, all of which are geared towards efficiency improvements, strategic adaptation, and the introduction of new products and services. Lau and Lo (2015) discovered that three parts of regional innovation systems played essential roles in providing optimal environments for knowledge creation and transfer, which influenced an organisation's ability to compete (AC), resulting in improved innovation performance. Martín-de Castro (2015) posited that knowledge and technological innovation as a resource and a dynamic capability were key sources of sustainable competitive advantage, especially in knowledge-based and high-tech industries. He also thought that the ability of a business to keep ahead of the competition was closely related to its capacity to develop new technology regularly. Firms rely on external relationships and networks to support and add to their knowledge base.

The study maintained that this interaction between KM and AC will develop better and faster innovations. Wang and Han (2011) investigated the linkages between knowledge properties, firms' AC, and innovation performance in Chinese SMEs and found that most knowledge properties positively affected innovation. Consequently, the relationship between knowledge properties and innovation is more pronounced when the firm's AC is higher. Furthermore, the presence of effective KM processes and practices in an organisation is necessary to boost the AC of the organisation, which in turn will facilitate the firm's SA. KM orientation has been found to be amplified in the setting of SMEs by better management and integration of essential internal and external knowledge. Lungu (2020b) found that the knowledge acquisition dimension of KM directly influenced SA, which in turn increased company performance. The above review indicates that KM as an antecedent to AC enhances the latter in the organisational processes. Based on the above review of literature, the study proposed the following hypothesis:

H_{02}: Knowledge management has no significant moderating effect on the relationship between absorptive capacity and strategic agility. The conceptual model in Figure 1 is in alignment with the hypotheses formulated for this study.

Figure 1

Researcher's Conceptual Model



Source: Literature Review (2022)

METHODOLOGY AND RESULTS

Research Instrument

The research study used a cross-sectional survey methodology, using upstream oil and gas firms in Lagos State, Nigeria as its target population, which is predicated and in line with cross-sectional studies (Arokodare et al., 2020; Olubiyi, 2020; Olubiyi et al., 2019). The questionnaire for this study was adapted from prior literature. The survey used copies of the questionnaire to gather data for the independent, dependent, and moderating variables, respectively, for the required analyses. Absorptive capacity had seven items, strategic agility had eight, and knowledge management had seven items. The questionnaire items were categorised into: A) Knowledge Management (Ruvania et al., 2015); B) Absorptive Capacity (Schweisfurth & Raasch, 2018; Medase & Barasa, 2019; Noblet et al., 2015); and C) Strategic Agility (Arokodare et al., 2020; Mavengere, 2013).

For each variable question on the independent, dependent, and moderating factors, a modified six-point Likert-type scale was used,

with Very High (VH) equalling 6, High (H) equalling 5, Moderately High (MH) equalling 4, Moderately Low (ML) equalling 3, Low (L) equalling 2, and Very Low (VL) equalling 1. The study's investigation of the aforementioned hypotheses employed the hierarchical regression approach. Using Smart Partial Least Square (PLS) 3.0, the Structural Equation Modelling (SEM) was utilised in this investigation. Some elements, including AC2, AC3, SA4, SA5, and KM7, were not included in the factor loading. The measuring model accurately captured the research variables as a result. In the authors' opinion, PLS-SEM was acceptable since the research assessed second-order constructs (Hair et al., 2011).

Sample

Due to the study's limited sample size of 120 respondents, a total enumeration was used (120). As of 31st December 2020, 40 (or over 70%) of the 51 upstream oil and gas businesses in Nigeria registered with the Department of Petroleum Resources (DPR) had their headquarters in Lagos State (JarusHub, 2017). This was the rationale for focusing the investigation on upstream oil and gas firms in Lagos State.

Data Collection

Three respondents from each upstream oil and gas business participated in the survey: the finance manager, the oil exploration and production manager, and the planning and budget manager. These officers were chosen as respondents because they were the most qualified and experienced to provide accurate and pertinent information regarding their organisations' capabilities in strategic agility and knowledge management processes, as well as the performance of their firms. Each of the 40 upstream oil and gas enterprises in Lagos State received three questionnaires, totalling 120 replies from their finance managers, oil exploration and production managers, and planning and budget managers of the businesses in Lagos State. The respondents properly completed and returned 112 copies of the questionnaire. The response rate was found to be 93.33 percent, with the copies of the questionnaire adjudged usable for further analysis. However, eight copies (6.67%) were not returned and were not included in the following analysis. Statistical studies were then conducted with Smart Partial Least Squares 3.0.

Data Analyses

Convergent validity refers to the degree to which the indicators of a latent variable measure the same construct. Typically used to measure convergent validity, the average variance extracted (AVE) reveals how much of the variation of the indicators can be explained by the hidden variable. It has been claimed that an AVE greater than 0.5 would give empirical proof of convergent validity. Thus, all AVE values in Table 1 were above 0.5 (0.510, 0.670, and 0.540), indicating that convergent validity existed. Similarly, composite reliability (CR) evaluates convergence validity. In addition, composite reliability values represent the extent to which construct indicators disclose the latent variable, and they should be more than 0.70. The composite reliability values in this study varied from 0.822 to 0.841, as shown in Table 1, indicating good construct reliability. From Table 1, the construct reliability of the data collected was ascertained using the internal consistency method through the Cronbach's alpha coefficient. Based on the 0.70 Cronbach's alpha standard in the table, the outcome of the test suggested that the assessment instrument utilised was extremely trustworthy. These values were shown to be greater than 0.70 (Hair et al., 2011; Serbetar & Sedlar, 2016).

Table 1

Construct Reliability and Validity

	Cronbach's Alpha	rho_A	Composite Reliability	Average Variance Extracted (AVE)
Absorptive Capacity	0.756	0.768	0.837	0.510
Knowledge Management	0.778	0.785	0.841	0.670
Moderating Effect 1	1.000	1.000	1.000	1.000
Strategic Agility	0.707	0.701	0.822	0.540

Source: Researchers' Computation (2022) from PLS 3.0

From Table 2, discriminant validity was determined by observing the Heterotrait-monotrait criterion (HTMT). At the HTMT 0.90 cut-off, Henseler's HTMT criterion shows that all variables are significantly dissimilar (Henseler et al., 2015). As shown in Table 2, the HTMT values for all variables fell between 0.662 and 0.761, indicating that

all variables were distinguishably unique, with HTMT values below 0.90. Importantly, the HTMT result implied that the variables were distinguishably distinct from one another, validating the discriminant validity.

Table 2

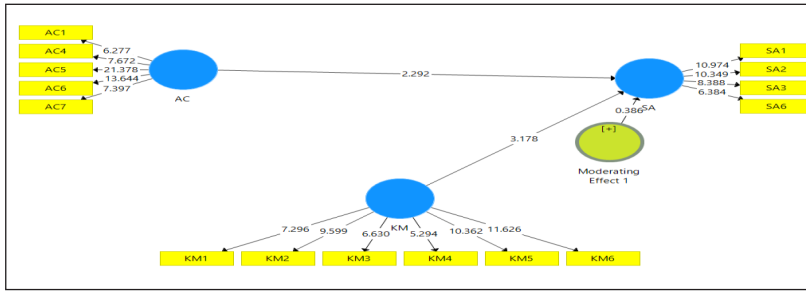
Heterotrait-Monotrait Criterion for Discriminant Validity

	Absorptive Capacity	Knowledge Management	Moderating Effect 1	Strategic Agility
Absorptive Capacity	0.714			
Knowledge Management	0.761	0.685		
Moderating Effect 1	-0.676	-0.723	1.000	
Strategic Agility	0.662	0.702	-0.523	0.735

Source: Researchers' Computation (2022) from PLS 3.0

Figure 2

Structural Model



The results of Table 3 analysed the overall fit of the estimated model using the bootstrap-based test of the overall model fit and the Standardised Root Mean Square Residual (SRMR) as a measure of approximation fit to provide empirical support for the suggested theory. Without assessing the model fit, a researcher would not obtain any signal if they had incorrectly omitted an important effect in the model. In addition, the SRMR was below the suggested threshold of 0.080, indicating a satisfactory model fit. This result implied that the proposed model was suitable for validating and explaining the link effect model of how absorptive capacity interacted with AC*KM

strategic agility in Nigeria's oil and gas upstream sector. Since the SRMR was less than the threshold of 0.08, the study concluded that the model for this study was well fitted. The variance inflation factor (VIF) indicated that no multicollinearity problem existed in the model since none of the variable's value was up to 5.

Table 3

VIF Values and Model Fitness

	Absorptive Capacity (VIF)	Fit Summary	Saturated Model	Estimated Model
Absorptive Capacity	2.583	SRMR	0.127	0.128
Knowledge Management	2.936	d_ULS	1.937	1.971
Moderating Effect 1	2.273	d_G	0.783	0.781
Strategic Agility		Chi-Square	472.740	474.444

Source: Researchers' Computation (2022) from PLS 3.0

As depicted from Table 4, the Adj.R^2 was 0.521, accounting for the latent variables, such as absorptive capacity and interaction between knowledge management, and absorptive capacity (KM*AC) as exogenous variables, thus explaining 52.1 percent changes in strategic agility. The total effect depicted the path coefficient effect of how absorptive capacity and interaction between knowledge management and absorptive capacity (KM*AC) affected strategic agility. Therefore, both absorptive capacity and knowledge management had incremental effects or changes of 0.318 and 0.497, respectively, on strategic agility, while the moderating effect of knowledge management and absorptive capacity (KM*AC) was positive and significant with a 0.031 effect on strategic agility among upstream oil and gas companies in Lagos State, Nigeria. Similarly, to test for the degree of strength of an effect, there were thresholds to test the effect size or degree of strength of an effect; thus: where $f^2 < 0.020$ (no substantial effect), $0.020 \leq f^2 < 0.150$ (weak effect size), $0.150 \leq f^2 < 0.350$ (medium effect size), and $f^2 \geq 0.350$ (large effect size). For this study, the effect size in Table 4 depicted that absorptive capacity had a weak effect on strategic agility (0.084), knowledge management had a medium effect on strategic agility (0.180), while interaction (KM*AC) had no substantial effect on strategic agility (0.002) among upstream oil and gas companies in

Lagos State, Nigeria. Therefore, this study rejected the null hypothesis that knowledge management has no significant moderating effect on the link effect between absorptive capacity and strategic agility in the upstream oil and gas companies in Lagos State, Nigeria.

Table 4

Total Effects

	Absorptive Capacity (Total Effect)	R^2	Adj. R^2	f^2 (Effect Size)	Path Coefficient
Absorptive Capacity	0.318	0.533	0.521	0.084	0.318
Knowledge Management	0.497			0.180	0.497
Moderating Effect 1	0.031			0.002	0.031
Strategic Agility					

Source: Researchers' Computation (2022) from PLS 3.0

Table 5 depicts the pairwise correlation analysis result to check if no relationships among the study variables had a correlation coefficient up to 0.8, which is commonly used as a benchmark to detect the multicollinearity problem. All the correlation coefficients in the model were considerably below 0.8, indicating that there was no serious multicollinearity in the model.

Table 5

Latent Variable Correlation

	Absorptive Capacity	Knowledge Management	Moderating Effect 1	Strategic Agility
Absorptive Capacity	1.000	0.761	-0.676	0.662
Knowledge Management	0.761	1.000	-0.723	0.702
Moderating Effect 1	-0.676	-0.723	1.000	-0.523
Strategic Agility	0.662	0.702	-0.523	1.000

Source: Researchers' Computation (2022) from PLS 3.

Table 5 further showed that there was a positive relationship between absorptive capacity, strategic agility, and knowledge management,

while the interaction of (AC*KM) had a negative link with strategic agility. This result insinuated that the upstream oil and gas companies in Nigeria lacked the capacity and high level of technical knowledge in fast and global business dynamics to respond to the high volatility of the upstream oil and gas sector, unlike their counterparts in the developed economies.

DISCUSSIONS

Scholars supported the connection between knowledge management, strategic agility, and absorptive capacity, as well as the notion that knowledge management enables the processes and strategies of identifying, obtaining, converting, applying, and safeguarding knowledge to improve an organisation's agility model and competitiveness (Akpa et al., 2020; Kumar, 2021). In particular, Chauvet and Guiot (2002) proposed that knowledge transfer/sharing, a component of KM processes, was considered a moderator variable in the relationship between absorptive capacity and competitive advantage, indicating that knowledge transfer/sharing is a prerequisite for obtaining a competitive advantage via absorptive capacity. Empirically, Akpa et al. (2020), Arokodare (2020), Arokodare and Falana (2021), Leal-Rodríguez et al. (2014), Lichtenthaler (2016), Lim (2019), Liu et al. (2021), Long and Liao (2016), and Molina-Morales et al. (2021) found that a significant link effect existed between absorptive capacity, knowledge management, and strategic agility.

Similarly, Elali (2021), Fosfuri and Tribó (2008), Guimaraes et al. (2016), and Jabarzadeh et al. (2020) found that absorptive capacity and information sharing strengthened strategic agility models, which in turn raised firm performance. This finding demonstrated that excellent absorptive ability and knowledge sharing strengthened the strategic agility trend of a company, thus enhancing the firm's dynamic reaction to upstream oil and gas information or shock. Consequently, the results of previous investigations were consistent with those of the present study. The findings of this study were also consistent with the adopted theory, the Knowledge-Based View (KBV): where organisations can utilise their more valuable, rare, non-imitable, and non-replaceable intangible resources to achieve a sustainable competitive advantage and a sound strategic agility model through absorptive capacity and knowledge management. This

study therefore disproved null hypotheses one and two, which stated that absorptive capacity has a significantly impacts strategic agility and that knowledge management has a significant impact on how absorptive capacity influences strategic agility in Nigerian upstream oil and gas companies.

THEORETICAL AND MANAGERIAL IMPLICATIONS

This study's knowledge-based approach to strategy highlighted an important conceptual challenge about whether the increasing emphasis on knowledge-driven markets demands a new paradigm for comprehending competitive strategy. This research demonstrated that knowledge-based organisational processes provided strategic agility and absorptive capacity decision models that boosted competitive advantage. A knowledge-based competitive advantage will be creative as it evolves via the development of a new product, service, process, or structure, and will adapt swiftly to consumers' requirements. This study's results constituted a genuine contribution to the corpus of knowledge. The literature identifies absorptive capacity in many ways as a dynamic capability influencing new product creation and innovation success (Fosfuri & Tribo, 2008; Liu et al., 2018; Patterson & Ambrosini, 2014).

These are the few studies to link absorptive capacity directly to strategic agility and indirectly to other organisational outcomes that are positively and significantly influenced by strategic agility: competitive advantage (Al-Romeedy, 2019; Gerald et al., 2020); overall firm performance (Arokodare, 2021b); external and internal learning (Khan & Wesner, 2019); firm success and capturing of new opportunities (Kwon et al., 2018); and SME performance (Oyedijo, 2012). Therefore, it is essential for management to focus on antecedents and competencies that may increase the firm's strategic agility, since the end consequence will be enhanced performance across numerous metrics. Managers of companies must establish a climate that fosters and incubates KM procedures, since this is essential for capturing employee and organisational information that can be kept, shared, and utilised for the organisation's benefit. In this respect, the fact that knowledge is a crucial strategic asset in the firm's arsenal cannot be overstated, and its management is crucial to fostering an agile organisation that can adapt to changes in the business environment with responsiveness, competence, flexibility, and speed.

In addition, the literature acknowledges, and the findings of this study corroborate, that knowledge management is a precursor to absorptive capability, and that it promotes the latter in the company's processes, thus supporting a strategically agile organisation and assuring superior performance. Consequently, it is crucial for the management of upstream oil and gas firms to pay close attention to their knowledge management procedures and ensure that they are completely ingrained in organisational routines and protocols. Knowledge-based competitive advantage is the dynamic adaptation of resource/plan choices to changing knowledge in one's social network, thus enhancing both strategic agility and absorptive ability. Management of upstream oil and gas enterprises should actively engage the many aspects of KM processes due to their positive and considerable impact on the firms' agility. Given the nature of this sector's business environment, which is complicated, dynamic, volatile, and extremely subject to external and foreign forces and changes, this is all the more crucial.

CONCLUSION AND RECOMMENDATIONS

This study concluded that absorptive capacity affected strategic agility and there were sound strength and effect of knowledge management on the relationship between absorptive capacity and strategic agility among upstream oil and gas companies in Nigeria. The study recommended that upstream oil and gas companies in Nigeria should embrace sound knowledge management processes and efficient absorptive capacity capabilities so as to gainfully employ effective strategic agility measures that will guarantee them achievement that is well above that of their competitors in the industry.

LIMITATIONS AND SUGGESTIONS FOR FURTHER RESEARCH

The study has certain limitations that are highlighted hereunder. First was the scope of the study, which was the upstream sector of the oil and gas industry. This excluded the downstream and services sectors of the industry, both of which have different characteristics but are equally critical in every economy. Thus, the generalisability of the findings of the study to the entire industry is possible. Secondly, the choice of knowledge management as a moderating variable was

also restrictive as other intervening variables were observed in the literature that could affect the relationship between the dependent and independent variables of the study. Thirdly, the study employed a cross-sectional research design and the data from the population were collected at a specific point in time. Therefore, the cause-and-effect relationship between the study variables could not be established and the timing of the snapshot was not guaranteed to be representative. The study limitations above provided the grounds for areas for future studies.

Firstly, future studies of the downstream and services sectors of the industry will provide a possibility of comparison of the findings and present more practical situations to both industry managers and policymakers. Secondly, the use of other intervening variables like external environment (hostility and/or dynamism), organisational culture, and ownership structure in future studies will determine which of them has the greatest influence on the study variables and also on the performance of the sector. Thirdly and closely linked to the second point is that future studies could investigate which of the dimensions of absorptive capacity (acquisition, assimilation, transformation, and exploitation) has the greatest impact on strategic agility and which of the dimensions of knowledge management (conversion, acquisition, sharing, and application) has the most significant influence on the relationship between absorptive capacity and strategic agility and in the process be the most critical antecedent of that relationship. Finally, a longitudinal study of this sector will identify changes in the study variables over time and provide insight into the cause-and-effect relationship.

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