The Effect of Strategic Flexibility on Innovation Performance of Quoted Pharmaceutical Companies in Nigeria

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ABSTRACT: The pharmaceutical industry is key to the survival of human race, but equally becoming increasingly susceptible to global disruptions. In Nigeria, records have shown that the industry is plagued with several problems, inclusive of low innovation performance, which may be due to lack of strategic flexibility in the face of increasing environment turbulence and intense competition. This study examined the effect of strategic flexibility on innovation performance of quoted pharmaceutical companies in Nigeria. The study adopted survey research design. The population comprised 642 management and senior staff employees of the six quoted pharmaceutical firms in Nigeria. Findings showed that strategic flexibility has positive significant effects on innovation performance (Adj. $R^2 = 0.425$, $p = 0.000$, $Q^2 = 0.409$) of quoted pharmaceutical companies in Nigeria. Specifically, coordination flexibility ($\beta = 0.124$, $t = 2.688$), futurity ($\beta = 0.191$, $t = 3.788$), proactive flexibility ($\beta = 0.197$, $t = 3.57$), reactive flexibility ($\beta = 0.232$, $t = 4.192$), and resource flexibility ($\beta = 0.103$, $t = 2.867$) all have positive significant effects on innovation performance. The study concluded that strategic flexibility enhanced innovation performance of quoted pharmaceutical firms in Nigeria. The study recommended that management of quoted pharma companies in Nigeria should pay serious attention to strategic flexibility as organizational capability that can help enhance innovation capacity of the firms, in the face of increasing uncertainties in and unpredictability nature of the business environment.

Keywords: Strategic flexibility, Innovation performance, Resource flexibility, Coordination flexibility, Futurity

I. INTRODUCTION

Empirical evidences showed that the pharma industry is in innovation crisis. This is indicated by decrease in success rate of pharmaceutical research and development (R&D) projects, coupled with increasing attrition rate, the average development time, and the cost of new drug (Laermann-Nguyen & Backfisch, 2021). In Asia, the pharmaceutical industry is plagued with several challenges, inclusive of poor innovation performance (Angelino et al., 2017; Festa et al., 2022; Mukherjee, 2022; Lim & Rokhimi, 2021; Thu & Pritesh, 2022). In Africa, a major concern to the stakeholders is the inability of the continent to cater for its pharmaceutical needs, with the recent 2020 COVID-19 pandemic further exposing the continent’s inadequate capability and capacity to manufacture and supply essential drugs (Byaruhanga, 2020; Musinguzi, 2021), and the continent still importing more than 80% of its pharmaceutical and medical consumables, a situation considered unsustainable (Byaruhanga, 2020; Conway et al., 2019; Kurian, 2019; Musinguzi, 2021). In Ghana, there has been a decline in drug discovery, indicating poor innovation performance by firms in the industry (Amewu et al., 2022).

Nigeria is highly dependent on other countries for its medical needs, with about 70% of drugs used in the country imported from China and India (Akande-Sholabi & Adebisi, 2020). The poor innovation performance of firms in the sector has been highlighted by not only poor investment in research and development activities, but also the focus of the pharma firms on products that the greater number of Nigerians need, to the detriment of highly research-driven drugs (Muanya, 2022), even in the face of economic recessions and unstable macro-economic indicators (Omolua & Adeyemo, 2021; Utomi, 2021). Strategic flexibility has been identified as a dynamic capability needed by firms to survive turbulent times and uncertainties in the business environment through flexible deployment of strategic resources to gain a competitive advantage (Bashir, 2023; Hensellek et al., 2023; Kong & Suntrayuth, 2021). Strategically flexible business can maximize innovation processes, enhance innovation performance, when being challenged by uncertainty, changing and complex business environment, to deliver value and wealth for nations and organizations (Nwachukwu & Vu, 2020; Ponta et al., 2021; Robertson et al., 2021). However, despite that studies examining the effect of strategic flexibility dimensions on innovation performance of quoted pharmaceutical...
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Companies in Nigeria have remained scanty and limited, extant findings in Spain, Greece, Italy, China, Iran, Pakistan, Indonesia and Nigeria, have remained inconsistent (Ahmadi & Osman, 2018; Bashir, 2023; Beltran-Martin et al., 2021; Broekaert et al., 2016; Kandemir & Acur, 2022; Kong & Suntrayuth, 2021; Miroshnychenko et al., 2021; Ni et al., 2021; Nwachukwu & Vu, 2020; Saeed et al., 2021; Sukmanegara, 2022; Voudouris et al., 2017; Zang et al., 2022). In view of the contradictory findings, scholars, such as Ubeda-Garcia et al. (2017) and Meng et al. (2020) have called for more studies to fill the existing gap. In addition, Nwachukwu and Vu (2020) also suggested the use of multi-item scale of strategic flexibility in examining the flexibility-innovation link. Yousuf et al. (2021) called for more studies on the effect of strategic flexibility on the performance of pharmaceutical firms, using more dimensions of strategic flexibility and organizational performance. Consequently, in view of the aforementioned gaps and problems, the objective of the study was to examine the effect of strategic flexibility components on innovation performance of quoted pharmaceutical firms in Nigeria.

II. LITERATURE REVIEW

A. Dynamic capability view (DCV)

The dynamic capability view came into existence to provide a better understanding of resource configurations in the face of market and environmental dynamism, with focus on the capability of the firm to sense, shape and seize emerging threats and opportunities in the environment, while still maintaining competitiveness based on intangible and tangible resource acquisition (Georgewill, 2021). The proponents of the theory believe that firms who possess greater number of dynamic capabilities tend to lead and be ahead of those with minimal capabilities in responding effectively to changing market and consumer demands (Vem et al., 2022).

The theory argues that since contemporary market conditions are so dynamic and competitive than merely having a set of heterogenous resources, what then makes the difference in variation in performance seen among competing firms is the possession of capabilities used to deploy and reconfigure those resources to meet the need and changes in the dynamic marketplace. Dynamic capability confers on a firm the ability to have always a competitive advantage in an attractive industry, continuously pose superior performance irrespective of the prevailing conditions in the external environment (Collis & Anand, 2019). The study therefore believes that the DCV aptly captures the relationship between the dynamic capability of strategic flexibility, and innovation performance, providing an appropriate perspective to look at the effect of strategic flexibility on innovation performance of the quoted pharmaceutical companies in the dynamic business environment in Nigeria.

B. Strategic flexibility and innovation performance

Strategic Flexibility. Strategic flexibility is an organizational dynamic capability (Hensellek et al., 2023; Meng et al., 2020; Nayal et al., 2022; Nwachukwu & Vu, 2020; Zahoor & Lew, 2023; Zhuang et al., 2018) that confers improved performance and the ability to survive in turbulent and dynamic business environment on business organizations. Zahoor and Lew (2023) defines strategic flexibility as a dynamic capability required to respond to external crises in proactive or reactive manner in order to drive performance. In the same vein, Meng et al. (2020) posited that strategic flexibility is the capability of the firm to respond to dynamic environment through continuous changes in resource allocation and strategic actions. Yousuf et al. (2020) defines strategic flexibility as a firms’ ability to recognize major fluctuations in its business environment and applying its assets and resources efficiently and swiftly to take alternative courses of action to respond to the fluctuations. The understanding here is that strategic flexibility is a technique that helps firms shift from one strategic option to another in order to achieve better performance in unfavourable and uncertain times.

According to scholars, strategic flexibility is a good strategy to adopt when faced with intense competition, as well as market uncertainties, helping to improve on innovation performance of organizations and provides businesses with the ability to respond to environmental threats and realize opportunities timely (Kocyigit & Akkaya, 2020; Kurniawan et al., 2019; Yousuf et al., 2021). Meng et al. (2020) have established that strategic flexibility helps firms to achieve distinct innovation, and plays key role helping firms create value.

Moreover, according to Hoeft (2021), there cannot be a one-cap-fits-all configuration of the strategic flexibility conceptualization, because of uncertainty and complexity involved, which in turn is dependent on firm and industry characteristics. However, Sanchez (1997) provided the justification for classifying strategic flexibility into resource flexibility and coordination flexibility. According to him, while resource flexibility refers to the range of resources at the disposal of an organization, coordination flexibility on the other hand signifies the various strategic option available for deploying them. Additionally, Brinckmann et al. (2019) posited that organizations need strategic flexibility in order to enable them proactively or reactively respond and adapt to changing internal and market demands to remain viable and profitable. Asikhia (2011)
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canvassed that strategic orientation dimensions developed by Venkatraman (1989) be incorporated as dimensions of strategic flexibility, which informed the inclusion of futurity as a dimension of strategic flexibility in this study.

Innovation Performance. Innovation performance is key to increasing the value of business, and innovation a major driver in enhancing performance and economic growth of firms and wealth of nations organizations (Ponta et al., 2021; Robertson et al., 2021). The strength of organizations to innovate in contemporary times is being challenged in uncertain, changing and complex market environment. It therefore becomes imperative for pharmaceutical firms to be able to quickly adjust their strategies to meet constantly changing drug demands, thereby bringing into the picture the notion of strategic flexibility, which confers on an organization the capability to actively acquire, reconfigure and integrate needed tangible and intangible resources to meet new consumer demands, thereby playing a major role in the firm’s innovation performance.

Different scholars have defined the construct differently. Wang (2014) defines innovation performance as the results achieved by organizations based on the level of new products introduced or the substantial improvement on their services in the market. In another definition by Tuan et al. (2016), referring to the construct as innovative performance, they define it the combination of overall organizational achievements resulting from renewal and improvement efforts done considering all aspect of firm innovativeness, including processes, products, marketing and organizational structure. In a definition put forward by Abdulai (2019), innovation performance is the ability to transform innovation resources and capabilities into outputs that eventually lead to innovative market success. This definition lays emphasis the on the need for innovation using organizational resources and capabilities to lead to market success. Vem et al. (2022) defines innovation performance as the degree to which a business firm deliberately deploys resources to research and development, production and citation of patents, in addition to the unveiling of novel products. This study therefore defines innovation performance as the ability of a business firm to create and offer unique and superior products or services to meet prevailing market needs profitably.

According to Nwachukwu and Vu (2020), strategically flexible organizations can maximize innovation processes and swiftly adapt to a changing environment in order ensure survival. Increased innovation capability is one of the frequently reported outcomes of strategic flexibility (Brozovic, 2018). Several studies have offered empirical evidences on strategic flexibility as an antecedent to innovation, because as a combinative capability, it helps organizations to effectively redeploy resources and reconfigure existing processes and routines, which in turn enhance new product introduction (Meng et al., 2020). Researchers have examined how strategic flexibility influence innovation performance of businesses in different contexts (Ahmadi & Osman, 2018; Broekaeart et al., 2016; Nwachukwu & Vu, 2020; Voudouris et al., 2017).

In Turkey, Iran, Europe and Nigeria, studies have established that strategic flexibility leads to increased innovation performance of business firms (Ahmadi & Osman, 2018; Broekaeart et al., 2016; Nwachukwu & Vu, 2020). More recently, Kong and Suntrayuth (2021) found strategic flexibility of businesses in emerging economies has a significant positive effect on innovation performance. Similarly, Han and Zhang (2021) studies manufacturing firms in China, and found that resource flexibility enhances the positive impact of coordination flexibility on product innovation. Furthermore, Ni et al. (2021) found a positive effect of organizational flexibility on organizational innovation measured by technological and management innovations among project-based enterprises in the construction industry in China. In Pakistan, Saeed et al. (2021) established that strategic flexibility has a positive significant effect on innovation of manufacturing firms. Takaishi et al. (2016) also found that perception of strategic flexibility helps enhance the innovative behaviours among employees of Japanese firms than those employees working for foreign subsidiaries in Japan. Spanuth et al. (2020) in a study conducted among project-based firms in Germany, found a positive significant relationship between strategic flexibility and innovative capacity of the firms. Meng et al. (2020) who studied some industries in China have established the indirect effect of strategic flexibility on product innovation through bricolage. Similarly, Bashir (2023) found that strategic flexibility has positive significant effect on product development and organization development, as measures of financial performance.

In contrast, Miroshnychenko et al. (2021) surveyed 282 Italian small- and medium-sized businesses and found that strategic flexibility has no significant effect on the SMEs innovating their business models. Beltran-Martin et al. (2021) found that HR resource flexibility has negative but not significant effect on the development of new services by professional service firms in Spain. Similarly, Voudouris et al. (2017) studies the effect of labour flexibility on innovation in new ventures in Greece. The findings revealed that mixed effects of labour flexibility dimensions of functional flexibility and numerical flexibility on innovation dimensions of incremental product innovation and radical product innovation. In addition, Beraha et al. (2018) found that among the three dimensions of strategic flexibility in their study, only production flexibility and marketing flexibility had significant effect on product innovation, whereas Human Resource flexibility has no significant effect on product innovation. Therefore, the effect of strategic flexibility on innovation performance is believed to be divergent and inconclusive. This study, therefore, hypothesized that:
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H01: Strategic flexibility has no significant effect on innovation performance of quoted pharmaceutical companies in Nigeria.

III. RESEARCH METHOD

A. Sample and data collection

Survey research design was adopted by the study. The primary population of the study were the six quoted pharmaceutical firms in Nigeria: Fidson Healthcare Nigeria Plc., May & Baker Nigeria Plc., Morison Industries Plc., Neimeth International Pharmaceuticals Plc., GlaxoSmithKline Consumer Nigeria Plc., and Pharma-Deko Plc. However, the secondary population from who responses were solicited consisted of the 642 management and senior staff employees in the six quoted firms. The selected employees are very well informed about the strategic direction of the companies and possess the necessary information about the systems, structures, as well as the strategic activities of their firms (Ahmadi & Osman, 2018; Kurniawan et al., 2019; Xiu et al., 2017). The study adopted total enumeration of the target population as the sampling technique for the study, with 642 printed questionnaires were administered on the survey participants between January to March, 2023, and recording a response rate of 79.9%. In order to handle common method bias, the study place the independent variables and the dependent variables into different sections of the questionnaire. Equally, the survey participants were assured of the confidentiality of their responses (Jordan & Troth, 2020; Podsakoff et al., 2003).

B. Measures

Strategic flexibility is a multi-dimensional construct measured with five sub-variables of resource flexibility, coordination flexibility, proactive flexibility, reactive flexibility and futurity. Resource flexibility has five items adapted from the works of Bhattacharya et al. (2005), Chauhan and Singh (2014) and Han and Zhang (2021). Coordination flexibility is measured with five items adapted from the works of Han and Zhang (2021), and Mai et al. (2021). Proactive flexibility has with five items adapted from Eryesil et al. (2015) and Fan et al. (2013), while reactive flexibility has five items adapted from Asikhia (2010) and Fan et al. (2013). Futurity is measure with five items adapted from Espino-Rodriguez and Ramirez-Fierro (2018), and Karabulut (2015). Furthermore, Innovation performance has five items adapted from Ahmadi and Osman (2018).

C. Data analysis

The study subjected data collected from the survey to confirmatory factor analysis to confirm the reliability and validity of the research instrument. Confirmatory factor analysis was conducted to evaluate reliability and validity of the research instrument, using PLS-SEM. Question items 3, 4, and 5 were dropped for resource flexibility and question item 3 dropped for reactive flexibility due to poor factor loadings. PLS-Structural Equation Modelling (PLS-SEM) using the SmartPLS version 4.0.9 was adopted in testing the null hypothesis. Results obtained from the PLS-SEM path analysis are presented in Table IV, showing beta coefficients, t values, p values, and Stone-Geisser $Q^2$ obtained from the model. The $Q^2$ verifies the structural model’s predictive relevance and scholars state that $Q^2$ values of 0.02, 0.15 and 0.35 indicate small, medium and large predictive importance, respectively. According to Hair et al. (2013; 2017), $Q^2$ greater than zero confirms that a given structural model is appropriate. Additionally, T value ≥ 1.96, p ≤ 0.05, and $Q^2$ above zero confirm a statistically significant effect and that the structural model specified is fit.
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D. Results

The descriptive statistics of the survey responses is presented in Table 1.

Table I. Descriptive Statistics of Variables

<table>
<thead>
<tr>
<th>Variables</th>
<th>Mean</th>
<th>Std. Dev.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strategic flexibility</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Resource flexibility (RSF)</td>
<td>4.33</td>
<td>1.22</td>
</tr>
<tr>
<td>Coordination flexibility (COF)</td>
<td>4.67</td>
<td>0.99</td>
</tr>
<tr>
<td>Proactive flexibility (PRF)</td>
<td>4.61</td>
<td>1.14</td>
</tr>
<tr>
<td>Reactive flexibility (REF)</td>
<td>4.37</td>
<td>1.12</td>
</tr>
<tr>
<td>Futurity (FUT)</td>
<td>4.70</td>
<td>1.03</td>
</tr>
</tbody>
</table>

Innovation Performance (IP) 4.22 1.14

Reliability of the study constructs was measured using Cronbach’s alpha and composite reliability. As presented in Table II, Cronbach’s alpha and composite reliability (CR) values for all the constructs exceeded the minimum threshold of 0.70, thereby indicating high construct reliability. In addition, we tested for convergent validity by relying on the composite reliability and average variance extracted (AVE) values, which are all above the minimum threshold. All the constructs had satisfactory CR score ranging from 0.767 to 0.858 (Hair et al., 2019). The AVE values range from 0.563 to 0.802, which are well above the recommended threshold of 0.5 (Barclay et al., 1995). These indicated that high level of confidence that the indicators adequately measured the constructs. Moreso, we tested for discriminant validity using the Fornell and Larcker (1981) criterion. Values for discriminant validity as presented in Table III, showed that they are all above the coefficients of correlation among them. This further signifies a higher level of confidence that latent constructs are unrelated.

Table II. Cronbach’s alpha, Composite Reliability and Average Variance Extracted

<table>
<thead>
<tr>
<th>variables</th>
<th>Cronbach’s alpha</th>
<th>Composite reliability (rho-α)</th>
<th>Average variance extracted (AVE)</th>
</tr>
</thead>
<tbody>
<tr>
<td>COF</td>
<td>0.828</td>
<td>0.846</td>
<td>0.593</td>
</tr>
<tr>
<td>FUT</td>
<td>0.816</td>
<td>0.855</td>
<td>0.581</td>
</tr>
<tr>
<td>PRF</td>
<td>0.803</td>
<td>0.837</td>
<td>0.563</td>
</tr>
<tr>
<td>REF</td>
<td>0.762</td>
<td>0.767</td>
<td>0.585</td>
</tr>
<tr>
<td>RSF</td>
<td>0.763</td>
<td>0.858</td>
<td>0.802</td>
</tr>
<tr>
<td>IP</td>
<td>0.845</td>
<td>0.846</td>
<td>0.619</td>
</tr>
</tbody>
</table>

Note: COF = Coordination flexibility, FUT = Futurity, IP = Innovation performance, PRF = Proactive flexibility, REF = Reactive flexibility, RSF = Resource flexibility

Table III. Discriminant Validity of the Variables

<table>
<thead>
<tr>
<th></th>
<th>COF</th>
<th>FUT</th>
<th>IP</th>
<th>PRF</th>
<th>REF</th>
<th>RSF</th>
</tr>
</thead>
<tbody>
<tr>
<td>COF</td>
<td>0.770</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FUT</td>
<td>0.525</td>
<td>0.816</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IP</td>
<td>0.477</td>
<td>0.506</td>
<td>0.787</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PRF</td>
<td>0.457</td>
<td>0.585</td>
<td>0.519</td>
<td>0.801</td>
<td></td>
<td></td>
</tr>
<tr>
<td>REF</td>
<td>0.605</td>
<td>0.635</td>
<td>0.560</td>
<td>0.564</td>
<td>0.765</td>
<td></td>
</tr>
<tr>
<td>RSF</td>
<td>0.327</td>
<td>0.248</td>
<td>0.273</td>
<td>0.160</td>
<td>0.256</td>
<td>0.896</td>
</tr>
</tbody>
</table>

Note: COF = Coordination flexibility, FUT = Futurity, IP = Innovation performance, PRF = Proactive flexibility, REF = Reactive flexibility, RSF = Resource flexibility

From the results presented in Table IV, the adjusted coefficient of determination (Adj. R²) of 0.42, indicated that strategic flexibility dimensions are only responsible for 42% variation in the innovation performance of the firms, with the remaining variation in innovation performance of the pharmaceutical companies to be accounted for by other factors. The effect was statistically significant at 95% confidence interval and p values less than 0.05, showing that strategic flexibility can account for 42% of changes in the innovation performance of the pharma companies.
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Table IV. Summary of the PLS-SEM for the effect of Strategic Flexibility Dimensions on Innovation Performance of Quoted Pharmaceutical Companies in Nigeria

<table>
<thead>
<tr>
<th>Strategic Flexibility Dimensions</th>
<th>Original Sample Mean</th>
<th>Sample Mean</th>
<th>Standard Deviation</th>
<th>T-statistics</th>
<th>P-values</th>
<th>F²</th>
<th>Q²</th>
<th>Adj. R²</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coordination Flexibility -&gt; Innovation Performance</td>
<td>0.124</td>
<td>0.124</td>
<td>0.046</td>
<td>2.688</td>
<td>0.007</td>
<td>0.016</td>
<td>0.409</td>
<td>0.42</td>
</tr>
<tr>
<td>Futurity</td>
<td>0.191</td>
<td>0.193</td>
<td>0.05</td>
<td>3.789</td>
<td>0</td>
<td>0.03</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Proactive Flexibility -&gt; Innovation Performance</td>
<td>0.197</td>
<td>0.195</td>
<td>0.055</td>
<td>3.57</td>
<td>0</td>
<td>0.038</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reactive Flexibility -&gt; Innovation Performance</td>
<td>0.232</td>
<td>0.234</td>
<td>0.055</td>
<td>4.192</td>
<td>0</td>
<td>0.043</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Resource Flexibility -&gt; Innovation Performance</td>
<td>0.103</td>
<td>0.102</td>
<td>0.036</td>
<td>2.867</td>
<td>0.004</td>
<td>0.016</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Researcher’s Result via SmartPLS V4.0.9 (2023)

The path coefficients of strategic flexibility dimensions (resource flexibility, coordination flexibility, reactive flexibility, proactive flexibility, and futurity) showed that all the strategic flexibility dimensions have positive and significant effects on innovation performance. Findings from the results showed that at 95% confidence level, coordination flexibility ($β = 0.124, t = 2.688$), futurity ($β = 0.191, t = 3.788$), proactive flexibility ($β = 0.197, t = 3.57$), reactive flexibility ($β = 0.232, t = 4.192$), and resource flexibility ($β = 0.103, t = 2.867$) were statistically significant in predicting innovation performance, owing to the $p$-values being less than 0.05 and $t$-values ≥ 1.96. Therefore, all the strategic flexibility dimensions were retained in both the predictive and the prescriptive models stated below:

Predictive model:

$$IP = 0.124COF + 0.191FUT + 0.197PRF + 0.232REF + 0.103RSF$$

Prescriptive model:

$$IP = 0.124COF + 0.191FUT + 0.197PRF + 0.232REF + 0.103RSF$$

Where:

- IP = Innovation Performance
- COF = Coordination Flexibility
- FUT = Futurity
- PRF = Proactive Flexibility
- REF = Reactive Flexibility
- RSF = Resource Flexibility

According to the prescriptive model, all the dimensions of strategic flexibility have statistically significant effect on innovation performance of the quoted pharmaceutical companies, and therefore should be given proper attention by the leaders and managers in the industry in Nigeria. In addition, from the prescriptive model, a unit change in coordination flexibility, futurity, proactive flexibility, reactive flexibility and resource flexibility leads to 0.124, 0.191, 0.197, 0.232 and 0.103 change in the innovation performance of the sampled firms, respectively. Furthermore, as presented in Table IV, reactive flexibility has the highest relative effect on innovation performance of the quoted firms, owing to its coefficient of 0.232 and $t$-value of 4.192. This was followed by proactive flexibility ($β = 0.197, t = 3.57$), futurity ($β = 0.191, t = 3.788$), coordination flexibility ($β = 0.124, t = 2.688$), with resource flexibility ($β = 0.103, t = 2.867$) having the lowest relative effect on innovation performance of the sampled firms.

Considering the F-Square ($F²$) statistics presented in Table 4, the effect sizes for futurity, proactive flexibility and reactive flexibility, which are 0.03, 0.038 and 0.042, respectively. According to Cohen’s $f²$, the effect sizes of these sub-variables on innovation performance are considered to be small, while the effect size of 0.016 for both coordination flexibility and resource flexibility, on innovation performance, is considered to be very negligible. In addition to this, Stone-Gleisser $Q²$ value was adopted to evaluate the predictive relevance of the stated structural model (Hair et al., 2013; Hair et al., 2017). Therefore, a $Q²$ value of 0.409, as presented in Table IV, clearly shows the appropriateness of the structural model, confirming that strategic flexibility has a large degree of predictive significance in terms of innovation performance of the quoted pharmaceutical firms in Nigeria. Consequently, in view of the PLS-SEM strength test (Adj. $R² = 0.425$, $p = 0.000$, $Q² = 0.409$), the study concluded that strategic flexibility has a positive significant effect on innovation performance of quoted pharmaceutical companies in Nigeria.

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and therefore rejects the null hypothesis, which states that strategic flexibility dimensions have no significant effect on innovation performance.

IV. DISCUSSION
The finding of the study concurs with the findings of various existing studies (Ahmadi & Osman, 2018; Broekaert et al., 2016; Han & Zhang, 2017; Ni et al., 2021; Nwachukwu & Vu, 2020; Saeed et al., 2021). For instance, Ahmadi and Osman (2018) investigated how small and medium-sized manufacturing enterprises in Iran can maximize the benefit derived from strategic flexibility. The study found that strategic flexibility has positive significant impact on innovation performance of the SMEs. Similarly, Nwachukwu and Vu (2020), who examined the microfinance banks (MFBs) in Nigeria, found that strategic flexibility has positive significant effect on innovation performance. The finding of this study further agrees with that of Broekaert et al. (2016), who investigated the relevance of organizational flexibility on innovation processes of family businesses in Europe. Findings from the study reveal that there is a positive significant relationship between organizational flexibility and innovation performance measured with product and process innovations. The finding by this study finds agreement with that of Kong and Suntrayuth (2021). They found that strategic flexibility of businesses in emerging economies has a significant positive effect on innovation performance. Similarly, Han and Zhang (2021) studies manufacturing firms in China, and found that resource flexibility enhances the positive impact of coordination flexibility on product innovation. Furthermore, Ni et al. (2021) found a positive effect of organizational flexibility on organizational innovation measured by technological and management innovations among project-based enterprises in the construction industry in China. In Pakistan, Saeed et al. (2021) established that strategic flexibility has a positive significant effect on innovation of manufacturing firms.

Furthermore, the finding does not find concurrence with that of Miroshnychenko et al. (2021), Beltran-Martin et al. (2021), and Supriadi et al. (2020). For instance, Miroshnychenko et al. (2021) surveyed 282 Italian small- and medium-sized businesses and found that strategic flexibility has no significant effect on the SMEs innovating their business models, while Beltran-Martin et al. (2021), found that strategic flexibility has negative but not significant effect on the development of new services by professional service firms in Spain. Supriadi et al. (2020) found that strategic flexibility dimensions have no significant effect on product competitive advantage, measured with product success and product competitiveness. Product success and product competitiveness may be taken as indicators of innovation performance.

Strategically flexible organizations can maximize the innovation process and promptly adapt to changing market demands and consumer preferences through flexible processes and organizational structures (Nwachukwu & Vu, 2020). According to Ahmadi and Osman (2018), flexible strategic resources enable an organization to achieve a higher level of proactive new product development without resource competition. Flexible strategies promote entrepreneurial orientation and grant organizations the ability to redeploy and reconfigure organizational resources in taking advantage of emerging business and market opportunities, thereby enhancing innovation performance (Chaudhary, 2019). Brozovic (2018) equally submitted that increased innovation capability is one of the fallouts of strategic flexibility. Therefore, the ability of organizations to innovate remains key organizational performance metric for firms facing uncertainty, where customers’ needs and market demands keep changing.

V. CONCLUSION
Study concluded that strategic flexibility can help businesses enhance innovation performance. The findings provided meaningful and valuable insights on how the quoted pharmaceutical firms can improve on their innovation performance levels by paying serious attention to and adoption of flexible strategies, including resource flexibility, coordination flexibility, proactive flexibility, reactive flexibility and futurity, in view of the increasing competition and dynamism in the business environment.

This study has made valuable contribution to the practice of management by identifying ways in which strategic managers can build flexibility into their organizational systems and structures to foster better innovation performance, even in the face of disruptions in the business environment. Based on the empirical evidence derivable from the present study, strategic managers and business leaders in the pharmaceutical industry can refer to the findings in order to strategically manage their resources and embed flexibility in their organizations as a coping strategy to face the challenges emanating from the unstable and unpredictable business environment and the global market.

Future studies should test the model in other industries, and also investigate the effect of potential moderators and mediators on the relationship between strategic flexibility and innovation performance. Longitudinal approach can be applied to examine causal relationship between strategic flexibility and innovation performance.

In all, the study contributed to the body of knowledge on strategic flexibility and innovation performance, most especially in the context of pharmaceutical industry in an emerging economy like Nigeria. The study also advanced the frontiers of the dynamic capability view (DCV), by providing theoretical backing to its assumptions.
The effect of strategic flexibility on innovation performance of quoted pharmaceutical companies in Nigeria

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