# STRATEGIC DECISION MAKING AND PRODUCT QUALITY OF SELECTED PHARMACEUTICAL FIRMS IN NIGERIA

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***Abstract***
*There is dearth of empirical studies on the relationship between strategic decision-making and product quality, particularly as it concerns pharmaceutical firms in Nigeria. In order to fill this lacuna in the management literature, this study was carried out to assess the effect of strategic decision-making on product quality of selected pharmaceutical firms in Nigeria using cross-sectional design. The study population comprised a total of eight hundred and ninety (890) employees of three (3) pharmaceutical firms. The sample size of two hundred and seventy-six (276) respondents was drawn from the population of the study using proportionate sample size determination formula. Data were generated using structured questionnaire and analyzed using both descriptive (mean) and inferential statistics (multiple regression analysis). The results indicated that the strategic decision-making of the studied pharmaceutical firms. It was found that decision quality, decision routine and decision commitment had insignificant influence on product quality. The implication of the result is that the overall quality of decisions as well as consistency of decision taken by pharmaceutical firms relative to their set objectives has not been efficient. In view of the findings, the study recommended that there should be a periodic review of the strategic decision-making process of the pharmaceutical industry to ensure that it is in line with the dynamic business environment, engagement of risk managers and experienced production line managers towards improving the quality of decisions and ensuring product quality.*
***Keywords:*** *Strategic-decision; Product-quality; Decision quality, and Pharmaceutical Firms*

## Introduction

Strategic decision-making is of the most imperative issue facing management of organization, and policymakers and more importantly, it is an issue of academic debate in the management literature. The novelty of strategic decision-making is linked with the fact that organizations (whether small, medium or large) will make decisions about how to improve their operations, and launch new strategic initiatives that supports their products and services. One of such sector that strives to align its strategic-decision-making is the pharmaceutical sector which has tremendous potentials to enhance economic growth due to its strong link to health and hence, labour and productivity.

Regardless of the fact that the pharmaceutical sector provides drugs and other health products and services that helps to ensure a healthy and productive workforce, the pharmaceutical sector provides quality employment to citizens and ensures that the health needs of citizens are met by means of making quality products available for consumption Anoke, & Okpanaki, 2022). According to Wambebe and Ochekpe (2022), the pharmaceutical sector cannot accomplish this without a robust strategic decision-making process aimed at realizing quality product. The value and impact of strategic decision-making in an organization cannot be over stressed because it gives organizations competitive edge through unique product offers. For instance, quite a number of pharmaceutical companies support customer-specific strategies as well as strategic decisions on

employees' welfare; pharmaceutical companies do this differently from other companies by making strategic decisions on how to reward customers and employees (Anoke,2019).

Aside making strategic decisions targeted at customers and employees, they engage in research funding, sponsorship to local and international conferences/trainings, etc. in order to facilitate recommendation for their product lines; thus one of the reasons why pharmaceutical companies spend millions of naira on strategies (Lagos Business School, 2020). Elbanna, Thanos and Jansen (2020) noted that the quality of products offered by companies to their customers is very vital in making them gain competitive advantage. Ibobo and Nzewi (2020) noted that companies can gain competitive advantage by having improved decision quality, routine decision and decision commitment.

To further make pharmaceutical firms gain competitive advantage, several regulations or regulatory frameworks in Nigeria have been established. According to Obukohwo et al, (2018), these regulatory frameworks are to make pharmaceutical firms have products that are not defective and harmful to consumers. In the same vein, Elbanna et al, (2020) asserted that top pharmaceutical brands have leveraged on effective strategic decision-making to build decades of trust and quality for their products. Mohammed, Rashid and Tahir (2017) noted that strategic decision-making creates dynamic situation at both organizational and individual levels which leads to formation of core goals for achievement and of corporate competitive advantage through unique product offers.

The pharmaceutical industry was estimated to worth US$ 600 million in 2019 and ought to have grown substantially at around 12 per cent year-on-year to reach US$ 717 million by 2022 (Wambebe & Ochekpe, 2022). Evidence from the Manufacturers Association of Nigeria (MAN, 2021) has shown that the informal retail market in the industry accounts for more than three quarters of the value of the pharmaceutical market with estimates suggesting that parallel imports could account for up to half of all drugs sold in priority therapeutic areas, including infectious disease and cardiovascular (PMG-MAN,2010). However, despite government efforts to promote the pharmaceutical industry, Nigeria remains heavily reliant on imported pharmaceutical products (MAN, 2021). According to UNIDO (2022) report, there are about one hundred and twenty (120) local drug manufacturers in Nigeria. Capacity utilization within the industry is about 40 per cent, meaning that there is a large volume of under-utilized manufacturing capacity which could be applied to produce new products upon demand.

Like in every other organization, strategic decision making is one key driver of product uniqueness and competitive advantage (Ibobo & Nzewi, 2020). The theory of globalization which has bridged the gap between global companies in terms of communication, distribution of goods and services etc. has created a very stiff competition between local manufacturers and global manufacturers. The scramble for customers from the African market, especially Nigeria, has made many companies in the pharmaceutical industry to adopt neck-breaking strategies. Some of these strategic decisions include international certifications (e.g. Ekocorp, Nigeria-German Chemicals Plc etc.), local procurements (e.g. Fidson Healthcare, May and Baker), among others. The commitment to decisions and flexibility of the decisions taken by board members of these pharmaceutical firms are competitive features that are products of a quality decision making process in these firms. To the researchers' knowledge, components of decision-making process (e.g. decision quality, decision routine and decision commitment) in pharmaceutical companies are relatively unknown and how strategic decisions affect their product quality is very sketchy in the management literature. Thus, there is the need to empirically examine the relationship between strategic decision-making and product quality of pharmaceutical

companies in Nigeria.

**Objectives of the Study**

The broad objective of this study was to assess the relationship between strategic decision-making and product quality of pharmaceutical firms in Nigeria. The specific objectives are to:

i. examine the effect of decision quality in promoting quality of pharmaceutical products in Nigeria;
ii. determine the effect of decision routine on quality of products offered by pharmaceutical firms in Nigeria;
iii. assess the effect of decision commitment on quality of product offered by pharmaceutical firms in Nigeria.

**Research Hypotheses**

In line with the specific objectives, the following research hypotheses were formulated:

***$H_{01}$:*** There is no significant effect of decision quality on quality of pharmaceutical products in Nigeria.

***$H_{02}$:*** There is no significant effect of decision routine on quality of products offered by pharmaceutical firms in Nigeria;

***$H_{03}$:*** Decision commitment has no significant effect on quality of products offered by pharmaceutical firms in Nigeria.

## Review of Related Literature

### Strategic Decision-Making

Decision-making is a process that occurs daily in homes, schools, political and governmental organizations, corporate boardrooms and executive offices. Decisions, especially important decisions, are made by leaders and managers located at the top of the organisational hierarchy (Hickson, Richard, Wilson, David & Geoffery, 1986 as cited in Egbule et al, 2016). By definition, decision-making is the process through which managers identify organisational problems and attempt to resolve them (Bartol & Martin, 1994). In the words of Harris, (2009) decision-making involves an act of identifying and ably selecting among an array of alternatives based on the inclination. It includes variety of processes that are all intermediate steps between thought and action which are the precursors to behavior.

Strategic decision-making is an attempt to plan for the long-term future of an organization and increase the odds that the organisation will be successful. Strategic decision-making is a specific type of decision-making that is "important in terms of the actions taken, resources committed, or the precedent set (Eisenhardt & Zbaracki, 1992) in addition to Strategic decisions are a specific type of decision, as opposed to tactical decisions and operational decision (Bess & Dee, 2008). Mintzberg, Raisinghani and Theoret (1976) as cited in Walters and Hilborn (2013) explained the essence of strategic decisions: A strategic decision process is characterized by novelty, complexity, and open-endedness, by the fact that the organisation usually begins with little understanding of the decision situation it faces or the route to its solution, and only a vague idea of what that solution might be and how it will be evaluated when it is developed. Only by groping through a recursive, discontinuous process involving many difficult steps and a host of dynamic factors over a considerable period of time is a final choice made.

The purpose of strategic decision making is to contribute to finding ways to improve the organisation's performance. This contributes to the strategic decision to take the direction of organization and determine its ability to keep its position in the light of the environment in which they can be predictable. Tatum, Platter & Belk (2003) stated that managers make day-to-day decisions, or resolve immediate problems. They also elaborated that managers have different decision styles due to the amount of information, number of alternatives, and attempt to integrate and coordinate multiple sources of input. Nevertheless, the managers can take the right strategic decision through the decision-making process, which help to ensure the efficiency of the strategic decision. Elbanna and Child (2020) noted that strategic decision-making process

(SDMP) deals with the process of making the strategic decision, implementation and the factors that affect the process.

**Linking Strategic Decision-Making to Product Quality**

Decision-making is a process of successive approximation to some desired objective in which what is desired continues to change under reconsideration. There are seven stages of decision-making processes as discussed below:

- **Create a Constructive Environment:** Dean and Sharfman, (1996) maintained that decisions can become complex when they involve or affect other people. It is important to create a constructive environment in which to explore the situation and weigh up your options. (Digman, 2006) further indicates that when making a decision in a group, it is advisable to conduct a stakeholder's analysis to identify the right members to include in the process. In order to build commitment from the others, the stakeholders should be well represented in the decision-making group. This helps to achieve a participative decision-making process that represents the interests of all the members of the groups.

- **Investigate the Situation in Detail:** Dessa & Priem (1995) argued that before making decisions, it is important to understand the situation at hand. It might be that the objective of one individual to produce a certain product can be approached in isolation. However, there are a number of interrelated factors to consider. According to (Dessa & Priem, 1995), it is paramount that the decision maker start by considering the decision in the context of the problem it is intended to address. Then, define the problem using appreciation to extract the greatest amount of information from what one might know and inductive reasoning to draw sound conclusions from the facts. It is imperative to explore the problem from multiple perspectives and to make sure no information is left out.

- **Generate Good Alternatives:** Shrivastava and Grant (2005) maintained that before making decisions on a product to develop, the management should explore on the available alternatives. Generating a number of different products may seem to make the decision more complicated at first but the act of coming up with alternatives forces the management team to dig deeper and look at the problem from a different angle. Therefore, the management might decide to employ a variety of creative thinking techniques. These might help to step outside the normal patterns of thinking and come up with innovative products. Dutton & Duncan, (2007) contend that brainstorming is one of the most popular methods of generating ideas.
- **Explore Options:** According to Bond & Cummins (2000) if the management is satisfied with the selection of alternative products, it should evaluate the feasibility of risks and implications of each one. It is important to note that every decision involves some degree of risk. Therefore, the management should employ risk analysis in adopting a structured approach to assessing threats and evaluating the probability of adverse events occurring and what they might cost to manage. Digman (2006) highlighted that the board of management should then prioritize risks based on their impact or probability chart in order to focus on the ones that are most likely to occur.
- **Select the Best Solution:** Fredrickson & Mitchell, (2004) contend that when the management has settled on an alternative, the next step is to make a decision. This decision is made when one alternative is better than the rest. However, if the management observes that there are still competing options, there are many tools that they may use to help them in deciding between them (Anoke, Onu, & Agagbo, 2022). If the management has various criteria to consider, they might use decision matrix analysis in comparing the reliability and accuracy (Aliyu et al, 2017).

- **Evaluate the Plan:** In reference to Smith and Hayne (2007), before the board of directors' starts to implement its decision, they should evaluate all options possible to ensure that common errors have not crept into the process. The information should be trustworthy; the management should do its best on research based on concrete facts. Sorrell, (2010) indicates that this will help to avoid confirmation bias, a common psychological bias in decision-making.
- **Communicate Decisions and Take Action:** According to Smith & Hayne (2007) after the management makes a decision on a certain product, they need to communicate it to everyone affected by it in an engaging and inspiring way. They should get everyone involved in implementing the solution by discussing how and why they arrived at a certain decision. The more information provided about risks and projected benefits arising from producing a particular product, the more likely people will support the decision made Anoke, Nzewi, Eze, & Igwebuike, 2022).

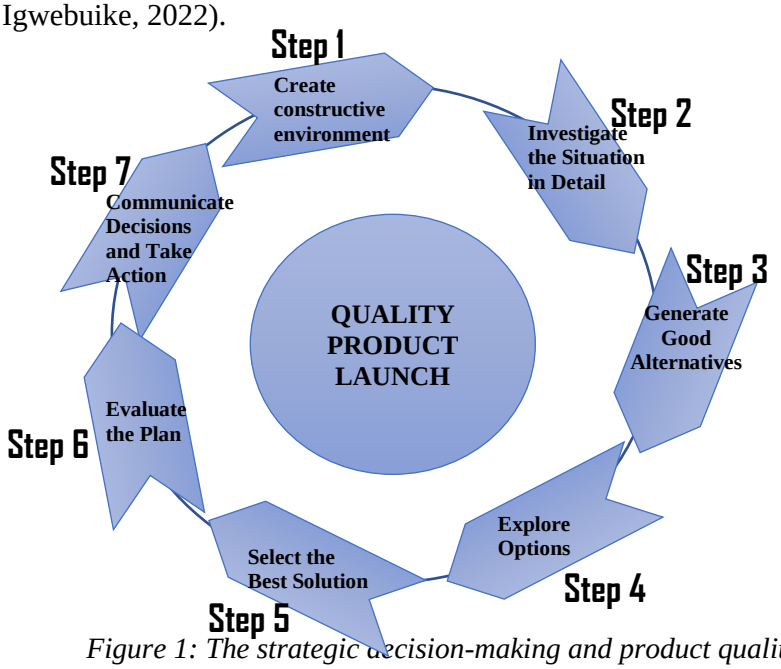


*Figure 1: The strategic decision-making and product quality framework*
*Source: Authors' Conceptualization (2023)*

## Theoretical Framework

The theoretical framework that supports this study is the Strategic Contingency Theory (SCT). Strategic contingency theory holds that a beneficial strategy should obtain a strategic fit with the dimensions of the environment in which it is implemented. This suggests that different strategies are required in different environments in which organisations operate (Baack& Boggs, 2008). The idiom 'contingency theory' was first introduced into the organizational studies lexicon in 1967 by Lawrence &Scott(2003). They conducted an empirical research to show the influence of organisational structure on the economic performance of organizations and argue that organisational performance is contingent upon environmental dimensions. Since then, contingency theory continues with its dominance in strategic organisational management literature as one of the central approaches to the study of organizational design and remains the most extensively adopted present-day theoretical approach to organisational studies (Scott, 2003).

The theory focuses more on strategy than structure and its concern is on the strategic fit or match between strategy and environment (Lee & Miller, 1996). Porter (1980), unequivocally states that "the essence of formulating competitive strategy is relating a company to its environment."

Although, one of the main concern of contingency theory is on how an organisation achieves strategic fit with the environment to enhance performance with respect to its structure, but it has also been applied to a number of studies. In relation to this study, the contingency theory places the responsibility of developing unique product on the management who follows the decision making process to develop a product that suits their immediate environment.

To achieve this strategic action of launching products that are of high quality and best suits the environment, Rehman, Khalid & Khan (2012) noted that there must be consistency in the moderated or mediated relationship between the competitive strategy and decision-making style used in advancing the product launch. Findings from previous studies indicate that different decision-making styles exhibit different impacts on organizational competitiveness through product quality (Rehman, Khalid & Khan, 2012; and Amzat & Idris, 2012,). Thus, the success of every decision making style is measured through consumer feedback mechanism on the product line.

***Empirical Review***

There are a number of studies that linked variants of decision making to product quality. While some of these studies may be directly linked to this present, others have indirect relationship but are within the same context. One of such works is that of Farida and Setiawan (2023) who examined the effect of business strategies on the improvement of competitive advantages of small and medium enterprises (SMEs) in the US. The sample of the study consisted of 150 SMEs in the construction and real estate industry. Using Descriptive statistics, they found that business strategies had a positive impact on competitive advantage of firms in the industry. They concluded that better business strategies improve the competitive advantage of SMEs. Sinnaiah and Mahadi (2023) in their study of organisational performance and the decision-making process found that strategic management and decision-making styles are vital in determining organisational performance by leveraging on intelligent opportunism in advancing an organisation's product line.

Brown (2023) in his study of competitive intelligence held that over the next few years, the rate of expertise used in adopting competitive intelligence in advancing service delivery will increase as information departments become more involved in inter-departmental projects and initiatives. Manolopoulos, et al. (2022) posited that when a rational and intuitive strategic decision making develops in conjunction, products turnover are met and financial performance improves. In contrast, a departure from rationality in favor of incremental decision-making processes advances only the social performance of firms.

Martins Rodrigues and Sousa (2022) analysed the evolution of competitive advantage through strategic logics and found that the process to choose strategic decisions depends on the environment uncertainty and internal factors. They asserted that changes in environment factors through dynamism or complexity generate different environment types, and these facts require different strategic logics according to Bingham and Eisenhardt model in advancing a product. Siljamäki (2021) included customer behavior in the analysis of decision support approach used in the development process of the S Group's Prisma hypermarket chain products in Finland. Using multivariate methods, they found that decision support system modelling for decision making comes from being able to provide decision makers with reasonable, better solution options to support their decision making (Anoke, Nzewi & Tukura, 2022).

Rasheed, Ahmed, Nasr, Abdulwase, Alyousofi and Yan (2020) assessed the relationship between strategic decision-making and organizational performance. They found that strategic decision-making significantly and positively affect organizational performance, particularly in terms of

profitability and productivity. Similarly, Sulistyo (2020) investigated the role of innovation capability, entrepreneurial orientation and social capital on competitive advantages of small and medium scale enterprises via multiple regression. Using primary data as the major instrument of data collection, they found that innovation capability, entrepreneurial orientation and social capital significantly affect unique product offering.

Hoe and Mansori (2018) used evidence from the Malaysian engineering industry to investigate the effects of product quality on customer loyalty as mediated by customer satisfaction. They found no direct relationship between performance, feature, reliability, conformance and customer satisfaction. While the relationship between durability, serviceability, aesthetic, perceived quality and customer satisfaction was supported. Obukohwo et al. (2018) assessed efficiency in the pharmaceutical sector of Nigeria using sample of twenty pharmaceutical companies in Nigeria. Using the Data Envelop analysis technique, they found that the pharmaceutical sector in Nigeria operates under a decreasing return to scale which implies slow decision making that has affected product offering.

Evidently, even though the importance of strategic decision-making is made known in these literature reviewed, there still appears to be gap in literature in terms of linking strategic decision indicators to product quality. The emphasis on competitive advantage of firms is generic and this present study tries to be more specific by taking on product quality as a measure of competitive advantage. Again, literature on strategic decision making are mostly foreign and do not take into cognizance the peculiarity of the Nigerian market. Studies on Nigeria are either few or non-existent. The use of the pharmaceutical industry as a case study in strategic decision making studies is a developing area of knowledge which upholds the existence of knowledge gap in this area of study.

### *Methodology*

In this study, the cross-sectional survey research design was employed. Cross-sectional survey design according to Mark, Philip & Adrian (2009) enables the researcher to obtain the viewpoints of diverse or wide-range of respondents on a research theme. The choice of cross-sectional survey design helps in inquisitions, collection of data, taking measurements with numbers and analysing testable research hypotheses on strategic decision-making and product quality.

The population for the study consists of three (3) top pharmaceutical firms listed on the floor of the Nigerian Exchange Group (NEG). These include May and Baker Nigeria Plc, Fidson Healthcare Plc and Neimeth International Pharmaceutical Plc. The total workforce of the selected listed pharmaceutical firms was put at 890. However, the proportionate sample size determination formula was used in obtaining the sample size of 276 (see Table 1):

***Table 1: Sample size distribution***

| S/N | Full Company name | Sector | Population | Proportionate Sample Size |
|---|---|---|---|---|
| 1. | May and Baker Nig. Plc | Healthcare | 308 | (308/890)*276 =**96** |
| 2. | Fidson Healthcare Plc | Healthcare | 394 | (394/890)*276 =**122** |
| 3. | Neimeth Int'l Pharm | Healthcare | 188 | (188/890)*276 =**58** |
| | **Total** | | **890** | **276** |
| | Sample size (n) = $\frac{N}{1+N(e)^2} = \frac{890}{1+890(0.05)^2} = 276$ | | | |

Source: Authors' Computation (2023)

The main instrument used for gathering data for this study is set of structured questionnaire. The structured questionnaire consists of two sections. Specifically, the Section A captures the general bio-data of the respondents while the Section B covered the data requirement for each of the hypotheses formulated. The questions were scaled on a 4-point Likert as follows: 1- Strongly Disagree, 2 – Disagree, 3 – Agree, 4- Strongly Agree. Cronbach alpha method was used in assessing the reliability of the questionnaire items on dimensions of strategic decision -making (decision quality, decision routine and decision commitment) and product quality and the results are shown in Table 2:

**Table 2: Result of Cronbach Alpha Coefficient**

| Paremeter(s) | Coefficients | Outcome(s) |
|---|---|---|
| Product Quality | 0.80 | Reliable |
| Decision Quality | 0.70 | Reliable |
| Decision Routine | 0.67 | Reliable |
| Decision Commitment | 0.71 | Reliable |

Source: Researcher's Computation (2023)

The study builds on the existing model of Nsour, (2016) who estimated a relationship between strategic decision-making and competitive advantages mediated by strategic thinking. The model of the study is given in its implicit form as follows:

$$ProdQual = f(DecQual, DecRout, DecComm) \quad [1]$$

*Where:*

*ProdQual* = Product quality
*DecQual* = Decision quality
*DecRout* = Decision routines
*DecComm* = Decision commitment.

In light of the above, the model that would guide the test of hypotheses in this study is stated in its explicit form as follows:

$$ProdQual_i = \beta_0 + \beta_1 DecQual_i + \beta_2 DecRout_i + \beta_3 DecComm_i + U_t \quad [2]$$

Where:

$\beta_0$= Intercept of the model
$\beta_1 - \beta_3$= Unknown coefficients of the model to be estimated
*i's* = Time period
$U_t$= Stochastic error term

**Description and a-priori expectation of the variables**

**Decision quality:** Decision quality is related with the overall quality of the decision relative to its intent. A measure was adopted from the study of Parayitam & Dooley (2007). Initially, five items were used to measure decision quality such as: 1) this decision was based on the best available information; 2) this decision was made based on valid assumptions; 3) this decision helps this (org) achieve its objectives, and so forth. It is expected to have positive effect on product quality.

**Decision routines:** This variable measures "an executable capability for repeated performance in

some context that has been learned by an organization in response to selective pressures" (Choo, 1996; Cohen,et al 1996). This study adopted five items to measure the variable which includes "articulation of strategic issues by the board", "Time consideration in strategic issues", etc. Product quality is expected to increase with effective decision routine.

**Decision commitment:** Decision commitment represents more than simple agreement. It requires active cooperation of the team and understanding and commitment to the decision. Five items were adopted from (Amason, 1996), including 'willingness of team members to achieve successful decision', 'willingness of team members to collaborate in decision making', etc. Product quality is expected to increase with effective decision commitment.

**Product Quality:** This is the dependent variables. It represents the companies' ability to present the market with unique product that differentiates it from competitors. It includes measures such as managing quality and quality assurance, systems of quality feedback, and level of employees' satisfaction. This dimension includes performance and features of products, reliability and conformance of products to specifications, durability and serviceability, value to customer and reputation (Anoke, Nzewi, Agagbo, & Onu, 2021).

Furthermore, descriptive statistics were used to summarize and present the data collected from the pharmaceutical firms while regression analysis was used in validating the research hypotheses. The cumulative responses of the participants for each questions is shown and the decision taken for that particular question based on the mean value of the responses. The decision on acceptance or rejection of a particular question is based on the 2.5 criterion mean which is derived by taking the average of the 4-point Likert scale. Any mean value that is above 2.5 is regarded as *positive* while any mean value below 2.5 is regarded as *negative*.

**Results And Discussions**

**Table 3: Summary of Responses From Selected Pharmaceutical Firms in Nigeria.**

| Code | Question items | SA | A | D | SD | Mean $\overline{X}$ | Decision |
|---|---|---|---|---|---|---|---|
| | Decision Quality (DQ) | | | | | | |
| DQ1 | Evaluates the impact of the decisions it makes. | 169 | 107 | 0 | 0 | 3.61 | *Positive* |
| DQ 2 | Qualifies the probability of success in its decision making. | 105 | 22 | 149 | 0 | 2.84 | *Positive* |
| DQ 3 | Quantify the probability of success in its decision making. | 0 | 86 | 96 | 94 | 1.97 | *Negative* |
| DQ 4 | Effectively communicates the decision it makes. | 0 | 59 | 101 | 116 | 1.79 | *Negative* |
| DQ 5 | Decision making process is fast and prompt. | 0 | 35 | 97 | 144 | 1.69 | *Negative* |
| | Decision Routine (DR) | | | | | | |
| DR1 | Uses a structured approach in its decision making. | 50 | 37 | 110 | 79 | 2.21 | *Negative* |
| DR2 | Rely on inputs from key members in its decision making. | 73 | 28 | 111 | 64 | 2.40 | *Negative* |
| DR3 | Uses information support system in its decision making. | 32 | 103 | 90 | 51 | 2.42 | *Negative* |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| DR4 | Follows ethical guidelines in its decision making | 71 | 130 | 17 | 58 | 2.78 | *Positive* |
| DR5 | Uses a disciplined procedure for generating alternatives in its decision making. | 111 | 96 | 18 | 51 | 2.97 | *Positive* |
| | Decision Commitment (DC) | | | | | | |
| DC1 | Provides training in the science of decision making. | 0 | 40 | 120 | 116 | 1.72 | *Negative* |
| DC2 | Allocates financial resources towards achieving decisions made. | 96 | 120 | 52 | 8 | 3.10 | *Positive* |
| DC3 | Necessary actions are taking in its decision making. | 77 | 118 | 12 | 69 | 2.74 | *Positive* |
| DC4 | Decision making process is consistent with its values. | 125 | 151 | 0 | 0 | 3.45 | *Positive* |
| DC5 | Accept responsibility from outcomes of decision making. | 97 | 158 | 12 | 9 | 3.24 | *Positive* |

*Source: Field Work (2023)*

Table 3 showed that there is insufficient quantitative analysis employed by the organizations in their decision making process, there is ineffective communication and decision making is not fast and prompt (DQ3, DQ4 and DQ5). The respondents strongly agreed that the decision routine in the pharmaceutical companies follow ethical guidelines and disciplined procedure (DR4 and DR5). The allocation of financial resources towards achieving decisions which proves their commitment to decision making was positive while provision of training in the science of decision making was negative. On the overall, the negative mean values proves that the respondents disagreed while the positive mean values proves that the respondents agreed with the questions posed.

**Table 4: Quality of Products in the Selected Pharmaceutical Firms in Nigeria**

| Code | Question items | SA | A | D | SD | Mean $\bar{X}$ | Decision |
|---|---|---|---|---|---|---|---|
| | **Quality of Products (QP)** | | | | | | |
| QP1 | My organization products perform well on what they are supposed to do. | **91** | **101** | **14** | **70** | 2.77 | ***Positive*** |
| QP2 | Management meet periodically to review the performance of products range | **12** | **11** | **224** | **29** | 2.02 | *Negative* |
| QP3 | The number of products with physical defects is very low in my organization. | **121** | **106** | **49** | **0** | 3.26 | ***Positive*** |
| QP4 | Products have low warranty costs for my organization. | **130** | **84** | **62** | **0** | 3.25 | ***Positive*** |
| QP5 | My organization products are aesthetically more appealing than that of competitors. | **118** | **137** | **17** | **4** | 3.34 | ***Positive*** |

*Source: Field Work (2023)*

The question items with code number QP1, QP3, QP4 and QP5 returned positive mean values of 2.77, 3.26, 3.25 and 3.34 respectively. The implication of this is that the respondents strongly agreed that their organization products perform well on what they are supposed to do, the number of products with physical defects was very low, products have low warranty costs and that products are aesthetically more appealing than that of competitors. However, they disagreed that management meet periodically to review products range.

**Ho1:** There is no significant effect of decision quality on quality of pharmaceutical products in Nigeria.

**Table 5: Vital Regression Statistics for Decision Quality and Product Quality**

| Coefficient | t-statistics | p-value |
|---|---|---|
| -0.111 | -2.024 | 0.044 |

*Source: Field Work (2023)*

The coefficient is negative while the *p-value* of the t-statistic is less than 0.05. We therefore reject the null hypothesis and conclude that there is significant effect of decision quality on quality of pharmaceutical products in Nigeria. However, the negative coefficient implies that decision quality decreases the product quality of the pharmaceutical companies significantly by 0.111 units.

**$H_{02}$:** There is no significant effect of decision routine on quality of products offered by pharmaceutical firms in Nigeria

**Table 6: Vital Regression Statistics for Decision Routine and Product Quality**

| Coefficient | t-statistics | p-value |
|---|---|---|
| -0.073 | -1.643 | 0.102 |

*Source: Field Work (2023)*

The coefficient is negative while the *p-value* of the t-statistic is greater than 0.05. Therefore, we accept the null hypothesis and conclude that there is no significant effect of decision routine on quality of products

offered by pharmaceutical firms in Nigeria. The negative coefficient implies that the decision routine in the pharmaceutical companies decreases their product quality but not significantly.

**$H_{03}$:** Decision commitment has no significant effect on quality of products offered by pharmaceutical firms in Nigeria.

**Table 7: Vital Regression Statistics for Decision Commitment and Product Quality**

| Coefficient | t-statistisc | p-value |
|---|---|---|
| 0.036 | 0.485 | 0.628 |

*Source: Field Work (2023)*

Since the value of the coefficient is positive but the *p-value* of the t-statistic is greater than 0.05, we conclude that decision commitment increases the pharmaceutical companies product quality but the increase was not significant. This implies that we are accepting the null hypothesis stated above.

This study on strategic decision making has exposed the level of decision making quality as well as the decision routine and decision commitment of the top three pharmaceutical companies in Nigeria. We found that decision quality of the companies decreases their product quality significantly while decision routine decreases their product quality as well but not significantly. Given these two similar but contrasting revelations, what can we adduce to be the reason? Firstly, we contend that the significantly negative effect of decision quality on product quality may be as a result of the non-quantification of the probability of success and failure prior to decision implementation proper as well as slow and non-communication of decisions. This was evident in the questionnaire responses which returned negative mean value. Also, Brown (2023) contend that the rate of expertise used in adopting competitive intelligence in advancing service delivery will increase with inclusion of inter-departmental initiatives in the next few years. Non-conformity to the adoption of this initiative can as well diminish the decision quality of any firm.

*Furthermore, decision routine was found to decrease decision quality but not significantly. The non-conformity with the use of structured approach and information support system etc. can be a driving factor for this. This goes a long way to corroborate the work of Obukohwo* et al. (2018) who concluded that the pharmaceutical sector in Nigeria operates under a decreasing return to scale which implies slow decision making that has affected product offering. The theoretical position of the contingency theory which upholds the tenet of firms obtaining a strategic fit in their decision making that suits the dimensions of the environment in which it is implemented. Baack & Boggs (2008) held that different strategies are required in different environments in which organisations operate in order to make their products to penetrate the market.

Decision commitment of the companies increased product quality but not significantly. Thus, when decision quality and routine is faulty, the commitment to decisions may not significantly impact the product quality of the firm. Manolopoulos, et al. (2022) holds that when a rational and intuitive strategic decision making develops in conjunction,products turnover are met and financial performance improves. This assertion upholds the vital role of decision commitment in the product advancement process. Also, Sinnaiah and Mahadi (2023) agreed that strategic management and decision-making styles are vital in determining organisational performance by leveraging on intelligent opportunism in advancing an organisation's product line. Even though most studies are not in the pharmaceutical industry, they remain relevant in the study of strategic decision making as it concerns product quality in the Nigerian pharmaceutical industry. The overall fitness of the

model was estimated at 74.5 per cent which means that about 74.5 per cent of the changes in product quality of pharmaceutical companies studied are being accounted for by the strategic decision making indicators. There is strong evidence that strategic decision making is what the pharmaceutical industry needs to set on the path of improved product quality and resilience in the Nigerian market.

**Conclusion and Recommendations**

This study has established that the overall quality of the decisions taken by pharmaceutical companies relative to their set objectives have been inefficient. Also, the routines taken in the decision making process of the pharmaceutical companies have not been consistent which led to the decline in their product quality. However, the management team of the pharmaceutical companies does not actively cooperate towards understanding decisions taken. The deduction made from the analysis is that strategic decision-making process has not been efficient and as a result affected product quality of pharmaceutical companies in Nigeria negatively.

Firms in the pharmaceutical industry in Nigeria should initiate measures to improve their strategic decision-making mechanisms, as this would improve product quality and enhance cost reduction drive. This can be done by way of engaging risk managers and experienced production line managers who will analyze the production cost using statistical and other quantitative means thus improving the quality of their decisions  Similarly, pharmaceutical firms should enhance their strategic decision making by advancing a flexible decision making process. By this, they should be open to changes in the business environment and swiftly react to maintain their production line as well as product quality.

Obviously, the analysis found that the firms in the pharmaceutical industry still struggle to promote their product quality through effective strategic decision making process. As such, there should be a periodic review of their strategic decision-making process to ensure that it falls in line with the dynamic business environment; this will make the firms' product quality to always be up-to-date and accepted by the consuming public.

**Contributions and Suggestion For Future Studies**

This study has widened the knowledge frontier on the subject matter thereby enabling future through researchers to have a theoretical and empirical foundation. Decision makers in the pharmaceutical industry can effectively commit to decisions, increase their decision routine and ensure quality decision making process through the application of the contingency theory as a way of ensuring unique product quality. The study provides detailed recommendations for decision makers in the pharmaceutical companies in Nigeria on how to realize and enhance their product quality the intervention of strategic decision making.

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