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EFFECTIVE INVENTORY MANAGEMENT PRACTICE AND FIRMS PERFORMANCE: EVIDENCE FROM NIGERIAN CONSUMABLE GOODS FIRMS

[1]Emmanuel Olusuyi Ajayi. [2]Tunde Olutokunbo Obafemi.[3]Felix Ebun Araoye.
[1]Ph.D, Department of Economics, Accounting and Finance, Bell University of Technology, Ota, Ogun State, Nigeria
[2]Ph.D, Department of Accountancy, Federal Polytechnic, Offa, Kwara State, Nigeria
[3]Ph.D, Department of Management and Accounting, Ladoke Akintola University of Technology, Ogbomosho, Oyo State, Nigeria

ABSTRACT: This study is set to ascertain the relationship between effective inventory management practice and firms performance of selected consumable goods firms on Nigeria stock exchange for a ten (10) year period from 2009-2019. Firm performance was surrogated by return on capital employed, firm growth and return on investment while inventory procurement cost, inventory usage and value of stock was used as a parameter for measuring effective inventory management practice. This study used panel data that was sourced from publications of Nigeria stock exchange, fact books, annual reports and account of the listed brewery firms from 2009 – 2019. Correlation co-efficient and ordinary least square (OLS) regression method with the aid of STATA 13 statistical package was used to analyse the data. The findings revealed a significant positive relationship between return on capital employed, firm growth and effective inventory management practice at 5% significant level; a positive and non-significant relationship between return on investment and effective inventory management practice. This study recommended amongst others that consumable goods firms' management should emphasis on the proper effective inventory management practice techniques and measuring of efficiency deviations to identify weaknesses in the process of managing inventories.

Keywords: Effective Inventory Management practice, Firm Performance, consumable goods firms.

I. Introduction

In the past effective, inventory management practice was not seen to be necessary. In fact left-over inventories were considered as indication of wealth. Management by then considered over stockingusefulness. But today firms have started to embrace effective inventory management (Syed, Nurul, Nabihah & Raja, 2016). Managers, needs morereliable and effective control in order to reduce costs and remain competitive. Ogbu (2016) posits that inventory management enhances moreprofit by reducing costs associated with storage and handling of materials. There are several reasons for managing inventory. Excessively stock could result in funds being tied down, increase in holding cost, decline of materials, obsolescence and theft. On the other hand, deficiency of materials can lead to interruption of products for sales, poor customer relations and underutilize machines and equipment. Inventory management also becomes a important part of supply chain management (SCM). A lot of research in SCM over the last two decades can be characterized as so called "multi-echelon inventory theory".

Dimitrios (2008) defined inventory as a stock of goods that is kept by a business in anticipation of some future request. This definition was also supported by Steven (2017) who stressed that inventory management practices has an impact on all business functions, particularly operations, marketing, accounting and finance. He established that there are three motives for holding inventories, which are transaction, precautionary and speculative motives. The transaction motive is said to occur when there is a need to hold stock to meet production and sales requirements. A firm might also decide to hold extra amounts of stock to cover the possibility that it may have under estimated its future production and requirements. This represents a precautionary motive, which applies only when future demand is uncertain. The speculative motive for holding inventory might entice a firm to purchase larger quantity of material than normal in anticipation of making abnormal profits. Advance purchase of raw materials in inflationary times is one form of speculative behaviour,(Serhil, 2015)

It is Inventory management, in an organization, that deals with identifying every items of stock. Inventory management is primarily about specifying the size and placement of stocked goods. Inventory management is required at different locations within a facility or within multiple locations of a supply network to protect the regular and planned course of production against the random disturbance of running out of materials or goods. Effective

inventory management determined how profit of an organization can be maximized. Maximizing of profit depend on minimizing cost and maximizing revenue,(Timothy, Patrick, Nebat & Raja 2016) Maximization is an efficient concept which requires increasing profit without increasing the resources used.

The import of inventory management in organization is to ensure that at any point in time the capital of the business is not necessarily tied down in form of material in the store, which may provide opportunity for fraud and theft. In other word, the management wishes to put at minimal rate stock losses, which emanate from store operation. Thus, as business organization,stock is of paramount importance, likewise the profit of the business. Inventory problems of too high or toosmall quantities on hand can cause business failures. If a small business experiences stock-out of a critical (Vinod, 2011)

Inventories are vital to the successful functioning of manufacturing and retailing organizations. They may consist of raw materials, work-in-progress, spare parts/consumables and finished goods. They constitute a substantial proportion of the current assets of an organization.

According to Udeh (2016), inventory is the stock of goods a firm is producing for sale and the components that make up the goods. (Ashok, 2013.). Memba and Njeru (2016) defines inventory as an itemized list of goods or valuables with their esteemed worth, specifically, the annual accounting stock taken in any business.Inventories are held because of the benefits the firm derives from them, but there are also some costs associated with holding them. For this reason, they should be held at optimal levels. That is, at a level where the marginal return is exactly off set by the marginal cost of funds required to finance the increase in inventory (Namusoke, 2011). Hence the necessity of an effective inventory management technique.

Inventory management involves the coordinating of materials, availability, controlling, utilizing and procuring of materials which may include raw materials, work-in-progress, finished goods and supplies held by a business organization to facilitate operations in the production process. Amahalu and Ezechukwu (2017) define inventory management as the use of various techniques to optimize levels of all types of stock, raw materials, work-in-progress and finished goods.

Inventory control can be done through introduction of different measures so as to prevent the company from incurring unnecessary losses made by different departments measures which can be put in place for example stock-taking which is the accounting of stock at every end of the month, so as to record the lost and available stock, making proper supervisions on sites during construction of buildings so to avoid theft of materials by workers. The company should set up strict rules to procurement officers and store managers which they should follow during purchasing and storing of material so as to avoid loss of inventory in the company (Amahalu, Nweze, Nwere & Obi,2018).

Inventory management is necessary at different locations within an organization or within multiple locations of a supply chain to prevent the organization from running out of materials or goods or from holding too many inventory thereby incurring additional costs. Adequate inventories kept in manufacturing companies will smooth the production process,(Dimitri, Uiia-yi,2014)..

The firm'sperformance can easily be enhanced with the help of an effective inventory management system in place. Improvement in firms performance as a result of making profit due to cost minimization and revenue maximization,(Kwadwo, Boateng & Prempeh,2015). This can be achieved with the aid of an effective inventory management practice technique. An effective inventory management will improve an firm's performance especially now that most organizations operate in more competitive industries and sectors all over the world. However, firm have ignored the potential savings from proper inventory management, treating inventory as a necessary evil and not as an asset requiring management. As a result effective inventory management systems are based on arbitrary rules (Timothy et al 2010). This project evaluates the effective inventory management practice and firm.sl performance in selected consumable goods firms in Nigeria.

II. Statement of the problems

Due to the current instabilities in the economy of Nigeria, consumable goods firms are faced with the extreme changes in customers' demands for their products. This problems needs to be solved and information necessary to find the solution stock out which to be discussed before undertaking any projects.A company will ideally wantto have enough stocks to satisfy the demand of its customers. On the other hand the company does not want to have too much inventory staying on hand because of the cost of carrying inventory. The implications are: Out of stock of critical material leading to hasty buying because of low stock levels, i.e. difficulties in determiningaverage amount of stock necessary to satisfy production requirement, suggested by Okoye et al 2016. Unnecessary tying down of funds as wellas loss of fund due to pilferage, spoilage and obsolescence of stock

maintain of too low inventories so as to meetdemand as at when needed.High cost of materials purchased and rate of wastage are also main concerns that affect organizationsproductivity, sales and profitability.

The concern is not only to shareholders but also to management and the growth of the nation. How the effective inventory policy affects the firm's performance, with size as control variable has not been determined within or outside the Nigerian context. This statement of problem may be examined through an assessment of the effective inventory management practice on firm performance within the selected firms.

The above statement of problem calls for more academic research or investigation and assessment to bring more about the reliable ideas and findings regarding topic in selected Nigerian consumable goods firms

III. Research Questions

1. To what extent does relationship exist between effective Inventory management practice (EIMP) and the Return on capital employed (ROCE) in selected consumable goods firms listed on Nigeria stock Exchange.?
2. To what extent does effective Inventory management practice (EIMP) have effect the Return on investment (ROI) in selected consumable goods firms listed on Nigeria stock Exchange.?

Objectives of the Study

1. To examine the relationship exist between effective Inventory management practice (EIMP) and the Return on capital employed (ROCE) in selected consumable goods firms listed on Nigeria stock Exchange.
2. To investigate whether relationship exist between effective Inventory management practice (EIMP) and Return on Investment (ROI) in selected consumable goods firms listed on Nigeria stock Exchange.

Hypothesis 1

Ho1: There is no significant relationship between effective Inventory management practice (EIMP) and the Return on capital employed (ROCE) in selected consumable goods firms listed on Nigeria stock Exchange..

Hypothesis 2

Ho2: There is no significant effect between effective Inventory management practice (EIMP) effect and the Return on investment (ROI) in selected consumable goods firms listed on Nigeria stock Exchange.

IV. Literature Review

The Concept of Inventory Management

Installation of a proper inventory control system in any organization in developing countries like Nigeria is ofparamount necessity. Inventory management is defined as a science based art of ensuring that just enoughinventory stock is held by an organization to meet demand (Edwin & Florence, 2015). Inventory isthe availability of any stock or resources used in an organization. Inventory systems is the set of policies thatcontrols and monitor inventory level and determine what level should be maintained, how large an order shouldbe made and when stock should be replenished. Inventory control is the supervision of the storage, supply andaccessibility of items to ensure an adequate supply without excessive oversupply.Inventory control means availability of materials whenever and wherever required by stocking adequatenumber and kind of stocks. The sum total of those related activities essential for the procurement, storage, sales,disposal or use of material can be referred to as inventory management. Inventory managers have to stock-upwhen required and utilize available storage space resourcefully so that available storage space is not exceeded,(Ezeagba, 2001)

Maintaining accountability of inventory assets is their responsibility. They have to meet the set budget anddecide upon what to order, how to order and when to order so that stock is available on time and at the optimumcost (Anichebe & Agu, 2013). Hence, Inventory management involves planning organizing andcontrolling the flow of materials from their initial purchase unit through internal operations to the service pointthrough distribution (Syed et al 2016).

Inventory constitutes one of the largest and most tangible investments of any retailer or manufacturingorganization. Intelligent inventory management strategies can not only help boost profit but they can mean thedifference between a business thriving or barely surviving. Holding inventories at the lowest possible cost andgiving the objectives to ensure uninterrupted supplies for on-going operations is the aim of inventorymanagement. When making decisions on inventory, management has to find a compromise between the differentcost component, such as the cost of supplying inventory, inventory holding cost and cost resulting fromsufficient inventories (Thogon and Jane , 2014; Serhil, 2015). According to Ryon (2017), inventory control isthe activity which organizes the availability of item to the customers. It coordinates the purchasing,manufacturing and distribution functions to meet the marketing needs.

This role include the supply of current sales items, new product, consumables, spare parts, obsolescentitems and all other supplies. Inventory enables a company to support the customer's services, logistics

ormanufacturing activities in situation where purchasing or manufacturing of the items is not able to satisfy thedemand. Inventory plays an ineligible row in the growth and survival of an organization in the sense that failureto an effective and efficient management of inventory, will mean that the organization will lose customers andsales will decline. In other to attain its organizational objectives, a business is to meet customer's needs.Customer desire has always been a vital issue in a company not only to maintain sales but also to increase it(Abiahu, 2017; Ezechukwu & Amahay, 2017).

Vessils (2020), posits that inventory management refers to all theactivities involved in developing and managing the inventory levels of raw materials, semi-finished materials(working-in-progress) and finished good so that adequate supplies are available and the costs of over or understocks are low.Inventory management is primarily about specifying the size and placement of stocked goods.Inventory management is required at different locations within a facility or within multiple locations of a supplynetwork to protect the regular and planned course of production against the random disturbance of running out of materials or goods.

The scope of inventory management also concerns the fine lines between replenishment lead time, carrying costs of inventory, asset management, inventory forecasting, inventory valuation, inventoryvisibility, future inventory price forecasting, physical inventory, available physical space for inventory, quality management, replenishment, returns and defective goods and demand forecasting. Balancing these competing requirements leads to optimal inventory levels, which is an on-going process as the business needs shift and react to the wider environment (Timothy, Patrick,Nebat & Virgina 2013)..

Firm's Performance is a general measure of a firm's overall achievement over a given period of time and which can be used as basis for comparison between difference period of time and among similar firms in the same industrial sectors. Firms performance confirms the financial stands and it is a pointer to the financial soundness and productivity of an organisation, (Egbunike, 2007).

The essence of assessing the firms performance is to provided useful information to various organizational stakeholders. Organizational stakeholders are in myriad of numbers ranging from trade creditors, bond holders, lenders, investors, employees to management and each stakeholder has varying degrees of information needs that prompts them to keep tracking the performance of a company. Firm's performance can be evaluated or computed with different method however each measure draws or depicts the diverse part of financial performance,(Dimitrios, 2008) Financial performance implies general financial wellbeing of an organisation over a given timeframe. Financial performance analysis is the way toward deciding the working and financial attributes of a firm from financial statements and it is being measured as return on assets in this study using accounting figures,(Adeniyi, 2009).

Inventory Control: The term inventory according to Amahalu et al. (2018) consists of idle physical goods/stock of high economic value held by organizations for packaging, processing or ready for sale. The nature of inventory held by organizations together with their economic values varies from one organization to the other. That is, inventory held by an organization in form of finished goods may serve as input to other organizations. Kwadwo, Boateng and Prempeh (2015), defined inventories as stocks of raw materials, semi-finished goods and finished goods held by business organizations to facilitate smooth production process. Ashok (2013) approached the definition of inventory from accounting perspective which he explained to mean the totality of all items of tangible property which are held by firms for sale in the ordinary course of the firms' business, for further production for such sale and processed to be made available for sale.

V. Theoretical Review

Lean Inventory Theory

This theory was developed in Arsenal in Venice in the 1450s by Henry Ford as a result of his thoughts on integrated manufacturing process. Lean inventory theory which is an extension of Just-in-Time is an inventory control philosophy which emphasized that organizations should maintain minimum inventory in line with the requirement of production process (Edwin & Florence, 2015). Lean inventory theory was pioneered by Womack (1990) which was based on the principle of maintaining reduced inventories in organization. The argument in favour of reduced or lean inventory system is that it leads to improvement in company's profitability owing to reduction in inventory carrying costs. Lean inventory theory focuses on cost minimization in organizational inventory system by taking decisions centered on manufacturing, warehousing and general supply chain (Egbunike, 2007).

According to Njeru (2016) the theory (Lean) tends to build on the postulation of Economic Order Quantity (EOQ) which seeks to optimize the quantity of inventories by determining the appropriate quantities of inventory to order per time. From the foregoing, the theory brings to the fore, the possibility of being dynamic in manufacturing and operating system used to monitor inventory level as well as various items of inventories that may require

different treatment. In a highly competitive environment, lean inventory theory helps firms to gain competitive advantage, capture larger market shares and make more profit since carrying excess inventories negatively affects firm's net cash flow (Lydiah, 2016). The lean inventory theory was adopted to give theoretical explanations to the subject matter of this study. This choice is informed by the need to examine how inventory control influences organizational performance thereby calling for a prudent approach to inventory control. Also, it helps organizations to improve the return on investment of a business through reduction in inventory held by firms and its associated carrying costs,(Steven, 2017)

VI. Empirical Review

Ryan (2017), examined the impact of materials management on profitability of Nigeria brewing companies using a sample size of 368 companies. The study used questionnaire and oral interviews to collect data. The study established that materials procurement and storage has significant effect on profitability of brewing companies. The study also found that materials inventory has a significant contribution to profitability of brewing companies; and that interdepartmental collaboration significantly contributed to the profitability of brewing firms. The study concluded that effective materials management is indispensable to brewing firms in making profits.

Okoye, Amahalu ,Nweze and Obi (2016) studied the relationship between inventory and financial performance in manufacturing companies. The researchers studied 52,254 businesses for a period of 25 years between 1980 and 2005; they used multiple regressions to determine the correlation between financial performance and various inventory levels. They measured financial performance using gross profits and operating profit results and Inventory levels in regard to raw materials, partially manufactured products, and finished products. The results revealed a positive correlation between a company's inventory management and its financial performance. Theyalso noted that Degrees of correlation vary depending on the type of inventory and the financial performance.

Thogon and Jane (2014) investigated the association between inventory management policies and the financial performance of affirm. The purpose of the study was to assess the impact of inventory management practices on financial performance across the period 1992- 2002.They used conventional firm specific variables (inventory levels, margins, and lead times) as explanatory variables. They found no evidence that smaller relative levels are associated with financial performance as measured by return on assets.

Dimitrios, (2008), examined inventory management and role it plays in improving customer satisfaction. He found a positive relationship between customer satisfaction and supplier partnerships, education and training of employees, and technology

In Greece, Ashok,(2008), studied the effect of inventory management on firm performance in manufacturing firms operating in three industrial sectors in Greece, food textiles and chemicals were used in the study covering 2000 – 2007 period. The hypothesis that lean inventory management leads to an improvement in a firm's financial performance was tested. The findings suggest that the higher the level of inventories preserved (departing from lean operations) by a firm, the lower the rate of return. In conclusion, most of the studies reviewed concentrated on conventional firm level variables such as inventory levels, demand and lead time

VII. Methodology

Research Design

This study employed both field and empirical survey research design. Field survey research design was employed because of the nature of data required to measure both dependent and independent variables. The information about the inventory management, use of new technology method in controlling inventory within organisation, this could be derived both primary and secondary source , thus, the need for the adoption of primary source of data through administration of structured questionnaire. The choice of the research design is consistent with the studies of Olusakin, (2015); Syed et al., (2016); Ryan (2017). Empirical survey (expost facto) design was adopted to confirm the results obtained through the primary data and thus inventory control was measured as inventory turnover period andsecondary source (annualreports of each selected consumable goods firms),

Population, Sample Size and Sampling Technique

The scope of this study was the listed consumable goods firms in Nigeria. According to the Nigerian Stock Exchange records; only six (4) consumable goods out of 21 firms listed as at 31st December 2019; thus this represent the population of this study. The choice of the consumable goods firms was determined due to the volume of stockused by these firms based on their nature and size. All the 80 staffs of the selected consumable goods firms whose job description are related to inventory management were considered as respondents for this study. All the six (4) listed conglomerate firms were used for the analysis carried out using secondary data. Total enumeration sampling technique was adopted for the secondary data analysis while the study selected 20 employees from each of

the four (4) consumable goods firms as respondents for the administration of the structured questionnaire (primary data source); this, totalled 80 respondents. The (20) employees were selected each firms purposively as employees whose duties are directly related to inventory control were selected as respondents.

Data Collection Instrument Administration

This study made use of both primary and secondary sources of data. The primary data were generated through the administration of structured questionnaire to the selected respondents. The respondents were 20 employees of each of the 4 consumable goods firms at their main offices located in Lagos and abuja. The secondary data were obtained from audited annual reports and accounts of all the six (4) listed consumable goods firms for a period of 10years (2009-2019).

Method of Data Analysis

The data obtained from the administered questionnaire were coded and analysed using percentages and multiple regression analysis with the aid of Excel and E-views 11.0 software. While, simple linear regression model was used in investigating the effect of effectiveinventory management practice on firms performance to document the reports obtained from the analysis using primary data. The post-estimation tests were carried out; they are the heteroskedasticity test, and the serial correlation test to certify that the model suitably stated for the estimation and to avoid biased results. The analysis of the secondary sourced data was carried out with the aid of Stata IC. 11.0

Sampling Method and Samples Size

Four (4) quoted Nigeria consumable goods firms were selected from twenty one (21) selected firms on Nigeria Stock Exchange, during the ten years period of 2009 – 2019. This study in addition utilized other materials especially company Annual Audited Financial Statement Reports with the use of Slovin formular (cited Asalu, Agorize & Unan, 2012). The formular is given thus:

$$n = \frac{N}{1 - N\,(e)^2}$$

Where

n = Sample size

N = population size

e = margin of error (MOE) or level of significant (LOS) at 5% Slovin formular is used in statistical analysis as a tool to determine the sample size of a population that must be taken for a specific study.

Model Specification and Measurement of Variables

Model Specification

This study examined the effect of effective inventory management practice on the firms performance of listed consumable goods firms in Nigeria.

The modified model for this research is:

Model 1: Examine the relationship exist between effective Inventory management practice (EIMP) and the Return on capital employed (ROCE) in selected consumable goods firms listed on Nigeria stock Exchange.

$ROCE = f(VSC\ IPC, IUM, FS)$…… Equation 3.1

$ROCE_{it} = \beta_0 + \beta_1 VSC_{it} + \beta_2 IPC_{it} + \beta_3 IUM_{it} + \beta_4 FS_{it}\,\varepsilon_{it}$ …….. Equation 3.2

$ROCE_{it} = \beta_0 + \beta_1 VSC_{it} + \beta_2 IPC_{it} + \beta_3 IUM_{it} + \beta_4 FS_{it} + U_{it}$ …… Equation 3.3

$ROCE_{it} = \beta_0 + \beta_1 VSC_{it} + \beta_2 IPC_{it} + \beta_3 IUM_{it} + \beta_4 FS_{it} + \sum_{i=1}^{4-1} \mu_i DUM + \varepsilon_{it}$… Equation 3.4

Where;

$ROCE$ = Return on Capital on Employed (a firms' performance indicator)

VSC = Value of Stock Carried (a effective inventory management practice indicator)

IPC = Inventory Procurement control (a effective inventory management practice indicator)

IUM = Inventory Usage Management (a effective inventory management practice indicator)

FS = Firm's Size (as firm's characteristic indicators)

$U_{it} = \alpha_i + \varepsilon_{it}$ is often called the composite error Random Effect Model (REM)

DUM = Firms' unobservable effect in Fixed Effect Model (FEM) and μ is the dummy coefficient

β_0, β_{1-4} and ε are as described earlier. The subscript i represents the entity of each quoted company at the time$t$, while subscriptrepresents the year.

The modified model for this research is:

Model 2 :.To investigate whether relationship exist between effective Inventory management practice (EIMP) and Return on Investment (ROI) in selected consumable goods firms listed on Nigeria stock Exchange

$ROI = f(VSC\ IPC, IUM, FS)$…… Equation 3.5

$ROI_{it} = \beta_0 + \beta_1 VSC_{it} + \beta_2 IPC_{it} + \beta_3 IUM_{it} + \beta_4 FS_{it}\,\varepsilon_{it}$ …….. Equation 3.6

$ROI_{it} = \beta_0 + \beta_1 VSC_{it} + \beta_2 IPC_{it} + \beta_3 IUM_{it} + \beta_4 FS_{it} + U_{it}$ …… Equation 3.7

$ROI_{it} = \beta_0 + \beta_1 VSC_{it} + \beta_2 IPC_{it} + \beta_3 IUM_{it} + \beta_4 FS_{it} + \sum_{i=1}^{4-1} \mu_i DUM + \varepsilon_{it} \ldots$ Equation 3.8

Where;

ROI= Return on Investment (a firms' performance indicator

Findings

This study examined the relationship between inventory control management system and organizational performance in four selected consumable goods firms.Its major objectives were investigated on how flexible inventory services will helpthose firms from keepingtoo much and too little inventory. These objectives were guided by two research questions and two null hypotheses. Theresearcher questions and hypothesis were linked to existing theories and views on inventory control management. Data for examining the research hypothesis were obtained through questionnaires administered to sample of 80staff respondents of from those firms under study. The data collected were adequately analyzed and presented in tabular forms, and accurate interpretation drawn from them. Both the descriptive and inferential statistical techniques were used in the analysis of the data and testing the hypothesis at 0.10 significant levels. The finding that emerged from the study showed a significant relationship between effective inventory control management system and organizational performance

Table 1:**Respondents perception on significant relationship between Effective Inventory Management practice and Return on Capital Employed**.

RESPONE	Fo	Fe	Fo-Fe	$(Fo-Fe)^e$	(Fo- Fe)e Fe
Strong Agree	16	15.0	1.0	1.0	0.067
Agree	33	15.0	18.0	324	21.60
Disagree	8.0	15	-7.0	49.0	3.27
Strong Disagree	3	15.0	-12.0	144	9.60

Computed,=,33.83,Confidence,level=90%X^2 = 34.54

Source: Field Survey, 2020

.Tabulated value of under three degree of freedom and 90% confidence level is 6.25. According to the result obtainabove found that inventory management can minimize expected working capital expended

The result that emerged from the analysis of data gathered to answer research questions revealed some of the reasons why organization evolve effective inventory management practice are include the need to smoothen operational requirements, the need to maintain accountability and transparency and the need to optimize turnover from theresources.Available within organization .Also, meeting up operational requirement or keeping operations running have been identified as the major reason for keeping effective inventory management practice.

The study also found out that inventory procurement management is an important approach to achieving firm's performance. Such inventory services are associated with minimizing stock holding cost, minimizing waste and encouraging high inventory utilization. This view is supported by Anichebe and Agu (2013), who asserted that effectiveinventory utilization is an important indicator of management economy, efficiency and effectiveness. Upton (1994) believed that adopting inventoryprocurement managementpractice by the firms enhances the competitive position of the firm and may impact on its overall profitability.

Mutunet al (2015) avers that fundamental relationship exist betweeninventory procurement management practiceandfirm's performance. Thus, the higher the level of inventory procurement management practice, the higher the performance of firms. By implication, the inventoryprocurement control practice have positive influence on firm's performance via its positive impact on return on investment.

In addition, it was found that organizations benefits from effective inventory management practice by improved return on capital employed ,return on investment and return on equity, due to cost reduction is at the centre of any inventory control system. One of the objectives of effective inventory control system is to make sure that the firm does not hold much stockthan is necessary, thereby incurring holding cost. Therefore, the rationale behind optimum stock level is to make sure thatcost is kept as low as possible. Improving sales effectiveness hinges on the ability of the firm to meet with the demand requirement of the customers. The study also revealed that there is a relationship between effective inventory control and organizational performance. Inventory control management as pointed out contributes in different ways to improving performance. By reduction in cost, increase in profitability, improvement in sales efficiency, achievement of optional resources wages, waste reduction, meeting operational requirement etc. inventory control is found to be impacting positively on firms performance

Table 2 **Respondents perception on significant relationship between effective inventory management practice and return on Investment.**

RESPONE	Fo	Fe	Fo-Fe	$(Fo-Fe)^e$	$\frac{(Fo-Fe)^e}{Fe}$
Strong Agree	18	15.0	3.0	9.0	0.60
Agree	31	15.0	16.0	256	17.07
Disagree	9	15	-6.0	36.0	2.40
Strong Disagree	2	15.0	-13	169	11.30

ComputedX=33.8, Confidence level = 90%X^2 = 31.37

Source: Field Survey 2020

Inferential Statistics

VIII. Correlation Matrix

This section presents the results of preliminary correlation analyses among the variables. The first purpose is to determine whether there is a bivariate relationship between each pair of the dependent and independent variables considered in this study. The second is to ensure that the correlations among the explanatory variables are not so high to the extent of posing multi co- linearity problems.

The result in Table 3, below shows that positive and significant association exists between ROCE and ROI (r = 0.7063). Similarly, positive correlation was seen between ROI and IUM (r = 0.8019) and ROCE and FS (r = 0.3903). The result revealed that a weak positive relationship exists between ROI and IPC (r = 0.3560) and between ROI and FS (r = 0.4210).The correlation between ROCE and IPC (r = 0.5811) as well as between ROCE and IUM (r = 0.5019) were positive and significant at 5% level of significance. The association between VSC and IPC was shown to be positive (r = 0.5370) which is analogous to the relationship between VSC and FS (0.4332). Furthermore, results show the there is a positive association between VSCand IUM (r = 0.7010). The correlation between IPC and FS was also positive and significant (r = 0.4310). On the contrary, IPC was seen to have a weak, negative and significant association with IUM (r = -03400.) also, there was weak positive and significant relationship between VSC and IPC (r=0.3267.The correlation between ROI and VSC (r = 0.5212) as well as between ROCE and VSC (r = 0.5370) were positive and significant at 5% level of significance. Results also show that there was a positive and significant relationship between IUM and FS (r = 0.6750)

Table 3: Correlation Matrix

	ROCE	ROI	VSC	IPC	IUM	FS
ROCE	1					
ROI	0.7063*	1				
VSC	0.5212*	0.5370*	1			
IPC	0.5810*	0.3560*	0.3267*	1		
IUM	0.5019*	0.8019*	0.7010*	-0.3400*	1	
FS	0.3903*	0.4210*	0.4332*	0.4310*	0.6750*	1

Source: Field Survey 2020

Table 4:OLS Regression Analysis testing the relationship between VSC, IPC, IUM, FS and ROCE

Source | SSdf MS Number of obs = 49
---------+---------- F(3, 45) = 3.30
Model | 60.2022383 3 20.0674128 Prob > F = 0.000
Residual | 273.797762 45 6.0843947 Adj R-squared = 0.6056

Total | 334 48 6.95833333 Root MSE = 2.4667
roce| Coef.Std. Err. t P>|t| [95% Conf. Interval]

---------+---
vsc | .0562518 .5724483 3.10 0.001 -1.096718 1.209222
ipc | .0104567 .1503844 0.07 0.004 -.2924335.3133463
ium. 4456941 .1482474 3.01 0.002 -.7442648 -.1471234
fs |- 0.1211532 .7531096 4.700.0009.60431312.63799
---------- Source: **Source** : Researcher's computation using STATA 13, 2020.

Interpretation of Regressed Result

The regressed coefficient correlation result in table 3 shows a positive relationship between VSC (β1=0.0562518), IPC (β2=0.0104567), IUM(β3=-0.4456941). and ROCE, while a negative relationship exists between ROCE and FS (β3=-0.1211532)and statistically significantly at 5% as depicted by the probability values of the slope coefficient; P(x1=0.001<0.05; x2=0.004<0.05; x3=0.002<0.05). The coefficient of determination obtained was 0.60 (60%), which is commonly referred to as the value of adjusted R2. The cumulative test of hypothesis using adjusted R2 to draw statistical inference about the explanatory variables employed in this regression equation, shows that 60% of the systematic variations in the dependent variable can be jointly predicted by all the independent variables while 40% was explained by unknown variables that were not included in the model.

Conclusion:

The P-value of EIMP (0.000) is less than the critical value 0.05. In view of the rule of thumb, H1 will be accepted and H0 rejected. Thus, EIMP has a significant positive relationship with ROCE of consumable goods firms in Nigeria at 5% significant level.

Test of Hypothesis I

Ho1: There is no significant relationship between effective Inventory management practice (EIMP) and the Return on capital employed (ROCE) in selected consumable goods firms listed on Nigeria stock Exchange.

In view of the rule of thumb, H1 will be accepted and H0 rejected. Thus,

H1: There is significant relationship between effective Inventory management practice (EIMP) and the Return on capital employed (ROCE) in selected consumable goods firms listed on Nigeria stock Exchange. .

Table 5:OLS Regression Analysis testing the relationship between VSC, IPC, IUM, FS and ROI

Source | SSdf MS Number of obs = 49
---------+---------- F(3, 45) = 3.30
Model | 60.2022383 3 20.0674128 Prob > F = 0.000

Residual | 273.797762 45 6.0843947 Adj R-squared = 0.5056

Total | 334 48 6.95833333 Root MSE = 2.4667
roce | Coef.Std. Err. t P>|t| [95% Conf. Interval]

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vsc | .0571071 .5724483 3.10 0.023 -1.096718 1.209222
ipc | .0357108.1503844 0.07 0.844 -.2924335 .3133463
ium . 5103365 .1482474 3.01 0.002 -.7442648 -.1471234
fs | - 0.2136511 .7531096 4.70 0.0009.60431312.63799

Source: Researcher's computation using STATA 13, 2020.

Interpretation of Regressed Result

The regressed coefficient correlation result in table 3 shows a positive relationship between VSC (β1=0.0571071), IPC (β2=0.0357108), IUM(β3=-0.5103365). and ROI while a negative relationship exists between ROCE and FS (β3=-0.2136511)and statistically significantly at 5% as depicted by the probability values of the slope coefficient; P(x1=0.023<0.05; x2=0.844<0.05; x3=0.002<0.05).). The implication is that EIMP has a positive significant relationship with ROI at 5% significant level; IPC is positively but non-significantly related with ROI, while has a positive relationship with ROI at 5% significant level The coefficient of determination obtained was 0.50 (50%), which is commonly referred to as the value of adjusted R2. The cumulative test of hypothesis using adjusted R2 to draw statistical inference about the explanatory variables employed in this regression equation, shows that 50% of the systematic variations in the dependent variable can be jointly predicted by all the independent variables while 50% was explained by unknown variables that were not included in the model.

.**Conclusion:**

The P-value of EIMP (0.000) is less than the critical value 0.05. In view of the rule of thumb, H1 will be accepted and H0 rejected. Thus, EIMP has a significant positive relationship with ROI of consumable goods firms in Nigeria at 5% significant level.

Test of Hypothesis II

Ho1: There is no significant relationship between effective Inventory management practice (EIMP) and the Return on investment (ROI) in selected consumable goods firms listed on Nigeria stock Exchange

.In view of the rule of thumb, H1 will be accepted and H0 rejected. Thus,

H1: There is significant relationship between effective Inventory management practice (EIMP) and the Return on investment (ROI) in selected consumable goods firms listed on Nigeria stock Exchange. .

IX. Conclusion and Recommendations

The study concluded that effective Inventory management practice (EIMP) is essential in the operation of any business effective Inventory as an asset on the balance sheet of companies has taken on increased importance because many firms are applying the strategy of reducing their investment in fixed assets, like plants, warehouses, equipment and machinery, and so on, which even highlights the significance of reducing inventory.

From the financial performance tables, there are varied growth pattern for every firm. Specific performance indicators have been proved to depend on the level of inventory management practices.

The study of inventory management in brewery industry for the respective period (2009-2019) leads to the conclusion that effective inventory management performance was satisfactory. Return on Capital Employed toward theFirm's Growth and Return on Investment are positively correlated with the . This means that by shortening ICP, firms‟ profitability improves.

The study also concludes that increase in financial performance indicators which denote the financial performance measurements enrich the firm'seffective Inventory management practice (EIMP) levels, which pushes profits upwards due to optimal inventory levels. It is also noted that firms effective inventory management practice systems must maintain an appropriate inventory levels to enhance turnover and minimize the inventory costs associated with value of stock carried cost, inventory usage waste, inventory procurement cost and holding excessive stock in the warehouses.

This study is thereforeRecommended that :

1. Consumable goods firms should develop a policy framework to facilitate faster implementation of the besteffective Inventory management practices (EIMP) such as value of stock carried cost, minimizing inventory

usage wastage, and minimizing inventory procurement cost to enhance the return on capital employed of such firms.

2. Consumable goods firms should consider investing in modern technology and implement Electronic Data interchange (EDI). This will reduce all related inventory costs and improve returns, thereby, improving the growth of firm.

3. Since EIMP has a positive and non-significant relationship with ROI, it is recommended that top management should emphasis on the proper inventory management techniques and measuring of efficiency deviations to identify weaknesses in the process of managing inventories.

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