

# Firm Attributes and Value of Pension Fund Administrators in Nigeria

Adekoya Oludare Michael\*, Nwaobia Appolos Nwabuisi, Siyanbola Tunji Trimisiu

Department of Accounting, School of Management Sciences, Babcock University, Ilisan-Remo, Nigeria

## Email address:

adekoya4365@pg.babcock.edu.ng (A. O. Michael), nwaobiaa@babcock.edu.ng (N. A. Nwabuisi),

siyanbolat@babcock.edu.ng (S. T. Trimisiu)

\*Corresponding author

## To cite this article:

Adekoya Oludare Michael, Nwaobia Appolos Nwabuisi, Siyanbola Tunji Trimisiu. Firm Attributes and Value of Pension Fund Administrators in Nigeria. *Journal of Finance and Accounting*. Vol. 10, No. 2, 2022, pp. 96-106. doi: 10.11648/j.jfa.20221002.12

**Received:** February 21, 2022; **Accepted:** March 12, 2022; **Published:** March 18, 2022

---

**Abstract:** Value creation is a key objective of every firm and this is applicable to Pension Fund Administrators (PFAs) who seek to remain competitive and achieve superior corporate performance by taking advantage of certain firm attributes. Studies have shown that value of PFAs can impact the financial health of a significant number of individuals during their retirement years if their Retirement Saving Account (RSA) funds are well managed. This objective is scarcely achieved following the increasing challenge faced by the pension fund industry in the dimensions of dearth of investment, poor investment decision by PFAs, restrictions and investment limits by the regulator and the hunt for yield for its RSA contributors amid an environment of low interest rates. Studies that examined the combined effect of firm attributes of firm age, size, contribution density, number of contributors, board size, board quality and branch network on the value of PFAs are lean. This study investigated the effect of firm attributes on Value of Pension Fund Administrators (net asset value per unit) in Nigeria. The study employed *ex-post facto* research design. Purposive sampling technique was used to select a sample of fifteen (15) from 22 pension fund administrators which have been in existence for the past ten years (2011-2020). Data for this study were extracted from the published annual reports and accounts of the sampled companies which were validated by certification of external auditors and National Pension Commission (PenCom). Data were analysed using descriptive and inferential (multiple regression) statistics at  $\alpha = 0.05$  level of significance. The study found that firm attributes jointly exerted significant impact on net asset value per unit of pension fund administrators ( $Adj.R^2 = 0.9298$ ,  $F(6, 143) = 254.96$ ,  $p < 0.05$ ). The study concluded that firm attributes enhanced the value of pension fund administrators in Nigeria. It was recommended that pension fund managers should make stakeholders' interest (contributors and shareholders) a priority and use the selected firm attributes to their advantage to drive performance and create value.

**Keywords:** Assets Under Management, Firm Attributes, Firm Value, Net Asset Value, Pension Fund, Pension Fund Administrators, Value of Pension Fund Administrators

---

## 1. Introduction

The main functions of the PFA are to open Retirement Savings Account (RSA) for employees; invest and manage pension fund assets; payment of retirement benefits and accounting for all transactions relating to the pension funds under their management (PenCom, 2020). "Financial reports of pension fund administrators provide valuable financial performance information to the users of the financial statements, as well as employees and retirees of that

company (Brady, 2009). The value of pension fund administrators can be a significant element in determining net income and is also important in evaluating their financial risk. The value of pension fund administrators can impact the financial health of a significant number of individuals during their retirement years if their RSA funds contributed during their active service years are well managed [1]."

The prosperity level of stakeholders is reflected in firms' value, this is because firms' value has become the main concern of all stakeholders; "and this applies to Retirement Saving Account (RSA) contributors [2]. The main goal of a

firm is to increase the stakeholder's welfare by increasing the value of a firm [3]. Maximizing firm value is essential for a company because it means increasing the prosperity of stakeholders as well, which becomes the company's main goal. However, a good firm value is able to attract other parties' interests to join a company. This is so because every investor or contributor wants to invest or put their fund in a company that will bring back high level of return on their investment. In other words, value or performance is an indicator of corporate success. Hence, any corporate entity experiencing a rise in the market price of its stocks is considered a good company by the investors."

Evaluation of the value of Pension Fund Administrators (PFAs) cannot be carried out only by considering the risk and return component in isolation. "There are certain pension fund administrators' characteristics which indicate good corporate value or financial performance [4]. There are various characteristics which are considered to be the drivers of value. Firm attributes are firm characteristics or specific features that distinguish one company from the other. Firm characteristics can be seen as the wide varieties of information disclosed in the financial statement of business entities that serve as the predictors of the firm quality of accounting information and performance [2]. Firm attributes are numerous; it could be in terms of the size, profitability, leverage, industry type, geographical location, tangibility, and nature of business, corporate governance mechanisms and any other feature that distinguishes one company from the other [5]. These attributes include but not limited to fund size (fund under management), Number of Retirement Saving Account (RSA) by PFAs, PFA's age, PFA expense, Number of branches, Board size, Board Quality, PFA rating, PFA Idle Fund, PFA Paid-up Capital, fund type/family."

The "relationship between firm attributes and value of pension fund administrators is that of cause and effect. From the foregoing therefore, this study shall investigate Firm Age, Firm Size, Contribution Density (Contributed Fund), Number of Contributors (RSA Holders), Board Size (Number of Directors on Board), Board Quality (Number of Independent Directors) and Branch Network or Number of Branches as firm attributes, and how they impact the value of pension fund administrators (Net Asset Value per unit)."

The increasing challenge facing the pension fund industry are dearth of investment, poor investment decision by PFAs, restrictions and investment limits by the Regulator and the hunt for yield for its pensioners amid an environment of low interest rates [6]. Firms seeking to remain competitive and achieve superior corporate value or firm performance have to anticipate what their clients want and at the same time determine if they are satisfied with the firm services. "This study looked at the nexus between each of the firm attributes such as the number of firm age, firm size, contribution density, number of contributors, board size, board quality and branch network on the value or performance of pension fund administrators measured by net asset value per unit."

Extant studies [4, 7-16] focused "on the effect of corporate governance and few attributes of PFAs on their financial

performance, leaving out other key firm attributes largely unexplored and their effects on the value of PFAs. This study therefore will address these gaps in literature with regards to firm attributes and value of pension fund administrators with specific focus on net assets value per unit of selected Pension Fund Administrators in Nigeria."

The objective of this study, therefore, is to examine the effect of firm attributes on the value of Pension Fund Administrators in Nigeria.

## 2. Literature Review

### 2.1. Conceptual Review

#### *Value of Pension Fund Administrators*

Value of Pension Fund Administrators is an accounting measure reflecting the market value of a PFA business which can fluctuate. It is the increase or decrease in operating performance; or put differently, it is increase or decrease in the present value of future investment opportunities. Net Asset Value (NAV) is used in this study as proxies to measure value of pension fund administrator. Draft, R. L defined organizational value as the measure of change in the financial state of an organization, or the financial outcomes that results from management decisions and the execution of those decisions by members of the organization [17]. With the increasing number of research papers referencing firm value, there is a need to have basic understanding of definition of value and its various measures [17]. This study therefore used Net Asset Value Per Unit as proxy for value of PFA. The study shall use the Net Assets Value Per Unit which is the higher of Fund II or average of all the active funds (i.e Fund I, II & III).

#### *Attributes of Pension Fund Administrators*

##### *Firm Age*

Age of the firm refers to the length of time that a firm has existed, "usually expressed in years and considered as important determinant of performance. Ajibade, A. T., *et al* opined that the Age of the pension fund is synonymous with the age of the Pension Fund Administrators managing the fund [4]. [15] In his work established that the older a Pension Fund Administrator is, the more financially sustainable it is expected to be. According to [18], length of time in operation may be associated with learning curve. Older firms most probably have learned much from their experiences than newcomers. [19] agreed with this and defined firm age as the experience of an organization in the market which is computed as number of years the firm has been in operations in that particular industry. [20] noted that length of time in operation was significantly linked to business success. Firm age is the length of life of a company since it was established until the period of time as long as the company still exists [12]. They opined that a long-established company would have more experience in carrying out business activities in its industrial sector and it is better known to the broader community rather than newcomers. In this study, the natural logarithm of the number of years from the date the PFA was issued license was considered as firm age."

### *Firm Size*

Tijjani, M. S. noted that one of the factors affecting the level of outreach of a pension fund is its size [15]. The size of pension fund administrator is measured by the value of its assets [21-26]). Firm size can classify a company as a big or small company based on the total assets owned or the total sales created by the company. [19] found out that large firms have more competitive advantage over small firms. They tend to have bigger market share therefore making more profit and creating bigger value for the shareholders. They can make use of chances that require large capital since they have larger resources. This study used natural logarithm of total assets to measure firm size.

### *Contribution Density*

Contribution density refers to the total contribution by RSA holders or contributors to a pension scheme. It is the total contribution of the contributors to the pension fund. [27, 4, 28] in their respective study used contribution density as metric for measuring firm performance. [27] argued that the weight of contributions collected by pension funds from retirement savings account holders is a pivotal predictor of their corporate worth. This is corroborated by [13] “who opined that density of contributions received by the pension funds from its contributors is a very important determinant of its financial performance. Oluoch [28] also observed that density of contributions is an essential factor that affects pension benefits. [4] posited that large contributions provide the PFA with Economies of scale. This study used natural logarithm of total pension contribution to measure contribution density.”

### *Number of RSA Contributors*

This refers to the number of active RSA holders who contributes monthly into the retirement savings accounts as required under the Pensions Reform Act 2004 (as amended). RSA contributors are registered contributors to pension scheme. This definition is corroborated by ([13] & [26]). [26] who adopted Fund size as a determinant of firm performance, measured fund size as the number of registered contributors to respective pension schemes [26]. [13] also used number of members registered in pension scheme (Total number of memberships in a year in pension scheme) as one of the main firm factors affecting the performance of pension fund in Kenya. This study looked at the yearly number of RSA active contributors as one of the determinants of PFA performance in Nigeria.

### *Board Size*

This refers to the total number of directors on the board of a PFA. Board size is measured by the number of board of directors [15]. Board size can be defined as the total numbers of directors on a board [29]. [30, 15] Defined board size as the number of directors sitting on the board of a firm in a particular financial year. The board size comprises all individuals that constitute the board of directors regardless of their characteristics [30]. This study adopted the number of directors in each PFA board as one of the determinants of firm performance.

### *Board Quality*

Board quality in this study refers to Board independence. This is independence of the members of the board, measured by the number or through the percentage of non-executive and/or independent non-executive directors that compose it, and its impact on business results. Nor, *et al.* defined Board independence as the proportion of independent non-executive director of the board and argued that Board independence and managerial ownership prevent inefficiency pertaining to investment decision making [31]. They measured Board independence as the percentage of independent outside directors (independent non-executive directors) to total number of directors. [32-41] supported the position above. This study measured Board Independence as the proportion of non-executive directors and independent non-executive directors to the total Board size.

### *Branch Network*

These are offices of an organization which are located in different places. It is the PFA's physical distribution network across a geographical area based on its business strategy to drive business and performance. A successful branch network strategy drives improved business performance, whilst optimizing cost and investment. According to Itai, *et al* [42] “branches are the initial contact point between most financial institutions and their customers. They listed the benefits of branch network to include increased convenience and an improved experience; reducing customer churn rates and increasing their motivation to buy more from the service provider or supplier. The study further posited that given the right circumstances branches can take the lead in identifying prospective customers, determining their needs and matching products/services to these needs. This study measured branch network with the number of branches, head-office, head-office annex and service centers owned by each of the PFAs.”

## **2.2. Theory**

### *Stakeholders Theory*

The stakeholder theory was developed by Edward Freeman in 1984 as a managerial instrument and has since evolved into a theory of the firm with high explanatory potential [43, 44]. “Stakeholder theory holds that a company's stakeholders include just about anyone affected by the company and its workings. They include shareholders and other financiers of the business, suppliers and creditors, the workers, consumers and the community [4]. The theory looks beyond the normal shareholder-manager relationship [45]. The main idea of the stakeholder theory is that the organization should be seen as a collection of stakeholders with the purpose of managing their needs and interests. However, in the case of a Pension Fund Administrator, the major stakeholders are the pensioners and contributors to the retirement savings accounts [4]. This theory is relevant to this study in the sense that it accommodates the interest of other affected parties. Hence, the performance of the PFAs will impact on the decisions of stakeholders who are the pensioners, contributors and prospective contributors to the retirement savings account who would rely on the financial report to take decisions about the PFA.”

### *Theory of Immunization*

This theory was first examined by an English Actuary for a life insurance company, named Frank Mitchell Redington (Redington, 1952). “He described immunization as the process of equating the mean term of the assets to the mean term of the liabilities. This is popularly known as classical immunization and the notion has been widely used by many insurance companies and fund managers in USA, United Kingdom, and worldwide [46]. Redington’s theory of immunization was generalized in the 1970’s and 1980’s by several authors to handle more complicated situations [47, 48]. This theory proposes that funds should be *immunized* against loss. This simply means backing the liabilities in such a way that the fund will be protected from the occurrence of any loss. This theory is relevant to this study in the sense that it explains the role of the fund managers (PFAs) in protecting funds under their management from the occurrence of any loss and by so doing increase the RSA holders or pension contributors’ confidence in the ability to protect their future wealth.”

### **2.3. Empirical Review**

Ajibade, *et al* looked at the effect of selected pension fund characteristics on the financial performance of pension funds in Nigeria and represented firm characteristics with age of fund, expenditure of fund, density of contributions and idle contributions of Pension Fund Administrators managing the pension fund [4]. “The study used secondary data obtained from 11 pension fund Administrators and the National Pension Commission for a period of seven years 2010 – 2016. This study made use of panel data and used multiple regression analysis to analyze the data with the help of the Eviews9 statistical package. The model proved to be statistically significant with a combined probability of F-statistics of 0.0000 which is below the adopted level of significance of 5%. The study concluded that firm characteristics jointly have a significant effect on financial performance measured by unit price.”

Tijjani [15] “carried out a study on the determinants of financial sustainability of Pension Fund Administrators in Nigeria. The research work was carried out in an attempt to determine factors that affect financial sustainability of Pension Fund Administrators in Nigeria. The study focused on seven (7) variables which were believed by the researcher to determine the financial sustainability of pension funds. The variables included Age, Size, Net income, contribution, GDP, Board members’ composition and Board size. After the analysis of data, the researcher revealed that five of the seven variables namely, age, size, net income and board size were found to have a positive relationship and therefore a significant impact on the financial sustainability of pension funds.”

In Kenya, [49] “conducted study on strategies to improve pension fund efficiency in Kenya. The findings from the study indicate that fund size is as a significant determinant of the financial efficiency of pension funds. Empirical results also established that those smaller funds are perceived to be

more financially efficient than bigger ones. It was however clear that the size of the pension fund did not have any significant influence on the operational efficiency of pension funds. It was also evident that the fund regulations influence how funds are governed and led. Adherence to the identified fund regulations were shown to improve fund governance and leadership.”

Also in Kenya, “[16] in their study sought to determine the effect of access to capital, firm size, retained earnings and leverage on the financial performance of Pension schemes in Kenya. The findings of the research revealed that access to capital, leverage, retained earnings and firm size are the main factors that determine financial performance of pension funds in Kenya.”

In a study of the performance of pension funds in Kenya, [28] demonstrated that the relationship between fund performance measured by Return on Assets and contribution density was frail and statistically immaterial contrary to hypothesis. As such, performance of pension funds is not reactive to the contributions of contributors. The researcher in a study of 29 registered pension schemes in Kenya found out that the contributions did not have an effect on the performance pension funds and concluded that contributions are not utilized for value creation undertakings and recommended that the contributions of pensioners be put into more prolific investments instead of just keeping the funds safely for retirees. A sample of 29 of the 1216 pension arrangements in Kenya would be too trivial to draw up a conclusion for the entire population. This is a fundamental drawback of this study. The contrary will probably occur where volume of contributions expected from account holders is not substantial to embark on meaningful asset investment [50]. The new contributions for the employee and employers according to the Pension Reform Act of 2014 are 8% and 10% respectively. Large contributions provide the PFA with Economies of scale.

Kigen, A. K [13] analyzed the effect of fund size on the financial performance of pension fund in Kenya. His research covered a period of 5 years (2011-2015). The study investigated the impact of fund size measured with six sub-variables of which number of members or contributors is one. The study particularly looked at the impact of number of members on the financial performance of pension funds. The study which was conducted using a descriptive survey design had a target population which comprised all the 1232 registered pension schemes in Kenya. “A sample size of 93 registered pension schemes was selected for the study through purposive sampling and the study found out that administration expenses, investment expenses, pension contribution and accumulated fund assets all have a significant effect on the financial performance of pension fund in Kenya. This was indicated by p-values of 0.04, 0.000, 0.000 and 0.019 respectively. Number of active members and Exit age was determined to have no significant effect on the financial performance of pension funds. This was indicated with p-values of 0.843 and 0.413 respectively. The study concludes that pension contribution, costs and accumulated

fund assets significantly affect the financial performance of pension funds. The study thus recommends the need to have more family size pension funds, the need for pension schemes to embrace more cost-effective measures and the need for development of new contribution models. The used of 93 out of 1232 registered pension schemes in Kenya might require the results to be embraced with caution.”

In the same vein, Ichingwa, B. I. et al [10] in their study on the effect of total contribution on financial performance of pension schemes in Kenya found out that total contribution has a positive and significant effect on financial performance of pension schemes. The target population for the study was all the registered occupational pension schemes in Kenya which according to the Retirement Benefits Authority report are 818 as at the end of year 2016. Random sampling method was applied to come up with the sample size of 261 registered occupational retirement benefits schemes. The study used secondary data which was analyzed using inferential and descriptive statistics. The study recommends that Pension Schemes in Kenya should invest more in systems to recruit more members or getting more RSA holders to increase the total contributions as it positively affects financial performance.

In Zimbabwe, Mhaka, S. [51] conducted an empirical study on the effects of the size of a pension fund on its investment performance (efficiency) in Zimbabwe from 2010 to 2013 post multicurrency era. The research was based on quantitative data such as portfolio returns of pension funds and their asset sizes. The research sample was 20 stand-alone pension funds and 9 fund administered pension funds using a cluster sample. Based on the data presented on Zimbabwean pension fund, the analysis demonstrated that there was no relationship between the density of contribution and its investment performance. Therefore, the study established that density of contribution alone does not determine the performance of a pension because a lot of factors come into play and that the markets are not efficient.

In Kenya, Onyango, D. A. [52] in the study on the relationship between Investments Strategies and Financial Performance of Pension Funds in Kenya researched on how investment strategies affect financial performance in Kenya pension funds. Pension funds are managed in diverse ways, with governance policies distinguished according to their board composition and size, how the trustees structure their investment decisions, what restrictions are placed on their investments and whether they have independent performance evaluations.

While Hartaska, V [21] finds that the size of a pension fund administrator did not significantly affect its financial sustainability, studies by [53] & [25] reported that the size of a pension fund administrator is associated with its financial sustainability. Furthermore, the size of pension fund administrator could also imply that large pension fund administrators have larger capital and therefore, can reach a relatively bigger number of clients than small pension fund. [54] supports this. In their study on outreach and profitability of pension fund administrator in Ghana, found that the size of

a pension fund administrator had significant positive impact on profitability.

Yassin, M. Z [55] in his work investigated the effects of board and firm characteristics on firm performance. Based on an agency theory perspective the study used a sample of 384 observations from the Egyptian Stock Market (EGX) from 2016-2018, the paper uses statistical analyses to identify the characteristics which affect the firm performance. The results of this study show that board size, CEO duality, firm size and financial leverage have a significant positive effect on firm performance. In contrast, the other variables; board independence, audit quality and firm industry, had an insignificant association with firm performance. [55] posited that large companies which have large boards of directors with low levels of leverage and CEO duality have better financial performance than other firms.

Efuntade, A. O. et al [9] in their study examined the impact of firm characteristics on the financial performance of quoted manufacturing firms in Nigeria. “Secondary Data were obtained from annual reports of five selected quoted manufacturing firms. Panel least square regression model was used to test the formulated hypothesis. Findings showed that all the independent variables jointly and strongly have impact on the financial performance of manufacturing firms in Nigeria measured by return on assets. It was concluded the explanatory variables (Firm Age, Firm Size, Sales Growth, Liquidity and Leverage) were significantly associated with the dependent variable (Return on Asset). The Study then recommends that, the managements of manufacturing companies should find ways to improve and acquire the optimal utilization of their assets, while making maximum use of their resources during the production processes and distribution of finished products as this would help them in improving their profits.”

Hirtle, B [56] observed that after controlling a variety of institution-specific and market-specific factors, financial Institutions with mid-sized branch networks – those containing 101 to 500 branches – had lower deposits per branch and roughly equal volumes per branch relative to banks with larger branch networks. Whatever differences in these branch-related performance measures, however, there is no systematic relationship between branch network size and overall firm performance. Thus, recent technological developments seem not to have altered the basic relationship between branch network size and performance. Overall, these findings are consistent with recent trends in branch activity suggesting that organizations with mid-sized branch networks may face pressure to increase branch network size.

In an empirical survey conducted in Nigeria by [57] on the contribution of the branches to banks performance. “The study used the whole banks in Nigeria during the period 1981 and 2013 using a pooled data analysis on ordinary least square (OLS). The variables used include the total number of banks branches in rural and urban area and those domiciled abroad regarded as foreign branches. It also considered the total number of banks at each period and year of study while the growth in Total Asset is proxied as the dependent

variable. Our findings showed that there is a positive relationship between the growths of the branches in the rural, urban and foreign centers which implies that there is need to open more branches if the banks want the Asset to grow. The study suggested that branching activities should be a major work and decision of the banks so as to bring more customers to the bank who will now use the various electronic platforms for service installed by the banks.”

In the same vein, [42] “in their study examined information technology service management and bank efficiency in Lagos State, Nigeria with the moderating role of branch network. The study employed cross sectional survey research design. The total population was 6,975,037 of bank customers. Krejcie and Morgan (research advisors table) 2006 was used to select 1,019 that were used for the study and stratified sampling technique was used. Structured survey questionnaire was adapted and validated. The Cronbach’s alpha coefficients for the constructs ranged between 0.705 and 0.873. The response rate was 97.84%. Data were treated, then analysed using descriptive and inferential statistics of multiple and hierarchical regression. Findings revealed that information technology service management significantly affect efficiency of banks in Lagos State, Nigeria ( $\text{Adj. } R^2 = 0.585$ ;  $F(5, 990) = 473.583$ ,  $p < 0.05$ ); branch network do not significantly moderate the effect of information technology resources on efficiency ( $\beta = 0.028$ ,  $t = 1.420$ ,  $\Delta R^2 = 0.001$ ,  $\Delta F = 2.017$ ,  $P > 0.05$ ). The study concluded that information technology service management have significant effects on banks efficiency in Lagos State, Nigeria. The study recommended that Nigerian banks should evolve appropriate business models that will enhance adoption of continued upscale of information technology resources and embrace digital space in order to achieve overall bank efficiency.”

Beverly, H [58] in his study on the effect of branch network on firm performance “provided that there appears to be little relationship between branch network size and overall firm efficiency. While several studies have considered the impact of the expansion of large, multi-market banking organizations into local markets, relatively little analysis has taken a direct look at the influence of increasing branch network using recent branching data. Despite technological and regulatory innovations that might have been expected to reduce banking institutions’ reliance on bricks-and-mortar branches to deliver financial services, the number of full-service bank and thrift branches has increased steadily in United States [58].”

Difficulties occur in generalizing from the previous research as observed from literature. First, most of the study were carried out outside Nigeria. Second, most of the studies available on value of pension fund administrators did not use Net Asset Value to measure value of PFA. Third, the studies focused on other independent variables such as firm size, firm age and so on as a determinant of value rather than all the firm attributes considered in this work. Fourth, a more recent perspective on the prevailing phenomenon in Nigeria is of essence since it can be generalized for other developing

nations. Different studies have used different methodologies to carry out their research, this therefore call for research to be done on developing economies like Nigeria.

Drawing from the above literature, this study hypothesizes that:

$H_0$ : Firm Attributes have no significant effect on Net Asset Value per unit of fund managed by pension fund administrators in Nigeria.

### 3. Methodology

The study adopted *ex-post facto* research design. “The population of the study comprised 22 pension fund administrators operating in Nigeria as at 31st December 2020. A non-probabilistic sampling technique of judgmental sampling was employed to select the sample companies that were adopted for this study. The sample units for this study were selected from the population based on the event criterion of companies that have been in existence for the period of study (2011-2020). A sample of fifteen (15) companies was adopted for the purpose of this study. Data used for this study were mainly secondary data which were obtained from the financial statements of sampled PFA companies and the annual reports of National Pension Commission (PenCom) for the period of 2011 to 2020. Data from these secondary sources were adjudged appropriate for this study because they are data already validated by external auditors and relevant regulatory agencies, and they are data used by the relevant agencies of government and non-government for economic decisions. The data were analyzed using descriptive and inferential statistics employing simple linear regression using Stata statistical package.”

#### 3.1. Description and Measurement of Variables

In this study, firm attribute which is the independent or explanatory variable was measured by Firm Age (FA), Firm Size (FS), Contribution Density (CD), Number of Contributors (NC), Board Size (BS), Board Quality (BQ) and Branch Network (BN) while value of pension fund administrator represented by Net Asset Value per unit was the explained or dependent variable.

$$Y = f(X)$$

Y = Explained or Dependent variable

X = Explanatory or Independent variable

$$X = x_1, x_2, x_3, x_4, x_5, x_6, x_7$$

$$Y = y_1$$

Where:

Y = Value of Pension Fund Administrators

$y_1$  = Net Asset Value Per Unit (NAV)

and:

and:

X = Attributes of Pension Fund Administrators

$x_1$  = Firm Age (FA)

x2= Firm Size (FS)

x3= Contribution Density (CD)

x4= Number of Contributors (NC)

x5= Board Size (BS)

x6= Board Quality (BQ)

x7= Branch Network (BN)

### 3.2. Model Specification

$$NAV = f(FA_{it}, FS_{it}, CD_{it}, NC_{it}, BS_{it}, BQ_{it}, BN_{it})$$

$$NAV_{it} = \beta_0 + \beta_1 FA_{it} + \beta_2 FS_{it} + \beta_3 CD_{it} + \beta_4 NC_{it} + \beta_5 BS_{it} + \beta_6 BQ_{it} + \beta_7 BN_{it} + \varepsilon_{it}$$

$\beta_0$  is the intercept for each model

$\beta_1 - \beta_7$  are the coefficients of the explanatory variables

$\varepsilon$  is the error or disturbance term that absorb the influence of omitted variables in the proxies used.

$i$  represents the Pension Fund Administrator

$t$  represents the period of study.

The model is to determine the relationship between Firm Attributes (FA) and Net Asset Value per unit (NAV), that is to ascertain if FA has any direct relationship with NAV for the period under review which may assist pension managers in their decision as regard branch network expansion.

#### *A priori Expectation*

In this study, Firm Attributes were expected to have positive relationship with Net Assets Value per unit of fund managed by PFAs, that is,  $\beta_1 - \beta_7 > 0$ .

Hypothesis acceptance criteria:  $H_0$ ; if  $p\text{-value} < 0.05$ , reject null and accept alternate.

## 4. Analysis, Results and Discussions

This section is divided into two: firstly, data description or descriptive statistics and secondly, hypothesis testing using simple linear regression.

### 4.1. Descriptive Statistics

The study consists of yearly data for the period 2011-2020 for fifteen pension fund administrators in Nigeria. The descriptive statistics presented in Table 1 shows the mean, maximum, minimum and standard deviations of the explanatory variables measured by Firm Age (FA), Firm Size (FS), Contribution Density (CD), Number of Contributors (NC), Board Size (BS), Board Quality (BQ) and Branch Network (BN); and the dependent variables measured by Net Asset Value per Unit (NAV). The mean value for the data set of Firm Age (FA) is 12.03 while its standard deviation is 6.92. The standard deviation measures the extent of dispersion from the mean, and this suggests that there exists some level of fluctuations in the data and that the sampled pension fund administrators for the period under study may likely differ in the rate of their performance as a result of their different firm ages or year of experience from the date they were issued licence. This ensures that the experiences of old and even relatively newer companies were put into consideration in this study hence, generalization could be inferred from this study. The difference between the minimum value 5 and the maximum value 40 also shows the extent to which the pension fund administrators vary from each other in this regard.

The mean value for the data set of Firm Size (FS) is 6.47 while its standard deviation is 0.42 away from the mean. This suggests that there exists some level of fluctuations in the data and that the sampled pension fund administrators over the periods for the study may likely differ in the rate of their performance as a result of their various firm sizes. The standard deviation value shows that the size of the PFAs sampled for this study varies with a wider dispersion amongst themselves, hence, the study is not concentrated only on some similar sized firms but covers a wide range of PFAs with different sizes. This is good for generalization purposes. The difference between the minimum value of 5.4 and the maximum value 7.89 is 2.49 which also show the extent to which the pension fund administrators vary from each other.

The mean value for Contribution Density (CD) is 7.75 while its standard deviation is 0.74 away from the mean and their performances differ in their various contribution densities. The difference between the minimum value 4.41 and the maximum value 9.16 also shows the extent to which the value of the PFAs' various contribution densities varies from each other.

The mean value for the data set of number of contributors (NC) is 5.37 while its standard deviation is 0.55 away from the mean. This suggests that there exists some level of fluctuations in the data and that the sampled pension fund administrators over the periods for the study may likely differ in the rate of their performance as a result of the number of contributors. The difference between the minimum value of 3.48 and the maximum value 6.27 is 2.79 which also show the extent to which the pension fund administrators vary from each other.

The mean value for the data set of Board Size (BS) is 8.82 while its standard deviation is 2.35. This suggests that there exists some level of fluctuations in the data and that the sampled pension fund administrators over the periods for the study may likely differ in the rate of their performance as a result of their board size composition. The difference between the minimum value 4 and the maximum value 15 is 11 which also show the extent to which the pension fund administrators vary from each other in this regard in terms of their structure.

The mean value for the data set of Board Quality (BQ) is 0.78 while its standard deviation is 0.09. This suggests that there exists some level of fluctuations in the data set and that the sampled pension fund administrators for the period under study may likely differ in the rate of their performance as a result of the quality of the board. The difference between the

minimum value 0.56 and the maximum value 0.93 is 0.37 which shows a relatively close value and appears that the board quality is adequate.

The mean value for Branch Network (BN) is 29.71 while its standard deviation is 12.78 which show a wide dispersion from the mean. This suggests that there exists some level of fluctuations in the data and that the sampled pension fund administrators for the period under study may likely differ in the rate of their performance as a result of increase in branch network. The difference between the minimum value 4 and the maximum value 58

is 54 which show a relatively high expansion of branch network over time.

The mean value for the data set of Net Asset Value (NAV) per unit is 2.64 while its standard deviation is 0.98. This suggests that there exists some level of fluctuations in the data and that the sampled pension fund administrators over the periods for the study may likely differ in the rate of their asset value per unit over a period of time. The difference between the minimum value 1.02 and the maximum value 5.79 is 4.77 which shows a relatively high value and appears that the net asset value per unit is high.

**Table 1.** Summary of Descriptive Statistics.

	FA	FS	CD	NC	BS	BQ	BN	NAV
Mean	12.03	6.47	7.75	5.37	8.82	0.78	29.71	2.64
Std. Dev.	6.92	0.42	0.74	0.55	2.35	0.09	12.78	0.98
Maximum	5.00	5.40	4.41	3.48	4.00	0.56	4.00	1.02
Minimum	40.00	7.89	9.16	6.27	15.00	0.93	58.00	5.79
Observations	150	150	150	150	150	150	150	150

Source: Researcher's Study, 2020.

Table 2 below gives the estimated model for our proposed hypothesis that firm attributes do significantly impact net asset value per unit of fund managed by PFAs in Nigeria.

**Table 2.** Regression Estimate for Research Model.

Variable	Dependent Variable: NAV			
	Coefficient	Std Error	T-Stat	Prob.
Constant	8.190	3.073	2.67	0.026
FA	0.377	0.060	6.25	0.000
FS	-0.085	0.177	-0.48	0.640
CD	-0.964	0.323	-2.99	0.015
NC	-0.376	0.091	-4.14	0.003
BS	0.003	0.013	0.27	0.796
BQ	-0.160	0.082	-1.95	0.083
BN	0.002	0.005	0.41	0.691
R-squared	0.9331			
Adjusted R-squared	0.9298			
F-stat	254.96			
Prob. (F-Stat)	0.0000			

Source: Researcher's Statistical Analysis, 2020

*A priori* Expectation and Research Model

$$NAV_{it} = \beta_0 + \beta_1 FA_{it} + \beta_2 FS_{it} + \beta_3 CD_{it} + \beta_4 NC_{it} + \beta_5 BS_{it} + \beta_6 BQ_{it} + \beta_7 BN_{it} + \epsilon_{it}$$

$$NAV_{it} = 8.190 + 0.377FA_{it} - 0.085FS_{it} - 0.964CD_{it} - 0.376NC_{it} + 0.003BS_{it} - 0.160BQ_{it} + 0.002BN_{it} + \epsilon_{it}$$

### Interpretation

Model one in Table 2 examined the effect of the seven measures of the independent variables (FA, FS, CD, NC, BS, BQ, BN) on net asset value (NAV) per unit. The regression estimates results revealed that: FA has a positive and significant effect on NAV ( $\beta = 0.377$ ,  $p = 0.00$ ). The positive value of its coefficient of 0.377 implies that a year increase in FA would yield 0.377 percent increase in NAV; FS has insignificant negative effect on NAV ( $\beta = -0.085$ ,  $p = 0.640$ ); which means that when FS changes by a unit, the value of NAV would decline by 0.085 percent though this has insignificant impact on NAV; CD negatively and significantly impacted NAV ( $\beta = -0.964$ ,  $p = 0.015$ )

indicating that a unit change in CD would result to 0.964 percent decrease in NAV; NC has significant negative effect on NAV ( $\beta = -0.376$ ,  $p = 0.003$ ) revealing that a unit change in NC would yield 0.376 percent decline in NAV; BS positively but insignificantly affect NAV ( $\beta = 0.003$ ,  $p = 0.796$ ) meaning that as BS increases by 1, NAV would also increase by 0.003 percent, although the impact is insignificant; BQ impacted NAV negatively but insignificantly affects NAV ( $\beta = -0.160$ ,  $p = 0.083$ ); evidenced that an increase in BQ would results to 0.16 percent decline in NAV; while BN positively but insignificantly impacted NAV ( $\beta = 0.002$ ,  $p = 0.691$ ) meaning that as BN increases by 1, NAV also increases by 0.002 percent. Summarily, FA, CD, NC significantly influence NAV ( $p$ -vales of 0.00, 0.015, 0.003) while FS, BS, BQ, BN exerted insignificant impact on NAV ( $p$ -vales of 0.640, 0.796, 0.083, 0.691).

The Adjusted R-squared ( $R^2$ ) which measures the proportion of the changes in net asset value in Nigeria as a result of changes in previous value of firm age, firm size, contribution density, number of contributors, board size, board quality and branch network explained or caused 92.98 per cent variations or changes in the net asset value of selected pension fund administrators in Nigeria, while the remaining 7.02 per cent were other factors outside the scope of this model. The result of the F-statistics with probability value of 0.000 implies that all the measures of the independent variables (FA, FS, CD, NC, BS, BQ, BN) jointly and significantly impacted NAV.

### Decision

At the level of significance 0.05, the F-Statistics is 254.96 while the P-Value of F-Statistics is 0.000 which is less than 0.05 adopted level of significance. Therefore, this study thus decides that the null hypothesis for model one which states that "Firm attributes have no significant effect on the Net Assets Value per unit of fund managed by pension fund



administrators in Nigeria.” be not accepted while accepting the alternate hypothesis and concluded that “Firm attributes have significant effect on the Net Assets Value per unit of fund managed by pension fund administrators in Nigeria.” This result is consistent with the *a priori* expectation of this model. Thus, we have achieved the objective of this model, answered the question as well as tested the related hypothesis.

#### 4.2. Discussion of Findings

The regression results in model one investigated the relationship between firm attributes and Net Asset Value per unit (NAV) of pension fund administrators in Nigeria and found out that FA, FS, CD, NC, BS, BQ and BN had a positive significant effect on performance of pension fund administrators in Nigeria. Although the overall model is jointly significant, four of the firm attribute measures (firm size, board size, board quality and branch network) regression results show insignificant relationship with net asset value per unit when tested in isolation or individually. While firm size and board quality regression results show negative insignificant effects on net asset value, board size and branch network regression results on the other hand show positive but insignificant effects on net asset value. Also, while only firm age has positive and significant effects on net assets value, contribution density and number of contributors have negative and significant effects on net assets value. This finding aligns with the results of [4, 15] that Firm Attributes have significant effect on the value of PFA in Nigeria.

### 5. Conclusion and Recommendations

This study set out to examine the effect of firm attributes on the value of pension fund administrators in Nigeria. To achieve this major objective robustly, seven (7) different firm attribute measurements were selected and analyzed namely, firm age, firm size, contribution density, number of contributors, board size, board quality and branch network from 2011 to 2020 through descriptive analysis and multiple regression. After reviewing the extant literature about the relationship between firm attributes and value of pension fund administrators, deriving hypotheses from literature and theories, collecting data and analyzing the data, the study concluded that the effect of firm attributes on value of pension fund administrators differs in terms of measures of firm attributes and value of pension fund administrator's indicators as well as the relationship that co-exist between them. On the overall, the study concluded that firm attribute measures such as (firm age, firm size, contribution density, number of contributors, board size, board quality and branch network) enhance the value of pension fund administrators' indicators in Nigeria. This result agrees with some findings in literature such as [4, 12, 59, 57].

In line with the results and findings obtained in each of the hypotheses, the following recommendations were made which may be useful to the management, investors and

shareholders, the policymakers, the government and other stakeholders.

- i. Pension Fund Administrators should ensure that they leverage on their assets size, improve on their marketing strategy so that they can capture more pension contributors which will in turn result to increase in contribution density as well as take advantage of their Board wealth of experience to significantly enhance their Net Asset Value per unit.
- ii. Pension Fund Administrators should put the pension funds under their management to more productive investments for optimum returns (Annual Rate of Return) other than just keeping the funds safely for retirement. There is need to utilize pension assets to generate investment income for the pension funds being manage. The irresponsiveness of returns to pension contribution could indicate that the funds do not contribute to income generation. PenCom should help put in place investment guidelines that will allow investment of pension funds to generate higher and better returns; while Policymakers and Government should also make policies to improve efficiency in economic activities across the country. All these will lead to improved Annual Rate of Return.
- iii. Pension Fund Administrators should expand and utilize their branch network across the country as a strategy to increase density of contributions for growth in assets under management. PenCom should also consider upward review of the 18% minimum contribution of monthly emolument (with a minimum contribution of 10% by the employer and 8% by the employee) under the Pension Act (2014) to 25% minimum monthly contribution (with a minimum contribution of 15% by the employer and 10% by the employee). Governments (both federal and states) who have been failing in remitting contributory pensions of their employees should not only remit the backlogs to the PFAs but also ensure prompt remittances going forward. These will help improve significantly the Growth in Assets under Management of Pension Fund Administrators.
- iv. The objective of every firm is said to be to maximize customer and stakeholders' satisfaction as well as maximize shareholder's return on Investment. Therefore, all Pension Fund Administrators should ensure they utilize all the seven firm attribute measures mentioned in this study for the optimization of their various shareholders' wealth through maximization of net profit margins. All pension managers should bring their management experience to bear in the management of the firm, use their assets size to their advantage, take advantage of their board size and wealth of experience as well as branch network to improve their net profit margins and overall value.
- v. PenCom should create a platform and a conducive environment for all pension fund administrators to operate optimally and enhance their value.

## References

- [1] Adekoya, O. M., & Nwaobia, A. N. (2021). Pension fund investment in Federal Government Securities and economic growth of Nigeria. *International Journal of Creative Research Thoughts*, 9 (1), 1534-1547.
- [2] Shuaibul, K., Ali, I., & Moh'd Amin, I. (2019). Company attributes and firm value of listed consumer goods companies in Nigeria. *Journal of Research in Humanities and Social Science*, 7 (5), 40-49.
- [3] Salvatore, D. (2005). *Ekonomi manajerial dalam perekonomian global*. Salemba Empat: Jakarta.
- [4] Ajibade, A. T., Jayeoba, O. O., & Aghahowa, E. O. (2018). Pension Fund Characteristics and Financial Performance in Nigeria. *International Journal of Research and Innovation in Social Science*, 2 (12), 540-546.
- [5] Akinsulire, O. (2011). *Financial management* (7th Edition). Lagos, Nigeria: Ceemol Nigeria Limited.
- [6] Adekoya, O. M. (2019). *The impact of pension fund assets on economic growth of Nigeria*. A research work (unpublished) submitted in fulfillment of the requirements for the award of Master of Science in Accounting at Babcock University, Ilesan- Sagamu, Nigeria.
- [7] Alhassan, A. F., Bajaher, M. S., & Alsherhri, A. M. (2015). Corporate governance, firm attributes and financial performance of Saudi listed banks. *World Review of Business Research*, 5 (3), 282-295.
- [8] Assenga, M. P., Aly, D., & Hussainey, K. (2018). The impact of board characteristics on the financial performance of Tanzanian firms' corporate governance. *The International Journal of Business in Society*, 18 (6), 1089-1106.
- [9] Efuntade, A. O., & Akinola, A. O. (2020). Firm characteristics and financial performance in quoted manufacturing companies in Nigeria. *International Journal of Business and Finance Management Research*, 7 (1), 25-32.
- [10] Ichingwa, B. I., & Mbithi, M. M. (2017). Effect of total contribution on financial performance of pension schemes in Kenya: A survey of pension schemes in Kenya. *International Journal of Finance and Accounting*, 2 (6), 11 – 19.
- [11] Iyombe, I. M., (2019). *Assessment of the contribution of pension funds in industrial development in Tanzania: A case of national social security fund*. A Dissertation Submitted in Partial Fulfillment of the Requirements for the Award of the Degree of Master of Applied Economics and Business of Mzumbe University.
- [12] Kartiningsih, D., & Daryanto, W. M. (2020). The effect of firm characteristics to profitability of food and beverages companies listed in Indonesia Stock Exchange. *International Journal of Business, Economics and Law*, 22 (1), 69-76.
- [13] Kigen, A. K. (2016). *Effect of fund size on the financial performance of pension funds in Kenya*. A research work (unpublished) submitted in fulfillment of the requirements for the award of Master of Science in Finance and Investment at KCA University, Kenya. Retrieved March 30, 2021 from scholar.google.com.
- [14] Oseghale, B. E., Amiens, E. O., & Adedoyin, S. (2020). An appraisal of the performance of pension fund administration in Nigeria. *Research Gate*, 2 (3), 121- 132.
- [15] Tijjani, M. S. (2017). Determinants of financial sustainability of pension fund administrators in Nigeria. *Journal of Management Sciences*, 15 (3), 17-38.
- [16] Were, F. O., Iravo, M. A., & Wanjala, M. Y. (2017). Determinants of financial performance on pension schemes: A case of Kenya retirement benefits authority. *International Journal of Management and Commerce Innovations*, 5 (2), 161-166.
- [17] Daft, R. L. (1995). *Organization theory and design*, 5<sup>th</sup> Edition. Minneapolis, St. Paul, MN: West Publishing Company.
- [18] Kisengo, Z., & Kipchumba, S. (2015). Impact of structure related firm characteristics on performance of microfinance institutions in Nakuru, Kenya. *International Journal of Science and Research*, 5 (6), 92-99.
- [19] McDonald, K., Senaji, T. A., & Orero, R. (2020). Firm characteristics and performance of private health insurance sector in Kenya. *Journal of Business and Strategic Management*, 5 (1), 15-27.
- [20] Kristiansen, S., Furuhoft, B., & Wahid, F. (2003). Internet cafe entrepreneurs: pioneers in information dissemination in Indonesia. *The International Journal of Entrepreneurship and Innovation*, 4 (4), 251-263.
- [21] Hartaska, V. (2005). Governance and performance of pension fund administrators in central and eastern Europe and the newly independent states. *World Development*, 33 (10), 1627-1643.
- [22] Lafourcade, A., Isern, J., Mirangi, P., & Brown, M. (2005). Overview of the outreach and financial performance of pension fund administrators in Africa. *Journal of Pension System* 11 (10), 857-875.
- [23] Johnson, S., & Mhlanga, B. (2007). *Econometric methods*. 4th International edition. New York: McGraw-Hill.
- [24] Hermes, N., Lensink, R., & Meerters, H. T. (2008). Peer monitoring, social ties and moral hazard in group lending programs: Evidence from Eritrea. *World Development*, 33 (1), 149-69.
- [25] Mersland, R., & Strom, R. D. (2009). Performance and governance in pension fund administrators. *Journal of Pension System* 33 (7), 452 -459.
- [26] Nyangeri, F. O. (2014). *The effect of firm characteristics on the financial performance of pension schemes in Kenya*. (master's Thesis Submitted to the University of Nairobi, Kenya). Retrieved March 30, 2021 from scholar.google.com.
- [27] Oba, V. C., Fodio, M. I., & Shaibu, A. A. (2020). Fund traits and corporate value of pension fund administrators in Nigeria. *Review of International Comparative Management*, 21 (3), 390-400.
- [28] Oluoch, M. (2013). *Determinants of performance of pension funds in Kenya*. (master's Thesis, Submitted to University of Nairobi, Kenya). Retrieved March 28, 2021 from <http://chss.uonbi.ac.ke/sites/default/files/chss/MILLICENT%20A WINO.pdf>.

- [29] Panasian, C., Prevost, A. K., & Bhabra, H. S. (2003, July 26). *Board composition and firm performance: The case of the Dey report and publicly listed Canadian firms*. Working paper, Department of Finance, Montreal University, Montreal.
- [30] Moses, T. (2019). Board characteristics, audit committee composition, and financial reporting in Nigeria. *International Journal of Innovative Social Sciences & Humanities Research*, 7 (1), 37-45.
- [31] Nor, N. H. M., Nawawi, A., & Salin, A. S. A. P. (2017). The influence of board independence, board size and managerial ownership on firm investment efficiency. *Pertanika Journal of Social Sciences & Humanities*, 25 (3), 1039 – 1058.
- [32] Gulzar, I., Haque, I. S. M., & Khan, T. (2021). Corporate governance and firm performance in Indian textile companies: evidence from NSE 500. *Indian Journal of Corporate Governance*, 13 (2), 210–226.
- [33] Dakhlaoui, M., & Fredj, I. (2020). Board attributes and firm performance: Tunisian evidence. *IBIMA Business Review*, 2020 (2020), 1-18. doi: 10.5171/2020.557928.
- [34] Makhoulf, M. H., Laili, N. H., Ramli, N. A., Al-Sufy, F., & Basah, M. Y. (2018). Board of directors, firm performance and the moderating role of family control in Jordan. *Academy of Accounting and Financial Studies Journal*, 22 (5), 1-15.
- [35] Martin, C. J. G., & Herrero, B. (2018). Boards of directors: composition and effects on the performance of the firm. *Economic Research-Ekonomska Istraživanja*, 31 (1), 1015-1041.
- [36] Mishra, R. K., & Kapil, S. (2018). Effect of board characteristics on firm value: evidence from India. *South Asian Journal of Business Studies*, 7 (1), 41–72.
- [37] Reguera-Alvarado, N., & Bravo, F. (2017). The effect of independent directors' characteristics on firm performance: Tenure and multiple directorships. *Research in International Business and Finance*, 41 (1), 590-599.
- [38] Fuzi, S. F. S., Halim, S. A. A., & Julizaerma, M. K. (2016). Board independence and firm performance. *Procedia Economics and Finance*, 37, (4), 460-465.
- [39] Liu, Y., Miletkov, M. K., Wei, Z., & Yang, T. (2015). Board independence and firm performance in China. *Journal of Corporate Finance*, 30 (6), 223–244.
- [40] Rodriguez-Fernandez, M., Fernandez-Alonso, S. & Rodriguez-Rodriguez, J. (2014). Board characteristics and firm performance in Spain. *The International Journal of Business in Society*, 14 (4), 485 -503.
- [41] Upadhyay, A. D., Bhargava, R., & Faircloth, S. D. (2014). Board structure and the role of monitoring committees. *Journal of Business Research*, 67 (7), 1486-1492.
- [42] Itai, M. M., Binuyo, A. O., & Asikhia, O. U. (2020). Information technology service management and bank efficiency in Nigeria: The moderating role of branch network. *IOSR Journal of Business and Management*, 22 (3), 13-23.
- [43] Ashenafi, B. F., Kelifa, S. K., & Yodit, K. W. (2013). Corporate governance and impact on bank performance. *Journal of Finance and Accounting*, 1 (1), 19-26.
- [44] Klimczak, M. K. (2007). Risk management theory: a comprehensive empirical assessment. *Working Paper, Leon Kozminski Academy of Entrepreneurship and Management in Warsaw, Poland*. (<http://mpira.ub.uni-muenchen.de/4241/>). Retrieved on May 18, 2021.
- [45] Nwachukwu, J. N., Ogundiwin, A. O., & Nwaobi, A. N. (2015). *Anthology of theories and their applications in social & management sciences* (1st ed.). Ikeja, Lagos: Jamiro press link.
- [46] Guo, L. (1996). An optimal model for asset liability management. *Actuarial Research Clearing House*, 1 (13), 489–500.
- [47] Fisher, L., & Weil, R. (1971). Coping with the risk of interest rate fluctuations: Returns to bondholders from naive and optimal strategies. *Journal of Business*, 44 (1), 51-61.
- [48] Shiu, E. (1987). On the fisher-weil immunization theory. *Insurance: Mathematics and Economics*, 6 (7), 259-66.
- [49] Njuguna, A. G. (2010). *Strategies to improve pension fund efficiency in Kenya*. (Ph.D Thesis Submitted to Nelson Mandela Metropolitan University, Kenya). Retrieved February 4, 2021 from <http://erepo.usiu.ac.ke/bitstream/handle/11732/507/Amos%20Gitau%20Njuguna.pdf?sequence=1>
- [50] Bodie, Z., Detemple, J., & Rindisbacher, M. (2009). Life cycle finance and the design of pension plans. *Annual Review of Financial Economics*, 1 (2), 249-286.
- [51] Mhaka, S., Mhaka, C., & Nyamwanza, L. (2014). Pension fund size (asset size) and fund investment performance in Zimbabwe: Does size matter? *The International Journal of Business and Management*, 2 (9), 292-304.
- [52] Onyango, D. A. (2011). *The relationship between investments strategies and financial performance of pension funds in Kenya*. Unpublished MBA Thesis, University of Nairobi.
- [53] Bogan, V., Johnson, W., & Mhlanga, N. (2007). *Does Capital Structure Affect the Financial Sustainability of Microfinance Institutions?* Department of Applied Economics and Management, Cornell University, 454 Warren Hall, Ithaca, NY 14853.
- [54] Kyereboah-Coleman, A., & Osei, K. A. (2008). Outreach and profitability of microfinance institutions: The role of governance. *Journal of Economic Studies*, 35 (3), 236-248.
- [55] Yassin, M. Z. (2021). Investigating the effects of board and firm characteristics on firm performance: an agency theory perspective. *Scientific Journal for Financial and Commercial Studies and Research*, 2 (1), 228- 264.
- [56] Hirtle, B. (2015). The impact of network size on bank branch performance. *Federal Reserve Bank of New York Staff Report No. 211*, New York, NY.
- [57] Adelowotan, M., & Oshadare, S. (2016). Branch network growth and banks performance in Nigeria. *Research journal of finance and accounting*, 3 (7), 19- 48.
- [58] Beverly, H. (2005). The impact of network size on bank branch performance. *Federal Reserve Bank of New York Staff Reports*, (2) 11, 23-47.
- [59] Ajao, M. G., & Ogieriakhi, E. (2018). Firm specific factors and performance of insurance firms in Nigeria. *Amity Journal of Finance*, 3 (1), 14-28.