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Organizational Structure and Performance of Pharmaceutical Firms in Anambra State, Nigeria

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Abstract: *This study examined organizational structure and performance of pharmaceutical firms in Anambra State, Nigeria. Specifically, the study investigated the effect of nature of formalization; hierarchical layer; departmentalization; span of control and chain of command; which were the independent variables on performance of pharmaceutical firms in Anambra State. The study adopted descriptive survey design. The area of the study covered Anambra state, Nigeria. The population of the study was 2220 employees of the selected pharmaceutical firms in Anambra State, Nigeria. Sample size of 428 was determined using Borg and Gall formular of 1973. Data were generated through both primary and secondary sources. Instrument for Data collection was a structured questionnaire on a five - point likert scale. The study adopted face and content validity while test re-test was used for ascertaining reliability of the instrument. Data gathered were analyzed using frequency tables while hypotheses were tested using Ordinary Least Squares Regression Technique. The study revealed that nature of formalization; Hierarchical layer; departmentalization; span of control and chain of command had significant positive effect on the performance of Pharmaceutical firms in Anambra State, Nigeria. Based on the findings, the study recommended among others that management should critically analyze the effectiveness and efficiency of the nature of formalization as an important predictor of performance. Proper hierarchical layer structures should be put in place in order to achieve set goals and objectives; and organizations should redesign their structures of hierarchical layer in order to attain the expected performance. Organizations should adopt departmentalization structure and reduce formalization in the work place. Managers of organizations should adopt more departmentalization forms of structures as means of improving the decision making process; managers should combine both task routine and variety in organizing employees for carrying out tasks in order to reap the advantages of both systems of task assignment; employees should be empowered to be more innovative in carrying out tasks, which will increase organization performance. Management should design appropriate chain of command from upper organizational levels to lower levels to improve financial and structural expansion in pharmaceutical firms in Nigeria.*

Keywords: *Corporate Entrepreneurial Dimensions, Risk-Taking, Proactiveness, Corporate venture, Strategic Flexibility*

1.1 Introduction

An organizational structure divides the entire organization into distinct parts, functions and defines the relationships among the various teams. The organization structure defines who has responsibility for what roles as well as documenting the reporting lines within the organization. Designing the structure of an organization goes beyond the definition of the relationships among the parts, but also shows the resources and systems needed to support performance within the

organization. The appropriate structure should therefore facilitate proper coordination of organizational processes to achieve the set goals of the organization (Mansoor, Aslam, Barbu, & Carpusneanu, 2014).

The purpose of structure is the division of work among members of the organization, and the co-ordination of their activities so they are directed towards the goals and objectives of the organization. An organizational structure is mostly a hierarchical concept of subordination of entities that collaborate and contribute to towards a common aim. Organizations are a number of clustered entities. The structure of an organization is usually set up in a variety of styles dependent on their objectives and the structure of an organization will determine the modes in which it shall operate and will perform (Nwachukwu, 2014).

Organizational structure across the world has attracted widespread attention in terms of research and debate among organizational managers and academia. Managers who set out to design an organization structure face difficult decision. They must choose among a myriad of alternative frameworks of jobs and departments. The first decision focuses on individual jobs, the second decisions focus on departments or groups of jobs, while the next decision considers the issue of delegation of authority throughout the structure (*Akinyele 2015).* Organizational structure is therefore a critical component that drives organizational success. *Ashkenas, Ulrich and Jick (2014)* posit that organizational structure is used by various firms as a control mechanism to affect employee work outcomes, to ensure that the required tasks are performed effectively and efficiently, and to assist the attainment of organizational goals and objectives. Organizational structure defines the scope of behaviour within an organization, its lines of authority, accountability and to some extent, the organization's relationship with its external environment. It shows the pattern of relationship with jobs within an organization (*Bucic & Gudergan 2014).* Organizational structure determines the pattern of communication as well as the formal lines of interaction between individuals within organizations

Pharmaceutical firms *are faced with mixed performance. Evidences from the subsector confirm that quite a number of* pharmaceutical firms *are performing very poorly. In some cases, they go into liquidation, while few others are performing excellently well, using all known performance indicators, for instance, some* Pharmaceutical firms *have been paying dividend to their shareholders consistently for the past twenty years (*Malik, 2016). *Besides payment of dividend, almost all other performance indicators have been on the positive trend. However, the excellent performances of few of them are still worrisome as about 70% of* Pharmaceutical firms *went under within the last twenty years (*Malik, 2016)*.The essence of this study is to determine whether adopting appropriate structure is one of the critical success factors that support those firms that are performing well in the sector, and the extent to which appropriate structure has helped the performance of the organization. However, studies have established that efficient and effective performance depend on the designing and adoption of a fitting structure by the organization, in other words, there is no effective and efficient organization if the structure of the organization does not support the people who work within the system that provide the key element to determine its success (*Malik, 2016).

An employee is a person whose actions and inactions within the organization is influenced by both economic and psycho-social factors. Therefore, the complexity, formality and how concentrated the structure an organization operates can either provide frustration or satisfaction to the

employees. The structure can either cause the employees to indulge in wasteful organizational practices or provide them with environment for supportive work behavior. In all these, the overall performance of the employee is at the receiving end. The structure of an organization is very crucial to the realization of enhanced employee performance.

Many pharmaceutical firms in Nigeria are experiencing performance challenges with many reporting profit warnings due to challenges in the operating environment. Previous studies have shown that contingent organizational factors are critical drivers to performance of organizations. Organizations seek to fit their organizational factors to contingencies in order to achieve high performance and to avoid any losses resulting from the misfit when contingencies change. In addition, previous empirical findings show that contingent firm factors measures have lacked precision and consistency by providing no clear direction on the influence of contingent organizational factors on firm performance. Many studies have focused on financial performance measures, ignoring non-financial indicators like environment (Kargar & Parnell 2009). It is therefore inadequate to merely analyze firm performance by financial performance, especially under today's changing operating environment (Qi, 2010).

1.2 Objectives of the Study

The broad objective of this study is to examine the effect of organizational structure on the performance of pharmaceutical firms in Anambra state. Specifically, the study tends to:

1. Examine the effect of nature of formalization on the performance of pharmaceutical firms in Anambra state.
2. Investigate the effect of hierarchical layer on the performance of pharmaceutical firms in Anambra State
3. Determine the extent to which departmentalization affect the performance of pharmaceutical firms in Anambra State.
4. Evaluate the influence of span of control on the performance on pharmaceutical firms in Anambra state
5. Assess the extent to which chain of command influences performance of pharmaceutical firms in Anambra State.

1.3 Hypotheses

1. Nature of formalization has no significant positive effect on the performance of pharmaceutical firms in Anambra State
2. Hierarchical layer has no significant positive effect on the performance of pharmaceutical firms in Anambra State
3. Departmentalization has no significant positive effect on the performance of pharmaceutical firms in Anambra State
4. Span of control has no significant positive effect on the performance of pharmaceutical firms in Anambra State
5. Chain of command has no significant positive effect on the performance of pharmaceutical firm in Anambra State.

REVIEW OF RELATED LITERATURE

2.1 Theoretical Framework

2.1.1 Contingency Theory

Contingency theory of (Lawrence and Lorsch 1967) informs the theory of organizational structure by providing a comprehensive framework that relates variations in organizational structure to variations in the situation of the organization (i.e., its contingencies). Contingency theory is a class of behavioral theory that claims that there is no best way to organize a corporation, to lead a company, or to make decisions. Instead, the optimal course of action is contingent (dependent) upon the internal and external situation. A contingent leader effectively applies his own style of leadership to the right situation. The early writers on organizational structure, such as Fayol (1914), Gulick (1937) and Urwick (1943), used their own practical experiences to formulate a body of principles that would be universally applicable to any work organization irrespective of its context or purposes. These principles, usually called the classical theory, prescribe a structure where authority descends from the apex to the base, so that no subordinate receives instructions from more than one superior who, in turn, controls no more subordinates than he or she can effectively manage (Mooney and Reiley, 1939).

Where there is little deviation from the norm, mechanistic structures are able to set up efficient procedures for dealing with routine tasks. In an uncertain environment, these routine procedures are not able to cope with the high number of contingencies. A more organic structure is needed that is ready to deal with non-routine operations. According to contingency theory, both mechanistic and organic structures can be effective if they fit the irrespective environments. It is far too simple, however, to say that mechanistic structures work in certain environments and organic structures work in uncertain environments. In the real world, both types of structures can be found operating successfully in a variety of environmental situations. Organizations are not designed; they will evolve over time, moving through many different environmental situations as they grow. The structure of organizations, therefore, is not based on a purely rational analysis of the present environmental circumstances but also on a multitude of precedents and traditions built up over the organization's history. These organizational paradigms will be unique to each organization and may well simply reflect the beliefs of the organization 's founder. One cannot assume, for example, that a mechanistic organization suddenly faced with increasing uncertainty in their market will simply change their structure to a more organic form. It is important, therefore, to understand how each type of organization reacts to changing environmental circumstances

Many different aspects of organizational structure, such as formalization, decentralization, division of labour, span of control, hierarchy of authority and divisionalization are each related to contingencies such as size and diversification. In theory terms, contingency theory is sociological functionalism, and is relevant to this study by explaining the existence of fits between structure and contingencies and their beneficial effects on organizational growth such that the type of structure instituted by firms and its key dimensions influences their performance in various ways.

2.2 Empirical Review

Nosike, Okoye, and Afodigbueokwu, (2021**)** investigated organizational structure and employee performance of selected banks in Anambra state, Nigeria. The specific objectives are to ascertain the effect of nature of formalization and layers in the organizational hierarchy on employee performance of commercial banks in Anambra State, Nigeria. Survey research design was employed for the study. Data collected for the study was analyzed by the researcher and the three formulated hypotheses were tested using regression analysis statistical tool with aid of SPSS version 20.0 at 5% level of significance. The study revealed that nature of formalization and layers in the organizational hierarchy has significant effects on the employee's performance of commercial banks in Anambra state. Based on the findings, the study recommended the followings that bank managers should combine elements of both task routine and variety in organizing employees for carrying out task in order to reap the advantages of both systems of task assignment. Olaoye, Ayeni-Agbaje, Alabadan, & Adedeji, (2021), examined organizational structure and corporate performance of listed pharmaceutical companies in Nigeria. The study focused on five pharmaceutical companies listed on the Nigeria stock exchange. Secondary data were collected from annual reports of sampled pharmaceutical companies over a period of six years (2012-2017) and were analyzed using descriptive analysis, correlation analysis, pooled OLS estimator, fixed effect estimator, and random effect estimator and Hausman test. The most consistent and efficient estimator revealed that short term debt exerts insignificant positive effect on return on equity, with coefficient estimate of 0.094800 ($p=0.0946> 0.05$), effect of long-term debt is negative and significant, with coefficient estimate of -0.302446 ($p=0.0094< 0.05$), and firms size exert insignificant negative impact on return on equity, with coefficient estimate of -0.026763 ($p=0.3892> 0.05$). The study concluded that using large proportion of debt significantly influence the performance of pharmaceutical companies in Nigeria. The study recommends that firms should consider the mixture of equity and debt for better performance of the organization, since they are major determinants of corporate performance.

Ezejiofor, & Ezekwesili, (2021). Investigated the impact of organizational structure on the performance of pharmaceutical companies in Anambra State of Nigeria. The research was conducted using a descriptive survey research approach. The study's participants include 346 employees from 20 pharmaceutical companies in Nigeria's Anambra State. Using the Borg and Gall (1973) formula, a sample size of 67 was calculated. With the help of SPSS version 20, the researchers used regression analysis to examine the hypothesis. The findings revealed that working conditions and formalization have a positive significant impact on pharmaceutical company employee performance. Based on the findings, the study recommended that management of manufacturing companies in Nigeria should design appropriate organizational structure to improve the productivity of their workers

Nwosu (2020) determined whether there is appropriate structure in Nigeria brewing firms and the extent it has contributed to their employees‟ performances. Descriptive statistics, correlation and t-statistics, was adopted for analysis of data and hypotheses testing. The result of the study revealed that nature of hierarchical layers has significant positive effect on the employee's performance of brewing firms; that internal and external boundaries have significant positive effect on the employee's performance of brewing firms; and that formalization significantly affect employee's performance positively.

Gaspary, De Moura, & Wegner. (2020) studied How does the organizational structure influence a work environment for innovation?' The study analyses the influence of different dimensions of organizational structure on the development of a work environment for innovation. A case study with a mixed method approach was conducted in the Brazilian subsidiary of a multinational company recognised worldwide for its innovative capacity. The results contribute to the theory by showing that several structural dimensions – mainly the level of communication, level of formalisation and job codification – affect the work environment for innovation. The study also enriches the comprehension on how managers should design specific structural dimensions to stimulate creativity and innovation.

Bekanwah, Miidom, & Ojiabo (2020**),** evaluates Organizational Structure and Business Growth in Manufacturing Firms in Nigeria. The study examined the association between organizational structure and business growth in Nigeria. The autopoietic systems theory was adopted in explaining the possibility of how organizational structure could improve business growth in manufacturing firms in Nigeria. A sample size of 192 respondents was determined from a population of 220 managers and supervisors using Yamene's sample size determination technique. Questionnaire was used as method of data collection and copies of questionnaire were distributed out of which 187 copies were filled for data analysis. The data were analyzed using regression analysis on SPSS Version 23.0. The findings indicate that organizational structure has a significant and strong association with business growth. Based on these findings, the study concluded that organizational structure strongly affected business growth in Nigeria. Hence, the study recommended that Management should use formalization effectively as a tool to improve financial viability and structural expansion in manufacturing firms in Nigeria. Furthermore, Management should design appropriate chain of command from upper organizational levels to lower levels to improve financial and structural expansion in manufacturing firms in Nigeria

Muhammad (2019), examines the Effect of Organizational Structure on Company Performance in Manufacturing Industry. The study looked at the effect of complexity, formalization, nature of hierarchical and technology on company performance. Data were collected using a questionnaire, in order to measure how much influence, the organizational structure has on the firm performance. Data is processed using the SPPS program. The results of the analysis show that the organizational structure for complexity and nature of hierarchical variables has a positive but not significant effect while formalization and technology have a positive and significant effect on firm performance. Furthermore, adjusted R square obtained at 59.1% is influenced by the four variables, the other 40.9% is the contribution of other variables not included in this study.

Nene, & Pillay (2019), This study examined the impact of organizational structure on the organizational performance of the Property Administration Services Department (PAS) within an organization located at the Rosherville Industrial Area in Johannesburg South, South Africa. The study intended to give a practical perspective on the impact of a complex organizational structure on elements of personnel job satisfaction and departmental performance. The research instrument was designed to establish the elements that influence the composition of the organizational structure. Data analysis was done through descriptive and inferential statistics. The conclusion showed the inference between these elements and the actual aim of this study. The study did not directly compare the analysis of performance and organizational structure influence on it but rather aimed at establishing the general consensus by the participants on the likelihood of them accepting

suggestions and recommendations of the study. It was evident that the organizational structure is ineffective. The ineffectiveness of the structure was observed to have been a contributing factor to the low job satisfaction levels within the participants. The context of the study identified staff morale as the main contributor to poor performance. Therefore, it could be concluded that since the organizational structure negatively impacted staff morale, it also inadvertently negatively affected the performance of the department.

Nwankwo, Onyekwelu, Nnadi, (2019), examined the Effect of Organizational Structure on Performance of Pharmaceutical Companies In Nigeria. The study adopted the ex-post facto research design. The sample size has been purposively done. Three firms were selected and in the process GlaxoSmithKline, Neimeth, and May & Baker Nig. Plc. were selected. The analyses show that share capital has no significant effect on performance of pharmaceutical companies in Nigeria; share premium has no significant effect on performance of pharmaceutical companies in Nigeria; and Retained earnings have no significant effect on performance of pharmaceutical companies in Nigeria. The study recommends amongst other things that management should adopt policies that would favour appropriate increase in share capital size. This will help improve the propensity to better the ownership structure of the best known form of raising capital for firms.

Raziq, Ahmad, Iqbal, Ikramullah, & David. (2019**),** examined Organizational Structure and Project Success: The Mediating Role of Knowledge Sharing. They looked at the relationship among elements of an organizational structure (i.e., formalization, centralization and integration) with project success, and examines whether the relationships are mediated by knowledge sharing. There is limited understanding with regard to how various elements of organizational structure relate to knowledge sharing and project success. Taking a contingency approach and grounding our argument in the resource-based view of the firm, we show that certain elements of organizational structures have positive implications for the project organization. We draw on survey data from 220 respondents serving in (public and private) project-based telecom service provider firms in Pakistan. Our results show that formalization and integration are conducive to project success, but centralization is negatively related to project success. Knowledge sharing mediates the relationship between integration and project success for both the public and private telecom firms, but in case of formalization, knowledge sharing mediation exists only for the public firms. Based on these results we draw some implications for theory and practice.

Ugwu, Nnadi, and Udeze (2019) examined organizational structure and organizational performance in selected micro-finance banks in Enugu State. The study adopted survey approach in its design and generated data from primary and secondary sources. The population of this study covered 67 members of staff from the three selected micro-finance banks in Enugu State, while Cochran sample size determination statistical formula for finite population was adopted to select a sample of 57 members of staff for the study. The research instrument was subjected to both face and content validity while its reliability was tested using spearman's rank correlation coefficient which gave an output of r = 0.95. The data gathered was analyzed with the Non-Parametric Kruskalwallis test using the 15.0 version of the Minitab statistical software (MSS). The major findings revealed that organizational structure has significant effect on employee performance in the selected micro-finance banks. This assertion was drawn from the output of the data generated as the kruskawalis test (H) yielded 0.000 and 0.000 for the two hypotheses respectively. The study concluded that the present structure adopted by selected micro-finance banks is supportive of enhanced employee's performance and therefore should be encouraged. Sequel to the findings and

conclusion it was recommended that there is need to give orientation on the principles of organizational structure to the employees. This will reduce their resentment to directives, induced reform, communication failures and give them sense of belonging while at the long-run promoting operational efficiency and that in order to ensure that organizational structure contributes maximally to job performance, workers should be trained in order to enable them effectively incorporate its tenets when developing business unit strategies.

METHODOLOGY

3.1 Research Design

The study adopted a descriptive survey approach. Use of descriptive statistics was applied because of its capability to summarize large quantities of data using understood measures in form of graphical and numerical techniques (Burns, 2000). Descriptive studies are said to be a type of survey design that can give specific or group characteristics for a sampled population (Kothari, 2006). It determines the frequency with which something occurs or its association or correlation with something else. It also minimizes bias and maximizes reliability of the evidence collected if designed within precise objectives and on relevant data. This research approach was chosen because of its relevance to this study, more particularly it could answer research questions in this study which described behavior/attitudes.

3.2 Area of study

The area of the study covered Anambra, state, Nigeria.

3.3 Sources of Data

The sources of data for this research were both primary data and secondary data.

3.3.1 Primary Data

They are first hand information specially collected for the study. They are usually collected from the field under the control and supervision of an investigator or researcher. The study adopted the use of structured questionnaire to elicit relevant information from the respondent.

3.3.1.1 Tools for Collecting Primary Data

Primary data for this research were collected mainly by means of questionnaire, interviews and observation methods. For this study, the main tool used in collecting primary data was a questionnaire.

(a) Questionnaire

For this study, the questionnaire which consists of mainly closed questions was divided into two major parts; section A and section B. Section A is demographic in nature, and consists of the personal data of the respondents, while section B is made up of the general questions related to the research topic.

3.3.2 Secondary Data

The secondary data for the study were generated through data from Journals, strategic periodicals, textbooks obtained from libraries, and mainly the internet.

3.4 Population of the Study

The target population of this study was limited to employees working at the selected **Pharmaceuticals** firms within Anambra State, Nigeria. The research population for this study includes all the employees working in these selected organizations. This is depicted below.

List of Selected Pharmaceutical Firms in Anambra state, Nigeria.

S/no	Pharmaceuticals firms	Address	Population
1	Paxs Pharmacy	92, Awka Road, Onitsha, 24/48 Awka Rd	238
2	Kingsize Pharmaceutical Company Limited	Km 15, Old Enugu Road, Ogidi, Anambra state	123
3	Alben Healthcare Industries Limited	Km 15, Old Onitsha Awka Road	82
4	Chazmax Pharmaceutical Industries Limited	Odume Layout; Off KM 2; Nkpor/Obosi Road, Obosi, Anambra state	241
5	New Divine Favour Pharma Industries Limited	New Divine Street ,Adegbe Layout, Nkpor, Anambra State	76
6	Nature & Nurture Industries Limited	No 5 Oformata Lane, IyiowaOdekpe, Ogbaru, Anambra State,	211
7	Kingsize Pharmaceuticals Limited	KM 15, Old Enugu Express Way, Ogidi, Anambra State	84
8	Gauze Pharmaceuticals & Laboratories Nigeria Limited	Enu-Ifite Village, Awka South, Anambra State	220

9	Gabson Arahifediegwu & Sons Herbs Ind. Nig.	43, Atani Road, Ogbaru, Anambra State, Nigeria.	121
10	Rico Pharmaceutical Industries Limited	26 Nawfia Street, Omagba Phase II, Onitsha, Anambra State	88
12	Royal Sunny Chemist and Lab	Omagba Phase I, Enugu-Onitsha Express Way, Nkpor, Anambra State, Nigeria.	141
14	Seebest Pharm. Chemists Limited	Km 3, Nkpor-Umuoji Road, Nkpor, Anambra State	156
16	Juhel Nigeria Pharmaceuticals Ltd	Enugu Onitsha Expressway Awka, Awka South, Anambra State.	79
17	Emzor Pharmaceuticals Ltd	5 Niger Bridge Road Off Industrial Layout Onitsha	250
18	Neimeth International Pharmaceuticals	104 Awka Road, Onitsha	110
	Total		**2220**

Source: Human Resources Department, 2022

3.5 Determination of Sample Size

Cooper and Schindler (2003), state that the size of a sample should be a function of the variation in the population parameter under the study and the estimate precision needed by the researcher. The total population comprises 2220 employees of the eighteen (18) Pharmaceutical firms within Anambra State. The statistical formula devised by Borg and Gall (1973) was employed to determine the sample size. The formula state thus:

$n = (Zx)^2 eN$

Where n = Sample size

N = Population Figure

e = Margin error in this case = 0.05

Z = Confidence level and for 0.05 it is 1.964

N.B. Target population of pharmaceutical firms is 2220

Substituting the population variables of this study into the formula above, the sample size was computed as follows:

$n = (1.964)^2$ 0.05 x 2220

n = 428.15

Therefore, n = 428

Accordingly, pharmaceutical firms sample allocations were proportionately estimated as follows:

$$n_i = \frac{nh_i}{N} \times n$$

Where:

n_i = The sample estimated for one Pharmaceutical firm

nh_i = Population of one Pharmaceutical firm

N = The entire population of interest

n = Overall sample size for the study

Hence, with the above formula meant for estimating proportionate sample, the following figures were arrived at for the pharmaceutical firms in the study:

Paxs Pharmacy = 238 X 428÷ 2220 = 46

Kingsize Pharmaceutical Company Limited = 123 X 428÷ 2220 = 24

Alben Healthcare Industries Limited = 82 X 428÷ 2220 = 16

Chazmax Pharmaceutical Industries Limited = 241 X 428÷ 2220 = 46

New Divine Favour Pharma. Industries Limited = 76 X 428÷ 2220 = 15

Nature & Nurture Industries Limited = 211 X 428÷ 2220 = 41

Kingsize Pharmaceutical Limited = 84 X 428÷ 2220 = 16

Gauze Pharm. & Lab. & Nig. Limited = 220 X 428÷ 2220 = 42

Gabson Arahifediegwu & Sons Herbs Ind. Nig. = 121 X 428÷ 2220 = 23

Roya Sunny Chemist & Laboratory. = 141 X 428÷ 2220 = 17

Seebest Pharmaceutical Chemists limited = 156 X 428÷ 2220 = 30

Juhel Nigeria Pharmaceutical Limited = 250 X 428÷ 2220 = 15

Emzor Pharmaceutical Limited = 110 X 428÷ 2220 = 48

Neithmeth International Pharmaceuticals =110 X 428÷ 2220 = 21

Total **428**

3.6 Validity of Research Instrument

For the purpose of this research, the face and content validity approach was adopted. To determine the face validity of the instrument, initial copies of the instrument with purposes, research questions and hypotheses were given to two (2) experts in the Department of Business Administration, Chukwuemeka Odumegwu Ojukwu University, Igbariam Campus. They were specifically requested to assess the adequacy of the items in getting the required information, the quality of its language and the logicality of its arrangement. After validation, some items were removed, some restructured and new ones provided by the experts. Thus, their criticisms were strictly adhered to by the researcher in the final production of the instrument

3.7 Reliability of Instrument

Test re-test method was carried out to achieve reliability. This was done by administering 20 copies of the questionnaire to 20 respondents. Thereafter, the responses were collated and recorded. After two weeks the researchers administered 20 copies of the questionnaire to 20 respondents and achieved the same result. It was observed that the degree of correlation and consistency was high. The Cronbach Alpha was used to determine the reliability of the instrument by using Statistical Package for Social Sciences (SPSS) version 25.0. The Cronbach Alpha value respectively for related organizational structural on organizational performance are shown in appendix IV. According to the rule of thumb about Cronbach Alpha coefficient size, the higher the Cronbach Alpha, the higher the reliability coefficient. Based on the result, the independent variables: Formalization (FO), Hierarchical Layer (HL), Departmentalization (DE), Span of Control (SC) and Chain of Command (CC) were considered range of 0.874, 0.808, 0.736, 0.740, 0.739 and 0.823. Therefore, it was concluded that all the five independent variables are reliable because they are within the Cronbachs Alpha acceptable threshold.

3.8 Method of Data Analysis

Data generated through questionnaire were analyzed using frequency tables and percentages, while the hypotheses formulated were tested using ordinary least square regression technique. The hypotheses were tested at 0.05 level of significance. Ordinary Least Square (OLS) regression technique is a statistical technique that is use to relate two or more variables**.** In this study, the OLS was used in order to establish the causal relationships between dependent and independent variables.

Ordinary least square multiple regression

Ataghar (2013) Ordinary Least Square multiple regression model was used to determine the effects organizational structure on the performance of pharmaceutical firms in Anambra state, Nigeria.

The OLS multiple regression is specified as:

$Y = \alpha + \Sigma\beta X + e$
Where,
Y = Organizational performance
α = Intercept of equation
Σ = Summation sign
β = coefficients of the explanatory variables
X = the vector of explanatory variables in the model
e = Error term

3.9 Model Specification

Organizational Performance = Y (FO, HL, DE, SC, CC) - - (1)

Specifying equation (1) in an econometric form, we have:

$ORGP = Y + X_1FO + X_2HL, + X_3DE + X_4SC \text{ and } X_5CC + \mu_t$ - - (2)

Where: The regression model is represented as:

$Y = \alpha + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \beta_5X_5 + \beta_nX_n + ẹ$

Where:

Y = Organizational Performance (ORGP)

α = Constant Term

β= Beta coefficients

X_1= Nature Formalization (FO)

X_2= Hierarchical Layer (HL)

X_3= Departmentalization (DE)

X_4= Span of Control (SC)

X_5= Chain of Command (CC)

ẹ = Error Term

3. 10 Appriori Expectation

To achieve the objectives of the research proposal, the variables for performance of pharmaceutical firms is expressed on an Appriori expectation of $a_1 > 0$, $a_2 > 0$, $a_3 > 0$, $a_4 > 0$, and $a_5 > 0$. This simply implies that all independent variables (NF, HL, DPT, SC, CC) have positive impact on level of performance

3.11 Decision rule

- If $t_{cal} < t_{tab}$ accept the Null hypothesis (Ho) and it is not significant. If the $t_{cal} > t_{tab}$ we reject the Null hypothesis and accept the Alternate hypothesis, which means the variables are significant to performance of pharmaceutical firms.
- If the Probability > 0.05, accept the Null hypothesis (Ho), if the probability < 0.05 accept the alternate hypothesis H_1. This is used when electronic process of data analysis is used such as SPSS (Statistical Package for the Social Sciences) Version 25.0.

DATA PRESENTATION AND ANALYSIS

The data generated in this study were presented and analyzed in three main sections namely, demographic data of the respondents, answer to the research questions and test of hypotheses. In doing the analysis, frequency tables and simple summary statistics were used to analyze the demographic characteristics of the respondents and the research questions which were structured to take the format of the Likert scale Pearson Correlation and Ordinary Least Squares (OLS), multiple regression analysis were used to test and verify the various null hypotheses formulated to guide the objectives of the study and strengthen the analysis.

4.1Test of Hypotheses

Hypothesis is a tentative answer to the problem of the research being investigated and it is also an answer which has no evidence supporting it until full investigation is carried out. In the light of this, the hypotheses formulated to guide the objectives of this study and strengthen the analysis. The tests were conducted to verify the claims of the null hypotheses so as to be properly guided in taking decisions concerning the results of the hypotheses.

Table 4.1: Estimation of Correlation Matrix

Correlation Matrix

Variables		PMF	REL	HL	DPT	SC	CC
Performance of pharmaceutical firms	Pearson Correlation	1	.821**	.711**	.	456**	.397*
	Sig. (2-tailed)		.000	.000	.618*	.000	.003
	N	1021	1021	1021	*	1021	1021
					.000		
					1021		
Nature of Formalization	Pearson Correlation	.821**	.501**	316*	.501**	316*	.592**
	Sig. (2-tailed)	.000	.000	.007	.000	.007	.000
	N	1021	1021	1021	1021	1021	1021
Hierarchical Layer	Pearson Correlation	.711**	1	.525**	1	.525**	.607**
	Sig. (2-tailed)	.000		.000		.000	.000
	N	1021	1021	1021	1021	1021	1021
Departmentalization	Pearson Correlation	.618**	.505**	..753**	.505**	..753**	.729**
			.000	.000	.000	.000	.000

	Sig. (2-tailed)	.000	1021	1021	1021	1021	1021
	N	1021					
Span of Control	Pearson Correlation	.456**	.525**	1	.525**	1	.501**
	Sig. (2-tailed)	.000	.000		.000		.000
	N	1021	1021	1021	1021	1021	1021
Chain of Command	Pearson Correlation	.397**	.607**	.501**	.607**	.501**	1
	Sig. (2-tailed)	.003	.000	.000	.000	.000	
	N	1021	1021	1021	1021	1021	1021

** Correlation is significant at 0.05 level (2-tailed).
* Correlation is significant at 0.01 level (2-tailed).

Table 4.1.1 shows the correlation matrix of the variables in the study. The correlation matrix analysis shows that strong and positive relationship exists between and among the variables. Indeed, some of the relationships were quite high but not to the extent that they cannot permit further analysis such as regression analysis.

The table above shows the extent of association between the dependent and independent variables used in the study. Nature of formalization recorded a correlation coefficient value of -.821 with performance of pharmaceutical firms' activities which is statistically significant at 5% level of significance. This indicates that nature of formalization has very strong positive relationship with Performance of pharmaceutical firms in Anambra State, Nigeria. Also, hierarchical layer recorded a correlation coefficient of .711 with Performance of pharmaceutical firms with a probability value of .000 which is statistically significant at 5% level. This implies that hierarchical layer has a strong positive relationship with Performance of pharmaceutical firms in Anambra State.

Furthermore, departmentalization, recorded a correlation coefficient value of .618 with a probability value of .000 which is statistically significant at 5% level. This indicates that departmentalization, has a strong positive relationship with Performance of pharmaceutical firms in Anambra State. Also, span of control recorded a correlation coefficient value of .456 with a probability value of .000 which is statistically significant at 5% level. This implies that span of control has a very strong positive relationship with Performance of pharmaceutical firms in Anambra State.

Finally, Chain of command recorded a correlation coefficient value of .397 a probability value of .003 which is statistically significant at 5% level. This implies that chain of command has a very strong positive relationship with Performance of pharmaceutical firms in Anambra State. The implication is that the variables did not contain or throw up multicollinearity condition or orthogonal. Consequently, we carried out multiple regression analysis on the variables and the results are presented below

Table 4.1.2: Summary of the Analysis of Variance (ANOVA) for the Model

Source of Variation	Df	Sum of Squares	Mean Square	F-ratio	Sig.
Regression	4	279.281	69.820	18.624	.000[a]
Residual	145	543.569	3.749		
Total	149	822.850			

a. Predictor: (constant), NF, HL, DPT, SC, CC.
b. Dependent variable: Performance of pharmaceutical firms

Table 4.1.2 presents the summary of analysis of variance (ANOVA) for the regression model. The table shows that F-Statistic is 18.624 and the probability level is .000 which is less than P $\leq$ 0.05. The implication is that overall; regression model is statistically significant, valid and fit for prediction.

Table 4.1.3: Summary of Regression Results

Model	R	R.Square	Adjusted R-Square	Standard Error of the Estimate
I	0.857	0.741	0.709	0.69527

a. Predictor: (constant), NF, HL, DPT, SC, CC.

As could be seen from Table 4.1.3, regression coefficient represented by 'R' has the value of 0.857 and it means that 85.7 percent relationship exists between the dependent and the independent variables. Similarly, the coefficient of determination represented by 'R^2'has the value of 0.741 and it means that 74.1 percent of the variation in the dependent variable can be explained by the independent variables in the model. The R^2 being the explanatory power of the model shows that the changes in Performance of pharmaceutical firms can be accounted for by the nature of formalization, hierarchical layer, departmentalization, span of control and chain of command.

.**Table 4.1.4: Coefficients of the Predictor Variables, t-values and the Significant Level**

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1(Constant)	-.187	.207	-	-.741	.454
Nature of Formalization	.717	.053	.711	11.203	.000
Hierarchical Layer	.189	.047	.693	4.526	.000
Departmentalization	.178	.059	.754	3.148	.010
Span of Control	.563	.078	.688	2.873	.000
Chain of Command	.513	.065	.525	3.715	.001

a. Dependent Variable: Performance of pharmaceutical firms

Table 4.1.4 presents the coefficients of the respective variables as well as the t-values and the probability levels. As could be seen from the table also, many of the predictors have high coefficients. For instance, nature of formalization, hierarchical layer, departmentalization, span of control and chain of command are quite high in predicting the dependent variable, performance of pharmaceutical firms. It is also worthy of note that all the expected signs the a priori, obeyed the theoretical expectations.

4.2 Re-Statement of the Study Hypotheses

The formulated hypotheses were re-stated in this section of the analysis to ensure that the objectives as well as the research questions are well located in the hypotheses which were tested to establish that the answers to the research questions did not occur by chance but with statistical significance. All tests were conducted at 0.05 level of significance. That being the probability at which we were willing to risk type I error.

H_0: Nature of formalization has no significant positive effect on the performance of pharmaceutical firms in Anambra State.

H_{01}: Nature of formalization has a significant positive effect on the performance of pharmaceutical firms in Anambra State.

H_0: Hierarchical layer has no significant positive effect on the performance of pharmaceutical firms in Anambra State.

H_{02}: Hierarchical layer has a significant positive effect on the performance of pharmaceutical firms in Anambra State.

H_0: Departmentalization has no significant positive effect on the performance of pharmaceutical firms in Anambra State.

H_{03}: Departmentalization has a significant positive effect on the performance of pharmaceutical firms in Anambra State.

H_0: Span of control has no significant positive effect on the performance of pharmaceutical firms in Anambra state.

H_{04}: Span of control has a significant positive effect on the performance of pharmaceutical firms in Anambra state.

H_0: Chain of command has no significant positive effect on the performance of pharmaceutical firm in Anambra state.

H_{05}: Chain of command has a significant positive effect on the performance of pharmaceutical firm in Anambra state.

The estimated functional equation (model) can be written as follows:

Y = -187+0.711FM+0.693HL + 0.754 DP + 0.688SC + 0.525CC

(-.741) (11.203) (4.526) (3.148) (2.873) (3.715)

(0.454) (0.000) (0.000) (0.010) (0.000) (0.001)

4.3 Interpretation of Regression Results

In interpreting the regression results, we considered the value of the coefficients (X), t-statistic and the significance level. From Table 4.15, the values of the regression coefficients, shows that relative contributions in predicting the dependent variable which in this case is performance of pharmaceutical firms. The decision rule about the significance of the coefficient or otherwise was based on the interpretation of the results.

Hypothesis One

H_0: Nature of formalization has no significant positive effect on the performance of pharmaceutical firms in Anambra State.

H_{01}: Nature of formalization has a significant positive effect on the performance of pharmaceutical firms in Anambra State.

Starting with the coefficient of formalization which is represented by X_1, the value is .711 which means that when formalization is increased by one unit, performance of pharmaceutical firms would increase by 7.1 percent if other variables in the functional equation are held constant. The t-value of 11.203 and the probability level of .000 corresponding to the coefficient show that it is significant. This is because the probability level 0.000 is less than 0.05 level of significance set for the study.

Decision Rule I

At 0.05 level of significance and t-value (11.203), the coefficient is positive and significant. Consequently, we reject the null hypothesis and accept the alternative which suggests that formalization has a significant positive effect on the performance of pharmaceutical firms in Anambra State.

Hypothesis Two

H_{02}: Hierarchical layer has no significant positive effect on the performance of pharmaceutical firms in Anambra State.

H_0: Hierarchical layer has a significant positive effect on the performance of pharmaceutical firms in Anambra State.

In a related development, the coefficient of hierarchical layer represented by X_2 in the model has the value of .693. This means that when hierarchical layer is increased by one unit, performance of pharmaceutical firms will increase by 6.9 percent when other variables in the functional equation (model) are held constant. The t-value of 4.526 and the probability level of .000 corresponding to the coefficient show that the coefficient is significant because .000 is less than 0.05 level of significance set for the study.

Decision Rule II

At 0.05 level of significance and t-value of 4.526, the coefficient is positive and significant. Given the weight of evidence against the null hypothesis, it was rejected while the alternative which suggests that Hierarchical layer has a significant positive effect on the performance of pharmaceutical firms in Anambra State, Nigeria was accepted

Hypothesis Three

H_0: Departmentalization has no significant positive effect on the performance of pharmaceutical firms in Anambra State.

H_{01}: Departmentalization has a significant positive effect on the performance of pharmaceutical firms in Anambra State.

In a similar vein, the coefficient of departmentalization represented by X_3 in the model is .754 and it means that when departmentalization is increased by one unit, performance of pharmaceutical firms will increase by 7.5 percent if other factors in the functional equation (model) are not allowed to vary. The t-value of 3.148 and the probability level of 0.10 corresponding to the coefficient show that the coefficient is positive and significant because .010 is less than the significance level 0.05 set for the study

Decision Rule III

At 0.05 level of significance and t-value of 3.148, the coefficient is significant and positive. Consequently, the null hypothesis was rejected while the alternative which suggests Departmentalization has a significant positive effect on the performance of pharmaceutical firms in Anambra State, Nigerian was accepted.

Hypothesis Four

H_{04}: Span of control has a significant positive effect on the performance of pharmaceutical firms in Anambra state.

H_0: Span of control has no significant positive effect on the performance of pharmaceutical firm in Anambra.

For span of control, the coefficient is represented by X_4 in the model and it has the value of .754 which means that when span of control is increased by one unit, performance of pharmaceutical

firm will increase by 7.5 percent if other variables in the model are not allowed to vary. The t-value of 2.873 and the probability level .000 corresponding to the coefficient shows that the coefficient is positive and significant because .000 is less than 0.05 level of significance set for the study.

Decision Rule IV

At 0.05 level of significance and t-value of 2.873, the coefficient is positive and significant. Consequently, we rejected the null hypothesis given the weight of evidence against it while the alternative hypothesis which suggests that span of control has no significant positive effect on the performance of pharmaceutical firm in Anambra was accepted.

Hypothesis Five

H_0: Chain of command has no significant positive effect on the performance of pharmaceutical firm in Anambra.

H_{05}: Chain of command has a significant positive effect on the performance of pharmaceutical firm in Anambra.

Finally, the chain of command represented by X_5 in the model, has a value of .525 and this means that when the chain of command is increased by one unit, performance of pharmaceutical firm will increase by 5.3 percent if other variables are held constant. The t-value of 3.715 and the significance level of .001 corresponding to the coefficient, shows that the coefficient is significant because .001 is less than 0.05 level of significance set for the study.

Decision Rule V

At 0.05 level of significance and t-value of 3.715, the coefficient is positive and significant. Consequently, given the weight of evidence against the null hypothesis, it was rejected while the alternative hypothesis which suggests that chain of command has a significant positive effect on the performance of pharmaceutical firm in Anambra was accepted.

5.0 CONCLUSION AND RECOMMENDATIONS

5.1 Conclusion

This study examined the effect of organizational structure on the performance of pharmaceutical firms in Anambra state, Nigeria as the study area. The study examined the effect of Nature of formalization; hierarchical layer; departmentalization; span of control and chain of command on the performance of pharmaceutical firms in Anambra State, Nigerian.

The results of the regression analysis showed that regression model was statistically significant. Nature of formalization, hierarchical layer, departmentalization, span of control and chain of command has a significant positive effect on the performance of pharmaceutical firms in Anambra. Therefore, the study concludes that organizational structure has a significant positive effect on the performance of pharmaceutical firms in Anambra state, Nigeria. The implication of these findings is that organizational structure dimensions will have a great influence on performance of pharmaceutical firms. Therefore, adequate knowledge and implementation of well thought out organizational structure dimensions will not only make pharmaceutical firms to be more competitive; but also enhance its performance in terms of higher profitability through increased productivity.

5.2 Recommendations

Based on the results of the analysis of data from this study and the conclusion made above, the following recommendations/policy dialogue was made:

1. This study recommends that management should critically analyze the effectiveness and efficiency of the nature of formalization as an important predictor of performance. Management should use formalization effectively as a tool to improve financial viability and structural expansion in pharmaceutical firms in Nigeria
2. Proper hierarchical layer structures should be put in place in order to achieve set goals and objectives; and organizations should redesign their structures of hierarchical layer in order to attain the expected performance
3. Organizations should adopt departmentalization structure and reduce formalization in the work places that managers of organizations should adopt more departmentalization forms of structures as means of improving the decision making process. Managers should combine both task routine and variety in organizing employees for carrying out task in order to reap the advantages of both systems of task assignment; and that employees should be empowered to be more innovative in carrying out tasks. This will enhance organizational performance.
4. Management should design appropriate chain of command from upper organizational levels to lower levels to improve financial and structural expansion in pharmaceutical firms in Nigeria
5. Pharmaceutical firms should give more serious attention in designing an appropriate chain of command structure that must match all units and component parts of their organizations to facilitate employee performance.

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