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INFLUENCE OF INVENTORY MANAGEMENT AS A GOVERNANCE TOOL ON THE FINANCIAL PERFORMANCE OF LISTED PAINT MANUFACTURING FIRMS IN NIGERIA: AN EMPIRICAL EVIDENCE

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Abstract: This study examines the influence of inventory management practice as a critical governance tool on the financial performance of the Paint manufacturing companies in Nigeria. Inventory management practice as a vital tool for a manufacturing concern assist to remain competitive and effective, hence its efficient management cannot be underestimated. Relevant theories were reviewed by the study to provide good theoretical foundation for this research. The study population consists of Nine (9) listed manufacturing companies in Lagos state of Nigeria registered with LCCI and NSE as at 2019 for a period of 12 years (2008-2019). Both descriptive and inferential statistics were employed to analyze the pooled panel data through OLS regression method, having collected the panel data through cross sectional survey method. Both data from primary and secondary sources were subjected to diagnostic tests. The results revealed that there is a positive relationship between inventory management practice and financial performance but a negative relationship with return on sales of the sampled companies in Nigeria. The study recommends that the company managers should endeavor to design and monitor procedures for inventory control, improve communications across board, maintain good suppliers' chain management of the inventory with adequate security. It is equally recommended that government needs to control the current spiral inflation and stabilize foreign exchange market as regards value of the Naira (Nigerian currency) to improve inventory management and enhance national economic development of Nigeria.

KEY WORDS: Inventory management, Financial performance, Foreign exchange market, Governance tool.

1.0 INTRODUCTION

Inventory management studies have been documented to show its influence on industrial performance of various economies mostly in the developed world, even though they have reported controversial and conflicting results due to myriad of factors or variables and the research climes. It has therefore been attracting more studies and researches from technocrats, professionals & academia, accountants and practitioners, both from the developed and developing countries in Africa like Nigeria. Inventory could be described as the goods that are stocked that have a resale value in order to gain some profit, since the profitability of a firm is directly or indirectly affected by the inventory management expertise (Shardeo, 2015). According to extant literature, inventory management involves the recording and monitoring of stock levels, forecasting future demand and deciding on when and how to order or what ordering procedures to follow (Adeyemi & Salami

2010; Stevenson, 2010; Nsikan, 2015). The need to manage inventory effectively, efficiently and as an important operational weapon or tool for products and service organizations remains a survival strategy in the present highly competitive markets of the world (Yator & Moronge 2018).

Inventory management involves having adequate quantities of high quality items available to serve customer needs with the aim of minimizing the costs of carrying the inventory. According to Adeyemi and Salami (2010), inventory constitute the most significant part of current assets of majority of the Nigerian manufacturing companies. It thus becomes essential to deploy cutting edge techniques to manage inventories efficiently so as to avoid loss of sales, cost of changing production rates, overtime cost, sub- contracting, unnecessary cost of sales and back order penalties during periods of peak demands (Chen, Murray & Owen, 2005). Undoubtedly, the role of accounting standard and policies on effective inventory management for better performance has not been well researched, hence limited studies exist in the critical area in Nigeria and in most underdeveloped economies of the world. However, accounting standards relating to inventory management and control have exerted some influence on ways by which inventory are recorded and reported in the books. For instance, IAS 2 acknowledges that some enterprises classify income statement expenses by nature (materials, labour, and so on) rather by function (cost of goods sold, selling expense, and so on). The objective of IAS 2 is to prescribe the accounting treatment for inventories. It provides guidance for determining the cost of inventories and subsequently recognizing an expense, including any write-down to net realizable value, so as to avoid wrong classification. It also provides guidance on the cost formulas that are used to assign costs to inventories. From the foregoing, an empirical evidence on how accounting standard and policies influence inventory management as it impacts on financial performance is expected to be provided by this current study.

Ajala (2021), reported in his research that, the overall process of effective inventory management crosses a number of functions and as such it can be divided into the following general categories as thus: Demand management; Inventory planning and ordering often referred to by its acronym MRP or in a lean manufacturing environment (Koumanakos, 2008); Inventory optimization systems where inventory should be deployed to satisfy predetermined supply chain management objectives; physical inventory control (Laugero, 2002). Assessing the firms' financial performance holistically is a subjective measure of how well a firm can use assets from its primary mode of business to generate revenues. This term is also used as a general measure of a firm's overall financial health over a given period of time and can be used to compare similar firms across the same industry or compare industries or sectors in aggregation (Ajala, 2021). There are many different ways to measure financial performance but all measures should be taken in aggregation. Line items such as revenue from operations, operating income or cash flow from operations can be used, as well as total unit sales. Furthermore, the analysts or investors may wish to look deeper into financial statements and seek out margin growth rates or any declining debt. Financial performance in a broader sense refers to the degree to which financial objective has been accomplished and it is an important aspect of finance risk management and resource governance measures in companies. It is the process of measuring the results of a firm's policies and operations in monetary terms with a view of attaining optimality in its use and application.

Firms' performance could be measured in a number of ways by which we have turnover, earnings and profits. Prempeh (2016) submitted in his study that the need to understand the cost measures associated with inventory management to maximize profit remains unabated to the manufacturing industry in Ghana. The economic importance of Paint manufacturing sector of the Nigerian economy cannot be underestimated since it contributes maximally to the economy in terms of employment generation, value creation and increased Gross Domestic Product (GDP). For instance, Kiwawu (2018) cited in the Vanguard News online of October 24, 2018 that Nigeria's paint industry was projected to record five per cent growth rate from its estimated $268 million (N96.50 billion) in 2018 to $377 million (N135.80 billion) by 2025. The Info guide Nigeria online report (2019) further described the Nigerian Paint industry as one of the largest producing

paint industry in Africa and major player in the employment of labor and general economic advancement. In recent years, the non-financial industry has been facing a number of challenges especially on inventory management or material control, thus affecting the performance of this sub sector in Nigeria. Based on the foregoing, this research focusses on the need to examine inventory management and resource governance measures on the performance of listed Paints manufacturing companies in Lagos State-Nigeria which remains the economic and industrial nerve center of Nigeria with the highest Paints Manufacturing companies in Nigeria.

1.2 Statement of the Problem

Inventory management has been a subject of debate among management accountants, researchers in accounting and finance, practitioners and players in commerce as well as business investors for decades. However, most inventory management studies are concentrated in developed economies. Few that exist in developing economies like Nigeria do not focus particularly on manufacturing companies especially Paint industry, an industry that has made great contributions to the economic growth of Nigeria as evident from the literature. This sub sector of the economy has experienced declining contribution to GDP and employment generation in the recent time. Suffice it to say that, its contribution to total Gross Domestic Products, remained low at 0.03 percent according to the Nigerian Stock Exchange Report, (2017). Myriad of determinants have been identified in the literature even though they are inexhaustible as factors responsible with conflicting and confounding results and empirical evidence on its effects on inventory management practice that is geared towards improved performance and higher profitability in the industry. However, there is lack of clarity in the various empirical results submitted as well as its limitation generally mostly on the use of inventory management as a principal or governance tool to accomplish company goals. For example, Yator and Moronge (2018), sought to find out the determinants of inventory control systems implementation and reported that: Staff Training, Funding, Top Management Support and IT Infrastructure influences inventory management practice in the manufacturing firms. In another study, Shiau (2017) found out that documentation or store records, planning, knowledge of employees or staff skill have shown to significantly influence the effectiveness of inventory management while funding showed slightly significant influence on inventory management in manufacturing industry. This serves as a pointer to the factors influencing effective inventory management from the perspective of Paint manufacturing companies in Nigeria.

The research methodology employed by most studies and empirical evidence submitted are at variance since some either use qualitative or quantitative research or combined at different instances and environments. Some used descriptive while others use inferential statistics to explain the relationship between inventory management practice (Mwangi & Nyambura 2016; Bawa, Asamoah & Kissi 2018; Prempeh ,2016; Fosu 2016) while others like (Prempeh, 2016) used profitability to determine firms' performance. Mwangi and Nyambura (2016), documented the use of explanatory variables: management efficiency, profitability, cash flow, firm size and growth levels respectively thus arriving at a similar finding of significant positive relationship to firms' performance as research outputs. Based on the foregoing, the need to further expand knowledge on the use of inventory management as a governance tool on the financial performance of Paints manufacturing companies is the focus of this research. The study employed the use of mixed research methodology for its statistical analytical purpose and subsequent evaluation of its results.

1.3 Research Objective

The main objective is to examine the influence of inventory management practice as a governance tool on the financial performance of listed Paint manufacturing companies in Nigeria

1.4 Research Hypothesis

The study hypothesis was stated in null form:

There is no significant influence of inventory management practice as a governance tool on the financial performance of listed Paint manufacturing companies in Nigeria.

2.0 LITERATURE REVIEW

2.1 Conceptual Review on Inventory

Inventories according to Stevenson (2010) are the current assets which are expected to be converted within a year in form of cash or accounts receivables.

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2.1.1 Conceptual Framework

The study conceptualizes relationship between dependent variables and independent variables. The inventory management variables are independent variables expected to cause financial performance to grow as depicted in the diagram below.

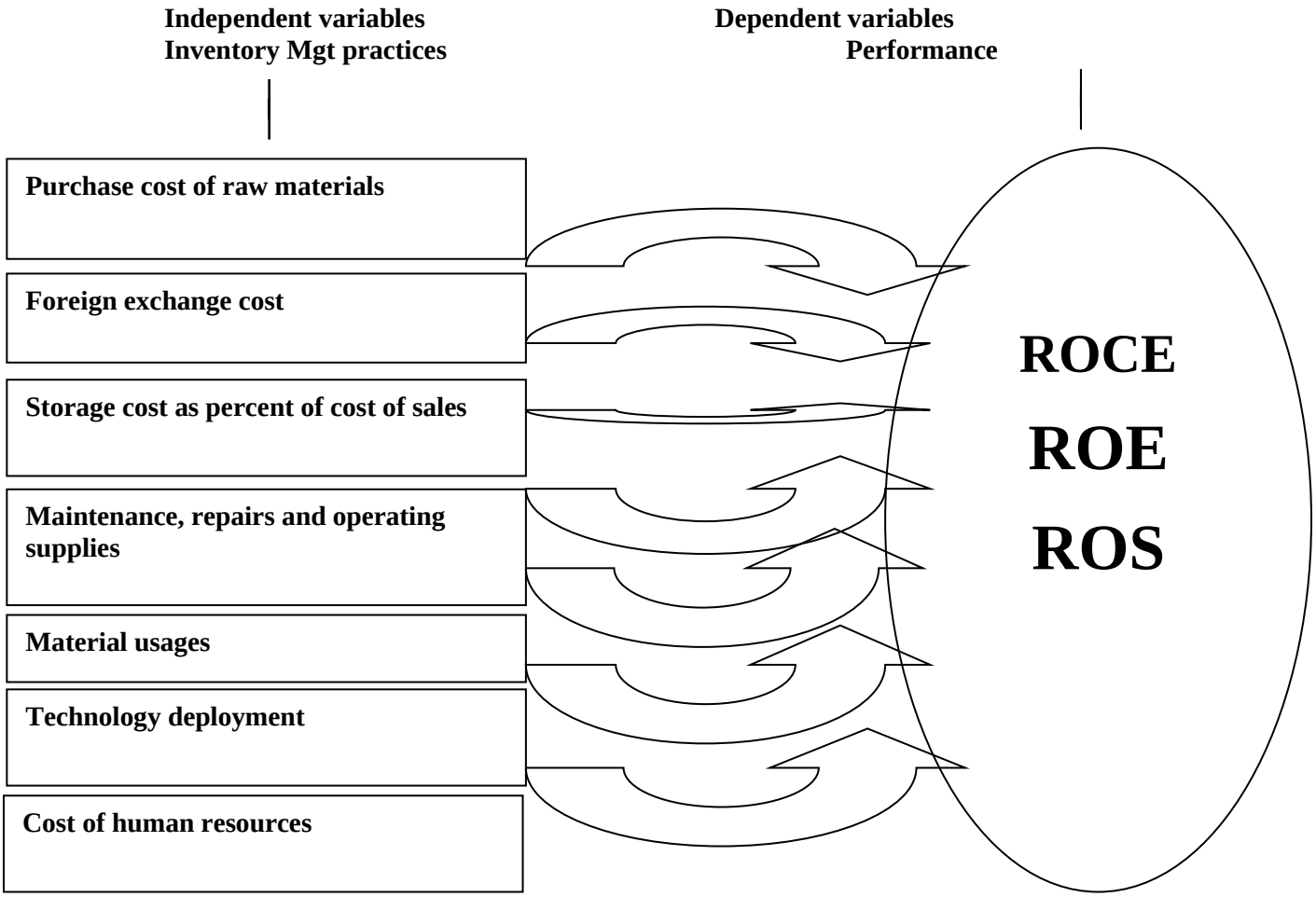

Figure 2.1: Conceptual model of the Study
Source: Author's compilation 2019

2.1.2 Overview of Inventory Management Practices

Inventory management has been described as an important aspect of cost control and reduction schemes and as such needs be approached with great attention. According to Nsikan (2015), inventories represent those items which are either accumulated for sale or they are in the process of manufacturing or in the form of materials which are yet to be utilized. Ghosh and Kumar (2003) defined inventory as a stock of goods that is maintained by a business in anticipation of some future demand. Ogbo, Onekanma, and Ukpere (2014), Adeyemi and Salami (2010), stated that inventory constitute one of the largest and most tangible investment of any retailer or manufacturing organization. Zipkin (2000) believed that holding inventories at the lowest possible cost and giving the objectives to ensure

uninterrupted supplies for on-going operations is the aim of inventory management.

Nsikan (2015), identified inventory management best practices to include just in time, vendor managed inventory, collaborative planning, forecasting and replenishment, automatic replenishment, agile system, and material requirement planning. Lwiki (2013) emphasized in his study that for maximization of profits and survival of a business, which are the fundamental objectives for every firm, systematic and that being the case, specific performance indicators have been proved to depend on the level of inventory management practices. According to Tungo (2014), firms that efficiently apply inventory management practices have reported excellent financial performance as regards increase in profitability and operating cash flow leading to higher firm performance in the industry.

2.1.3 Inventory Management and Control Techniques

Stevenson (2010) and Shardeo (2015) opined that firms should endeavour to determine the optimum level of inventory in order to achieve the objectives of good and optimal inventory management and control. However, this cannot be possible without the application of sound techniques as highlighted and discussed below:

(A) ABC Analysis Technique

This inventory control approach is based on the doctrine that a small portion of the items might characteristically represent the bulk of the value of money of the total inventory utilized in the process of production, whilst a comparative number of items can be from a small fraction of the financial value of stores (Monks, 1996). Studies supported that ABC analysis is a method for prioritizing inventories. Inventories are classified into 3 sub-classes, including A, B and C. Pandey (1979), equally documented the basic steps involved in implementing the ABC analysis empirically.

(B) Just in Time Techniques

This concept was established by manufacturing businesses in Japan in which inventories are acquired only when demanded in a business for the purpose of production and this focused on enhancing the return on investment of a firm through the reduction of process inventory and its associated costs. The goal of JIT techniques is zero inventories with 100 percent quality. Just in time purchasing recognizes high costs associated with holding high inventory level and as such it has become important in most organizations to order inventory just in time of production so as to cut costs of holding inventory like storage lighting, heating, security, insurance and staffing by Dimitrios (2008).

(C) Vendor Managed Inventory (VMI)

Management of inventory supply determines the way an organization will propel itself to high performance effectiveness and competence. Many firms have resulted to VMI systems which assist the provider to monitor clientele' inventory usage. Through the VMI system customers can avoid stock outs since the supplier will already have replenished the stocks and also there will be no costs related to handling of inventory since the supplier will know the quantity that is needed and which product will be put on the shelves. The input phase here is communication which should be of good intention from the beginning of business and should bring about a positive relation between the supplier and the customer by Thogori and Gathenya (2014).

(D) Bar-coding

Bar-coding is the most popularly used method of tracking a product for purposes of understanding the level of inventory, reorder and deliveries or sales; this enables firms to avoid issues of stock outages or overstocking. Bar-coding helps to track a particular item at any specific time. Once items leave the store, they are instantly recorded in the system thus making it possible to understand which stock is running low and the items to be placed.

(E) Simulation

The function of simulation in inventory management usually occur for purpose of responding to the wish for a proper decision making process that would take into consideration the complexities and variances within the environment of a system. A number of researches used simulation to establish an inventory control approach associated with tracking signals to assess performance. The other established models aimed at special situations of inventory state (Eckert, 2007). In corroboration of simulation method, Mukopi and Iravo (2015), established a simulation-based decision-support system for controlling and managing of one product inventory model and by taking into consideration, the impact of changes in

demand, the point of reordering, the control of the stock level, period between the reviews, as well as the lead time. Related to this research is a replica research but was expanded to integrate a generalized multi-product inventory system.

2.1.4 Financial Performance

Tungo (2014), submitted that financial performance is an objective measure of how well a firm can use assets from its primary mode of business and generate revenue. This term is also used as a general measure of a firm's over all financial health over a given period of time, and can be used to compare industries or sectors in aggregation. There are many different ways to measure financial performance but all measures should be taken in aggregation. Line items such as revenue from operations, operating income or cash flow from operations can be used, as well as total unit sales.

Furthermore, the analyst or investor may wish to look deeper into financial statements and seeks out margin growth. The firm's operational performance is calculated in opposition to standard or prescribed indicators of effectiveness, efficiency and environmental responsibility, such as cycle time, productivity, waste reduction, and regulatory compliance (Adeyemi & Salami, 2010). In order to improve operational efficiency, an organization has to measure both the input and the output side of the inventory management (Abdel-Maksoud, Asada & Nakagawa, 2008). Again, the major goal of organizations is to reduce the costs associated with the inventory management, which would impact positively on the overall performance of an organization. Based on extant studies, the most popular measure of financial performance is discussed below representing the dependable variable as highlighted in the conceptual framework of this study:

(A) Return on Capital Employed (ROCE): ROCE is a financial ratio that can be used to assess a company's profitability and capital efficiency or how well a company is generating profits from its invested capital. It is one of the several profitability ratios commonly used by financial managers, stakeholders, and potential investors in analyzing a company for investments. It's similar to Return on Invested Capital (ROIC). As a performance indicator, it is useful when comparing the performance of companies in capital- intensive sectors like the Paint industries, utilities and telecoms since ROCE considers debt and equity as against ROE that analyzes profitability related to a company's shareholders' equity. Succinctly put, it tells the amount of profit a company is generating per $1 of capital employed and the more the profit per $1 a company can generate, the better it is. So, a higher ROCE indicates stronger profitability. Across companies under comparison. It is a metric that uses two components of EBIT and the Capital employed i.e. operating income without interest or taxies with the second component as Capital Employed. Therefore, Capital Employed is found by subtracting Current Assets (CLs) from Current Liabilities (CAs) which ultimately gives shareholders' equity plus long-term debts. It is otherwise known as funds employed which represents the total amount of capital used for the acquisition of profits by the company.

(B) Return on Equity (ROE): The ROE measures accounting earnings for a period per dollar of shareholder's equity invested. ROE is so popular because it is in a real sense a summary of information on the income statement both sides of the balance sheet. It provides an "accounting" measure of the "returns" to shareholder's investment. The three determinants of ROE are: Profit margin = Net Income or Sales; Assets Turnover = Sales or Assets; Financial leverage = Assets or Shareholder's Equity. The amount of net income returned as a percentage of shareholder's equity. Return on equity measures a corporation's profitability by revealing how much profit accompanies or generates with the money shareholders have invested. ROE is expressed as a percentage and calculated as: ROE=Net Income or Shareholder's Equity while Net Income is for the full fiscal year (before dividends paid to common stock holders but after dividends to preferred stock.) Shareholder's equity does not include preferred shares.

(C) Return on Sales (ROS)

A ratio widely used to evaluate a company's operational efficiency is ROS which is also known as a firm's "operating profit margin". Return on Sales (ROS) is a ratio widely used to evaluate an entity's operating performance. It is also known as "operating profit margin" or "operating margin". ROS indicates how much profit an entity makes after paying for variable costs of production such as wages, raw materials, etc. (but before interest and tax). ROS is

usually expressed as a percentage of sales (revenue). Return on sales (operating margin) can be used both as a tool to analyze a single company's performance against its past performance, and to compare similar companies' performances against one another. Calculations of ROS commonly use operating profit before deducting interest and tax (EBIT); using income after-tax is less common.

Return on sales (operating margin) = EBIT or Revenue

2.1.5 Electronic Inventory *(E-Inventory) & globalization*

This is electronic means of controlling inventories or stock to generate automatic updating and reports for users is in line with globalization. Dramatically improved productivity, e-inventory helps in computerizing each and every process of managing the assets like record new assets, discard assets, print barcode and distributing assets. With e-inventory assets management, it is easier to maintain, compared to manual paper filing system. It has the abilities to update quantity at hand in the inventory, maintains all vendor's information, keep complete history of purchase orders with supplier and cost information, keep track of maintaining history and service due for equipment, greatly reduces the amount of paper work involved. It enables a company to track large items of inventories easily. It is an automatic system of counting inventories, recording withdrawals and balances. There is an in-built system of placing order as the -computer notices that the re-order point has been reached. The information system of the buyers and suppliers are linked to each other. The Electronic inventory has some basic inherent features for efficient operating system such as Asset management tracking resolution and others. It also has its inherent advantages and objectives.

2.0 THEORETICAL REVIEW

The following theories are considered relevant for the study so as to provide theoretical foundation for achieving the stated research objective.

2.1 Knowledge-Based Theory

As stated by Grant, (1996) the knowledge-based (KBV) theory of the firm is an up-to-date enlargement of the RBV theory. From the research study, it has been asserted that knowledge awarded to human resources was the most important strategic resource and, affirming the point that KBV theory is an extension of the RBV theory. Being that human resources is an intangible resource, knowledge was also seen to fall in the same category and intangible assets are highly valued. Kontus (2014) showed that firms heterogeneous entities that constitute of knowledge and thus agree with point made earlier by Grant (1996) that the KBV theory of the firm is an extension of the RBV theory of the firm. With this human resources and knowledge resource, a firm has a competitive advantage, for this resource is next to impossible to imitate thus the firm has got sustainable differentiation, Wiklund and Shepherd (2003). This theory is believed to be relevant based on the need to seek advanced innovative inventory knowledge or systems by firms.

2.2 Contingency Theory

The contingency theory, developed by Joan Woodward in the 1950s, is a class of behavioural theory which claims that there is no best way to organize an organization, to lead a company or to make decisions. Instead, the optimal course of action is contingent upon the internal and external situations. Several contingency approaches were developed concurrently in the late 1960s. The authors of these theories argued that Marx Weber's bureaucracy and Fredrick Taylor's scientific management theories had failed as they neglected environmental influences and that there is not one best way to manage enterprises. These influences shape individual behavior in a certain situation while managing organizations. Contingency approach to management finds its foundation in the contingency theory of leadership effectiveness developed by management psychologist Fred Fielder. It is based on the theory that management effectiveness is contingent, or dependent, upon the interplay between the applications of administration behavior. In other words, the way you manage should change, depending on the conditions and that one size does not fit all. As argued by Dervitsiotis (2015), the contingency theory is about the need to achieve a fit between what the organization is and what it wants to become. It is all about the organization's strategy, culture, goals, technology, staff and external environment, and what it does; how it is structured and the processes, procedures and practices it puts into effect; therefore, the theory is anchored on dynamic theory of profit.

2.3 Related Empirical Review

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The effect of inventory management on firm's performance has been researched with findings. However less of such studies have been observed in developing countries like Nigeria especially in the Paint industry. More of such studies are concentrated in the developed countries. For example, in Greece, Koumanakos (2008) studied the effect of inventory management on firm performance in manufacturing firms operating using three industrial sectors in Greece, food textiles and chemicals covering 2013-2017 period. The hypothesis that leans inventory management leads to an improvement in a firm's financial performance was tested. The findings suggested that the higher the level of inventories preserved (departing from lean operations) by a firm, the lower the rate of return. In a related development, Prempeh (2015) evaluates the impact of efficient inventory management on the profitability of manufacturing firms in Ghana. A cross sectional data from 2004 to 2014 was gathered for the analysis from the annual reports of four manufacturing firms listed on the Ghana Stock Exchange. Measures of profitability were examined and related to proxies for efficient inventory management by manufacturers. The Ordinary Least Squares (OLS) stated in the form of a multiple regression model was applied in the analysis. The study revealed that the main variable raw materials inventory management designed to capture the effect of efficient management of raw material inventory by a company on profitability had significant and positive impact on the profitability of the manufacturing firms in Ghana.

The study conducted by Ogbo et.al., (2014) investigated the impact of effective stock management on organizational performance in the Seven-Up Bottling Company in Nigeria. The study was conducted basing it on four research hypothesis which were generated and tested at 10% level of significance. The results from the study revealed that, flexibility in stock management practice is a crucial approach for and organizational performance. Organization can benefit from stock control by means of reduced operational cost, improved sale effectiveness as well as simple stocking and inventory recovery. Their findings further revealed significant influence of between operational feasibility, convenience of stock control management in the customer related issues within the organization, as well as cost effectiveness techniques are implemented to improve the return on investment of the organization.

3.0 RESEARCH METHODOLOGY

3.1 Research Design: This study adopted a descriptive survey research design that's non-experimental which studies the relationship between non- manipulated variables in a natural setting was adopted. A descriptive research design is used when data is collected to describe persons, organizations, settings or phenomena (Mugenda and Mugenda 2003: Maxwell, 2012) Survey design also has enough provision for protection of bias and maximized reliability (Creswell, 2012). In this regard, the study objective would have been achieved through the use of descriptive design employed.

3.2 Area of Study: The study area was Lagos state as the location of the sampled Paints companies and as an industrial hub where imported and local raw materials can be easily accessed for Paint industry. Lagos is primarily the seat or location of major manufacturing companies in Nigeria including Paints.

3.3 Study Population: The population of the study was the fourteen (14) registered Paint manufacturing companies registered with Lagos Chamber of Commerce and Industry as obtained from the Nigerian Stock Exchange, Lagos record (2019).

3.4 Sample Size and Sampling Technique: Samples for the study were nine (9) out of the fourteen (14) selected Paint manufacturing companies in Lagos State metropolis. The study adapted purposive sampling technique. In purposive sampling the person who is selecting the sample tries to make the sample representative, depending on his opinion or purpose of the study.

Table 3.1 List of expected sampled paint manufacturing companies in Nigeria with LCCI in Lagos state as at 2019

Paint company	**Product**	**Location**
Portland Paint	Paint	Ikeja Lagos

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D. Meyer Paint	Paint	Alausa, Lagos
Premier Paint	Paint	Ifo ibogun road, Ogun state
CAP Paint	Paint	Ikorodun road, Lagos.
Perfect Paint	Paint	Ikotun Lagos
Berger Paint	Paint	Ikeja Lagos
Empire Paint	Paint	Ayobo, Lagos
Doyin Paint	Paint	Victoria Island, Lagos
President Paint	Paint	Lekki, Lagos

Source: Nigeria Galleria, 2019

3.5 Method of Data Collection: Both primary and secondary data were employed in the course of this study. The secondary data were the financial record and books of account of the selected companies to obtained information about the performance of the company between 2008 and 2019 making 12 years of coverage.

3.6 Instrument of Data Collection: Primary data were collected through structured questionnaire, 200 questionnaires were distributed to nine (9) sampled firms and 160 was returned constructed on a Likert scale points on the view of professional accountants working in the sampled firms on their perceptions of barriers to inventory management in their various companies. Secondary data obtained from the Nigerian Stock Exchange financial records and books of account of the sampled companies and therefore used for data analysis to achieve the study's objective from 2008 to 2019.

3.7 Diagnostic Tests: Various diagnostic tests were conducted including multicollinearity and normality. Variance of Inflation Factor (VIF) was used to test for Multicollinearity. The F Statistic was used to determine the validity of the regression model adopted. Estimation of Panel Data Model was equally done on the static panel data models and can be estimated using Pooled Data Regression (PDR), Fixed Effects (FE) and Random Effects (RE). Each of these methods has its underlying assumptions which must necessarily be satisfied to obtain unbiased and efficient estimates. The study conducted the Hausman test and employed the Cronbanch alpha at levels between 0.7-0.8 (the rule of thumb) to measure the reliability of the instrument and to attest to the reliability and validity of the instruments.

3.8 Method of Data Analysis: Data collected were sorted, collated and analyzed based on the research objective with the corresponding hypothesis using OLS to assess the influence of inventory management practice on the financial performance of the listed Paint Companies. The inventory management/governance variables were represented by identified variables: cost of material, maintenance cost, cost of technology, training cost etc. Financial performance (dependent variable) was proxy as ROE, ROA and ROS of sampled manufacturing firms. The model is specified as:

3.9 Model Specification: Model specification refers to the determination of which independent variables should be included or excluded from a regression equation. A multiple regression model is, in fact, a theoretical statement about the casual relationship between one or more independent variables and a dependent variable. As observed in the literature Adeyemi et. al., (2010) and Akinlabi (2017) models were adopted by this paper. A typical OLS regression model can be expressed as:

$$Y_{it} = \beta 0 + \beta_1 \chi_{1it} + \beta_2 \chi_{2it} + \beta_3 \chi_{3it} \beta_4 \chi_{4it} + \beta_5 \chi_{5it} + \beta_6 \chi_{6it} + \varepsilon i$$

The subscripts it refers to cross-sectional dimension and time series dimension respectively.

The regression model shall take the form:

$$Y_{it} = \beta 0 + \beta_1 \chi_{1it} + \beta_2 \chi_{2it} + \beta_3 \chi_{3it} \beta_4 \chi_{4it} + \beta_5 \chi_{5it} + \beta_6 \chi_{6it} + \varepsilon i;$$

Where:

Y_{it} = inventory practice adoption in time t

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$\chi_{1its:}$ are explanatory variables (Inventory management variables), cost of raw materials (CRM), foreign exchange (FREXH), staff cost and human resources (STFC), repair, maintenance and supplies (RPM), storage cost (STRGC) and technology deployment cost (TECH).
$\beta 0$ = the intercept (value of EY when X = 0);
β_1 - n = the regression coefficient or change included in Y by each χ_{its}
εi = error term

4.0 RESULTS AND DISCSSION

4.1 Ho: There is no significant influence of Inventory management practice as governance tool on the financial performance of listed Paint manufacturing companies in Nigeria.

The results from the Pooled Data Regression Model Output was displayed below. Pooled Data Regression Model was appropriate model, the study data was Cross Sectional Data, and for a specified extended time series for the periods of the study (2008-2019).

4.2 Model Output Discussions

Table 4.1: Pearson Correlation Matrix for Model at 0.05 Significant level

	ROS	CRM	FREXH	STFC	RPM	TECH	STRGC	
ROS	1.0000							
CRM	-0.0686 0.4808	1.0000						
FREXH	0.1888 0.0503	0.0569 0.5589	1.0000					
STFC	-0.1664 0.0852	-0.0440 0.6511	-0.0335 0.7310	1.0000				
RPM	0.3472* 0.0002	-0.1653 0.0873	-0.0427 0.6607	0.0555 0.5682	1.0000			
TECH	0.0676 0.4868	0.1346 0.1648	0.0962 0.3220	-0.0642 0.5090	-0.1630 0.0918	1.0000		
STRGC	-0.0546 0.5750	0.0816 0.4009	0.0839 0.3882	-0.0741 0.4459	-0.1750 0.0701	-0.0593 0.5423	1.0000	

Source: SPSS Version 10 Model Result Output, 2022.

4.2.1 Diagnostic tests were conducted as well as Housman test to know most reliable estimation between the fixed effect estimation and the random effect estimation. The Housman test for the model indicated that there was enough evidence to reject the null hypothesis of no substantial difference between the fixed effect and random effect. Therefore, this journal paper used the most consistent, reliable and efficient estimators of fixed effect estimations as the p-value was less than 5% for model. The result showed that the Chi square for the model was 13.52 with the probability of 0.0014. This finding concurred with the empirical research done by Ogbo et.al., (2014). The F-Statistic (3.50) and Probability (0.0036) showed that all the variables (independent variables) jointly have significant effect on financial performance at 0.05 level of significance. The R-squared gives statistical information about the goodness of fit of information. R-squared was 0.6097 which indicates that about 60.97% of the variation in the dependent variable was explained by the explanatory variables.

4.2.2 Further Comments and Discussion:

(ROCE): The correlation matrix for the variables was displayed in Table 4.1above, in order to examine the correlation that exists among variables. The results showed that there was negative relationship between ROCE and three of the explanatory variables i.e., the three of the measures of inventory management (fluctuation in foreign exchange, staff cost, repair and maintenance) which were -1.85%, -28.77% and -37.34% respectively in which staff cost, repair and maintenance were statistically significant at 5% level (p value of 0.0025 and 0.0001). However, ROCE was positively related and significantly with cost of raw materials, technology and storage cost at 46.48%, 27.67% and 13.62% respectively at 5% level except for storage cost that was not significant. This implies that availability of raw materials, advanced technology and low

storage cost enhanced the financial performance of the paint manufacturing firms.

(ROE and ROS): Return on equity (ROE) was negatively related with two of the explanatory variables (staff cost, repair and maintenance) at a reasonable percentage of 27.15% and -37.04% respectively but both were statistically significant at 5% level. Return on sales (ROS) was negatively related with cost of raw materials, staff cost and storage cost at the percentage of -6.86%, -16.64% and -5.46% respectively but both were not significant at 5% level. This result implies that the cost of raw materials and staff cost had negative relationship with financial performance of Nigerian paint manufacturing firms. ROS had a positive relationship with fluctuation in foreign exchange, repair and maintenance and technology with 18.88%, 34.72% and 6.76% in which fluctuation in foreign exchange was the only variable that was statistically significant at 5% level while other variables were not significant. This implies that fluctuation in foreign exchange, repair and maintenance and technology have a positive relationship with ROS on the financial performance of Paint manufacturing firms in Nigeria.

5.0 SUMMARY, CONCLUSION AND RECOMMENDATION

5.1 Summary: This study examines the influence of inventory management practice on the financial performance of listed Paint Manufacturing Companies in Nigeria. The study employed descriptive econometric analytical tools in studying Nine (9) Nigerian quoted Companies with 108 observations for the period 2008 to 2019. The analyses were performed using pooled panel data. Three performance measures were employed (dependent) namely the return on capital employed (ROCE), the return on equity (ROE) and the return on sales (ROS). The significance of all these variables on performance indicated that inventory management practice has great impact on financial performance of Paint Manufacturing Firms in Nigeria. The finding interestingly revealed that all the inventory management practice measures have a positive and highly significant effect on the market performance measure with return on equity (ROE). Inventory management practice measures have negative but highly significant effect on the market performance measure with return on sales (ROS). The significance of all these variables on performance indicated that inventory management practice has great impact on financial performance of Paint Manufacturing Firms in Nigeria.

5.2 Conclusion: This study concluded that Cost of Raw Materials, Fluctuation in Foreign Exchange, Staff Cost, Repair and Maintenance Technology Employed and Storage Cost showed significant relationship for inventory management of listed Paint Manufacturing Firms in Nigeria, as they were highly correlated. Furthermore, all the inventory management variables have significant effect on the financial performance of Paint Manufacturing Firms in Nigeria.

5.3 Recommendations: Based on the findings and conclusions of this study, it was recommended that managers or governors of Paint firms should endeavor to do the following among other measures so that inventory management will indeed as serve a governance or optimizing resource in a manufacturing industry all over the world:

(i) Design and monitor procedures for inventory control right from purchase requisition, improve in communications with the suppliers especially on inventory procurement; (ii) strive to maintain good suppliers' chain management of inventory to avoid pilferages and to ensure that adequate security is in place; (iii) government should help stabilize foreign exchange fluctuation resulting from the present single forex system which constitutes a major barrier to effective inventory management as regards procurement of raw materials; (iv) all these will ginger better contribution of the industry to enhance the economic growth of Nigeria.

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