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Research Paper

Review Of International Accounting Standards (Ias) 2 And Performance Of Selected Manufacturing Concerns In Nigeria

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ABSTRACT
The concept of IAS 2 on inventory control is indispensable going by their impact in contributing to and promoting total quality management towards ensuring efficiency and effectiveness in any organization. In actual practice the vast majority of manufacturing companies suffer excessive inventories inadequacies than are necessary. Therefore, inventory control process is much more complex and challenging than one could imagine. In fact, inventory control is more than a clerical function. This has resulted into lots of material shortages, high costs and loss of profit. This study provides the basis for implementing inventory control policies by manufacturing firms in conformity with IAS 2. The methodology adopted for the study was ex-post facto research design and the population was based on selected manufacturing companies on the Nigerian Stock Exchange (NSE). Secondary data was obtained from annual reports of the companies under study. Correlation analysis was used to determine the nature and magnitude of the relationship among inventory management variables. The result revealed a positive correlation between inventory management and profitability which was found to be statistically significant at 5% level. The study concluded on the optimization path of inventory control that enhances earnings. It therefore recommends on the constant need for management to elicit a transparent picture and reportage of inventory and it's eventual influence on performance.

Keywords: *Inventory, Nigerian Stock Exchange, Optimisation, Performance, Quality*

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I. BACKGROUND TO THE STUDY

There is a growing emphasis on the importance of inventory management in the attainment of organizations goals and objectives. In manufacturing companies where stock of raw materials and other component parts consists of many different items, the task of engendering stock management on every individual item is obviously difficult if not impossible. IAS 2 which majorly center on inventories states that an entity should use the same method in measuring all its inventories having similar nature and use to the entity. IAS 2 (Inventories) is one of the contemporary issues as it pertains to the manufacturing concerns owing to its sensitivity and the manner in which managers of organizations often exploited the subject to suit their reporting quest in a bid to win the confidence of shareholders in particular and the stakeholders at large.

According to Ezeani (2010), many reports of overvaluation of stock, price manipulation, profit overstatement, and accounts falsification by some mischievous stewards often rendered financial reporting ineffective. The business failures of the past decade however, have been closely associated with corporate governance failure of stock overvaluation, malfeasance, which involves a number of parties, management, Board of Directors, auditors and some investors. Many business organizations have often been connected with frauds of inventory mismanagement leading to insolvency and eventual collapse. Accounting scandals like Enron of USA, World Com of USA, Parmalat of Italy, Tyco of USA, Cadbury Nigeria, Unilever Nigeria etc. have cost not only billions of dollars to stakeholders but also dented the accounting profession's image as a result of financial mis-representation. Most of the standards set for the accounting (Audit) report have been eroded.

For instance Cadbury scandal (2006) bothered on the over valuation of stock which was a major departure from the corporate governance ethics that is required to be upheld. According to Osisioma and Enahoro (2006), accounting processes and choice of policies resulting from many judgments at the same time

are capable of manipulation, which have resulted in creative accounting. The differences which are observed in financial reporting are legitimately prepared from choice of varied accounting policies of the same organization for the same period and has brought about challenges of credibility to accounting practice. It is upon this backdrop that the study intends to identify the overall impact of proper and accurate management of stock items together with the recording and monitoring of stock level devoid of doctoring or smoothing, forecasting future demand or production run and deciding when and how to place the order and how many inventory to carry per unit of item in order to satisfy the needs and wants of potential customers on one hand and ensuring business returns on the other hand.

1.1 Objectives of the Study

The general objective of this study is to examine the inventory management as per IAS 2 and performance of manufacturing company. While the specific objectives of the study are:

(a) To determine the effect of inventory conversion period on the profitability of manufacturing company in conformity with IAS 2

(b) To examine the effect of inventory management on the profitability of manufacturing company in conformity with IAS 2

(c) To examine the moderating effect of age and firm size on the relationship between inventory management and performance in conformity with IAS.

1.2 Research Questions

The research questions are:

(i) Does inventory conversion period have any effect on the profitability of manufacturing company in conformity with IAS 2?

(ii) Does inventory management enhance profitability in conformity with IAS 2?

(iii) What is the moderating effect of age and firm size on the relationship between inventory management and performance in conformity with IAS?

1.3 Research Hypotheses

For the purpose of this study, the hypotheses formulated are:

Hypothesis One

H_{O1}**:** Inventory conversion period does not significantly affect the profitability of manufacturing company.

Hypothesis Two

H_{O2}**:** Inventory management does not significantly enhance the profitability of manufacturing company.

Hypothesis Three

H_{O3}**:** There is no significant relationship between the moderating effect of age and firm size on the relationship between inventory management and performance of manufacturing company

II. CONCEPTUAL REVIEW

2.1.1 Inventory Conversion Period

Inventory refers to the stock of resources that possess economic value, held by an organization at any point in time. These resources stocks can be manpower, machines, capital goods or materials at various stages of production. Inventory conversion period is simply the ratio of the closing inventory to the cost of sales with cognizance to the number of days in the year which is 365 days. In order to holistically x-ray inventory conversion period, there is the need to make recourse to inventory management. Inventory management refers to keeping or maintaining the firm's stocks at a level that a firm will only incur the least cost consistent with other management's set objectives or targets (Kwadwo, 2016). Inventory management is about ensuring that all input materials of production available to the firm are maintained at a level where production is not interrupted as well as ensuring that operational cost is kept at a minimal level without affecting operation efficiency (Eneje, Nweze, &Udeh, 2012). Inventory management entails planning, organizing, controlling and directing. All these coordinated efforts are meant to ensure the attainment of efficiency in all operations of the firm. Such operations may include procurement, stocking and transportation (Akindipe, 2014). Mismanagement of Inventories may lead to significant financial problems for a firm (Muhayimana, 2015).

Inventory management is of immense value in financial management decision. This is because excess or shortage of this may bring danger to the company (Duru, Oleka & Okpe, 2014). The objective of inventory management is to maintain a system that minimizes total cost, while establishing that the amount of stock to be ordered is optimal as well as the period between orders (Anene, 2014). Excess inventory consumes a lot of space, ensures susceptibility to spoilage leading to financial burden and loss while insufficient inventory has the potential of interrupting business operations (Swaleh & Were, 2014).

Inventory management is vital and needed in various areas within the firm especially in a supply network so as to protect production against any disturbance of running out of production inputs or materials and goods (Ogbo, Onekanma &Ukpere, 2014). Management of Inventory is crucial to a firm since it plays a decisive role to enhance efficiency and improve the firm's competitiveness ability against the firm's competitors. Effective inventory management is all about holding the right amount of inventory required by the business at any point in time (Swaleh & Were, 2014). Inventory management involve creation of a purchasing plan which will help to ensure that all items or materials are available when needed as well as tracking the existing inventories and its use (Muhayimana, 2015).

Inventory could be defined as part of firm's assets that arc held in the form of raw materials, work in-progress and finished goods are held in stock to ensure that goods are available when required by customers (Musenga, 2005). Raw materials and components are held in stock to prevent disruptions to production caused by lack of materials or components and to secure economic from bulk buying. Donnelly (2007) in his work, defined management as the process undertaken by one or more individuals to co-ordinate the activities of others to achieve results, not achievable by one individual acting alone, therefore, inventory management is a process undertaken by one or more individuals to co-ordinate the activities of the organization in maintaining optimum level of stock investment of the organization to active its set objectives.

According to Okeke (2015), Inventory management is very useful in the operation of many businesses.

Also Monwuba (2005), views inventories as stocks which accounts for substantial part of the company's current assets and they include raw materials components, partly finished goods (works in progress) and finished goods ready for sale.

According to Meigs (2013). inventories consists of goods held for sale to customers, partially completed goods in production and materials and supplies to be used in production inventory items are acquired and sold continuously in merchandising business, or acquired place in production, converted into finished product and sold in manufacturing business. The sale of merchandise or finished product is the primary source of revenue for most business enterprise.

Inventory Classification:

Basically, there are three classes of inventory in manufacturing business enterprise namely:

1) Raw Material
2) Work-in-Progress
3) Finished Goods

Raw Materials

These are all the items that after being received into the store require further processing before becoming an identifiable part of the finished product. Once raw materials ordered from external suppliers are received, they are inspected for quality and quantity, and then stored in warehouse before issuing them out for the purpose or production. However, the finished products of one firm may be raw materials for another (IAS 2).

Work- In-Progress

This represents the partly completed products found within the factory at some stages in the production process. They are materials, components or products in various stages of completion during manufacturing process. 'The valuation of work in progress which can be analyzed into its component element of direct: materials, direct labour and direct overheads is available in the costing records.

Finished Goods

They are the stock of completely manufactured product available for sale and distribution to end users. The finished goods existence after the work in progress is equally known and valued through the cost records. Other additional forms which inventory for manufacturing firms may take place include purchased parts and supplies for use in production.

Purchased Parts

They are the component parts of products requiring no additional processing before being assembled into finished goods. Most often, they may be classified as raw material inventory.

Supplies

These apply to all the materials needed for the successful operation of the plant but which are not used as part of the finished products. In most cases, they are referred to as indirect materials, while those materials that eventually become part of finished products are called direct materials.

Items that are excluded from the Scope of IAS 2

According to IAS 2 the following items are excluded from it's scope:

i) Work in progress under construction contracts (IAS 11 Construction contracts)
ii) Financial instruments (IAS 32, IAS 39, IFRS 7, IFRS 9)
iii) Biological assets (IAS 41 on Agriculture)

According to IAS 2 inventory should be measured at the lower of cost and net realisable value which means the cost value of inventory should be compared with the net amount that would be realized from the sale of the inventory and the lower value should represent the value of the inventory. The cost of inventories will consist of all costs of: purchase costs, cost of conversion, other cost incurred in bringing the inventories to their present location and condition.

2.1.2 Overview of Operational Performance

Baldrige criteria describes performance as the output results from processes, products and services that permit evaluation and comparison relative to goals, standards, past results and other organizations. Baldrige performance excellence criteria are a framework that any organization can use to improve overall performance. According to Waruiru and Kagiri (2013), Performance is expressed in two forms either in financial and non - financial terms. Baldrige criteria describes measurement as numerical information that quantifies input, output and performance dimensions of processes, product, services and the overall organization outcomes (Mwangi, 2013).

The financial measure of performance was described as the traditional way of measuring a firm's performance through financial measures such as return on sales, net profit, return on investment and cash flow. Non–financial measures have also been used to determine the performance of an organization through operational performance. Voss, Ahlstrom and Blackmon (2017), explain that operational performance is the measurable aspect of an organization's process.

According to Malonza (2014), operational performance encompasses production reliability and defect rates, production cycle time, time delivery, cost of quality and scrap minimization, productivity, and inventory. In addition to this, Mwichigi and Waiganjo (2014) described a firm's operational performance as a measure of how well a firm uses its assets from its core operations and generate revenues over a given period of time.

Birech (2011) outlines various performance measures as within operations area namely (i) standard individual performance measures which include: productivity measures, quality measures, inventory measures, lead-time measures, preventive maintenance, performance to schedule, and utilization. (ii) Specific measures which include: Cost of quality - measured as budgeted versus actual. Variances - measured as standard absorbed cost versus actual expenses. Period expenses - measured as budgeted versus actual expenses. Safety - measured on some common scale such as number of hours without an accident, profit contribution – measured in dollars or some common scale.

2.1.3 Concept of Profitability

According to Bourne, Kennerley and Franco-Santos (2015), performance measurement is traditionally concentrated on financial measures. In this context operational performance is a measure of change of operations of tea processing firms or their outcome resulting from use of inventory control systems. Business performance provides the basis for a tea processing firm to assess how well it is progressing towards its predetermined objectives.There is need to analyze the costs of maintaining certain levels of inventory as there are costs involved in holding too much stock and there are also costs involved in holding too little inventory (Atrill & Mcloney, 2016). According to Lardenoije, Raaij, and Weele (2005) financial measures ignore market dynamics and increased complexity in acquisition of goods and services for business firms. They are of contrary opinion that firms have to assess the complexity of acquisition of inventory and on how to control in order to improve operational performance of the firm. The study challenges the entrepreneurs to establish avenue to reduce inventory without compromising production and without increasing cost. According to Ogbadu, (2010), profit is an index for measuring performance. Manufacturing operational performance is a combination of practices; hence several performance measures can be used efficiently.

According to Vastag and Whybark, (2015), the most typical measures of operational performance are rejects and scrap, reworking, labour and machine productivity, product quality, inventory levels and turnover, unit manufacturing cost, manufacturing cycle time, delivery speed and reliability. Profitability refers to money that a firm can realise with the resources it has. The goal of most organization is profit maximization (Niresh & Velnampy, 2014). The profitability shows the ability of a firm to generate earnings from the use of its assets for a certain period of time (Farah & Nina, 2016). Profitability involves the capacity to make benefits from all the business operations of an organization, firm or company (Muya & Gathogo, 2016). Profit usually acts as the entrepreneur's reward for his/her investment. There is the universal harmony that, profit is the main motivator of an entrepreneur for doing business. Profit is also used as an index for performance measurement of a business

(Ogbadu, 2009). Profit is the difference between revenue received from sales and total costs which includes material costs, labor and so on (Stierwald, 2010).

Profitability can be expressed either as accounting profits or economic profits and it is the main goal of a business venture (Anene, 2014). Profitability portrays the efficiency of the management in converting the firm's resources to profits (Muya & Gathogo, 2016). Thus, firms are likely to gain a lot of benefits in increased profitability (Niresh & Velnampy, 2014). One important precondition for any long-term survival and success of a firm is profitability. It is profitability that attracts investors and the business is likely to survive for a long period of time (Farah & Nina, 2016). Many firms strive to improve their profitability and they do spend countless hours in meetings trying to come up with a way of reducing operating costs as well as on how to increase their (sales Schreibfeder, 2006).

Management efficiency refers to the ability of an organizations management to deliver a specific service with minimum cost. Efficiency in management ensures a more effective use of the organizations resources and assets to enhance profitability (Predescu, 2008). Management efficiency measured in terms of total asset growth and earnings flow is a key factor that determines a firm's profitability and cash flows. Profit can easily be controlled through pricing of products as well as through costs (Ogbadu, 2009). The exploitation activities done by managers generate cash inflows, materialized in the shape of depreciation and profit gained from the firm's main activity. Thus, managers should make proper investment decisions to generate enough cash flows (Predescu, 2008).

2.1.4 Firm Growth Levels

Firm growth leads to higher profitability. This is based on the evidence that most of the new firms usually more profitable at the first time they enter the markets quickly on a large scale Fitzsimmons, Steffens and Douglas, (2005). In addition, a high cash flow levels leads to growth of investments Predescu, (2008). The growth of the firm promotes the development and survival of not just the firm itself but also that of the national economy. Thus, growth which is a measure of performance of the firm is usually based on a belief that growth is a catalyst for firm's profitability as well as for achievement of sustainable competitive advantages Fitzsimmons, Steffens and Douglas, (2005). Farah and Nina (2016), posit that the growth rate significantly and positively affect the firm's profitability.

2.1.5 Size of the Enterprise

The firm's size is one of the main factors in determination of the firm's profitability. This is based on economies of scale concept, which is found in traditional neo classical view of the firm (Niresh and Velnampy, 2014). Large firms have a persistence of profitability compared to small firms. This is because, large firms can easily access more resources and are able to adjust to changes in the current dynamic market (Salman and Yazdanfar 2012). The size of the firm or enterprise also determines the cash flow sensibility to investments (Predescu, 2008). In measuring the size of the firm size, total number of employees of the firm, volume of sales and amount of property are the main factors that are usually measured Salman and Yazdanfar, (2012).

2.1.6 Effect of Inventory Management on Firm Profitability

Inventory management policies and procedures are normally designed to ensure that a firm or an organization uses its inventory in a way that it is able to maximize its profit from the least inventory investment amount without encroaching or affecting customer's levels of satisfaction (Anene, 2014). Inventory constitutes a large portion of total investment, it is vital that a firm adapts a good inventory management system to enable firm's growth and enhancement of firm's profitability (Anichebe & Agu, 2013). As such, the Economic Order Quantity (EOQ) theory states that for a firm to maximize benefits from inventory management it should hold an optimal inventory, which minimizes both ordering cost and holding cost of inventories. The Just in Time (JIT) model proposes that firms should produce or to purchase products or components as they are required by customers or for use rather than holding stock (Sitienei & Memba, 2015).

2.2 THEORETICAL REVIEW

2.2.1 Just in Time Theory

Just in Time (JIT) is a strategy that is meant to improve the financial performance of a business by reduction of excess inventory together with associated cost (Shin, Ennis & Spurlin, 2015). The JIT model is based on three crucial principles: waste elimination, continuous improvement in product and service quality and involvement of staff/workers in planning and implementation of the firm's strategies (Obiri-Yeboah, Ackah and Makafui, 2015). JIT is a management concept that was invented to specifically help firms in waste avoidance/reduction. JIT encourages waste minimization as well as productivity enhancement as such this study will benefit immensely from this merit thereby making it fundamental to anchor this work on the Just in Time theory.

JIT model is able to identify the value chain challenges and helps in reduction of production waste in the system (Kootanaee, Nagendra & Hamidreza, 2013). Just-In-Time (JIT) is about having right items, right quality and right quantity at the right time and place. If JIT is implemented well, it has the potential of enhancing production quality, increase productivity, improve production efficiency and finally reduces wastes and other avoidable costs associated with production. JIT help in reduction of inventory levels within a firm. As such, firms end up lowering their investments in inventories. JIT emphasize on having in hand the minimum required quantity of materials for immediate use. As such, inventory holding costs are substantially reduced (Kootanaee, Nagendra & Hamidreza, 2013).

2.2.2 Pareto (ABC) Theory

The Pareto principle was proposed by Vilfredo Pareto (1887). ABC analysis is a categorization technique which is based on Pareto Principle. This principle helps in determination of what items to be given priority in management of a firm's inventory. In ABC analysis inventories are usually categorized to three classes. That is, class A, class B, and finally class C. Management efforts and oversights are expended in management of class A items. Class C items usually get the very least attention from the management while class B items are in-between (Ravinder & Misra, 2014).

With the ABC model, products are categorized depending on their importance levels. Importance may be from the amount of cash flows to be generated from a product, stock out cost associated with a product, the products sales volume, profitability and so on. Once categorization is done, breaking points are also decided for each class (Class A, class B and class C) (Obiri-Yeboah, Ackah & Makafui, 2015).

2.3 EMPIRICAL REVIEW

Many of the reviewed studies in this area show significant relationship between inventory management and performance. Global studies by Etale and Bingilar (2016), Nwosu (2014), Madishetti and Kibona (2013), Anichebe and Agu (2013) and Panigrahi (2013) show that inventory is fundamental to the success and growth of organizations.

Local studies by Naliaka and Namusonge (2015), Oballah, Waiganjo and Wachiuri (2015), Mwangi and Thogori (2015), Munyao (2015), Omulo, Mwithiga, & Chepkulei (2015) show that management and control of inventories is vital to any firm since any attempt of inventory mismanagement threatens the firm's viability. However, most of the studies focus more on inventory management practices with few of them investigating the effect of inventory management on profitability and operational cash flows of manufacturing firms in Nigeria.

Profit of an organization can easily be maximized with the help of an effective inventory management system in places. Profit maximization is all about cost minimization and revenue maximization. An effective inventory management improves the firm's total performance through matching inventory management practices and a competitive advantages especially now that most organizations operates in a more competitive industries or sectors all over the world Mahidin (2015). The main goal and objective of inventory management system is to keep at the necessary required inventory at any time so that production could run smoothly without interruption whatsoever (Panigrahi, 2013).

Dettoratius, Raman, and Craig, (2013) in their work state that a lot of revenue is lost due to stock-outs induced inventory inaccuracy. Salawati, Tinggi, and Kadri, (2012), analyzed the impact of inventory management on performance. They empirically examined the relationship between inventory management and firm performance on a sample of financial data for 82 construction firms in Malaysia for a period 2006-2010. They employed regression and correlation technique to analyse their findings. Their finding was that inventory management is positively correlated with firm performance. Their study focused only on general performance of the firms using financial change as a performance indicator.

A study by Koumanakos (2008) on effect of inventory management on performance of some firms established that a rate of returns is significantly related to the level of inventory held. Khaled and Hayam (2016), studied the relationship that exists between management of inventory and the general firm's performance. The study established that inventory to sales ratio affects organization performance negatively at the initial growth stage and the maturity stage; it exerts a positive and significant coefficient on performance in either the rapid growth stage or the revival stage. Furthermore, Kwadwo (2016), investigated effect of efficient management of inventory on profitability of manufacturing firms. The study revealed that a significantly and positive correlation between raw materials inventory management and profitability of manufacturing firms in Nigeria.

Duru, Oleka and Okpe (2014), analyzed effect of inventory management on profitability and revealed that inventory turnover had significant and negative effect on the profitability. Additionally, Siyanbola (2012) also studied effect of stock valuation on profitability of manufacturing industries. The study established that high stock cost affects profit negatively and stock also affects the company's profitability. Lwiki.(2013), also

studied the effect of inventory management practices on financial performance. The study established a positive and statistically significant correlation between management of inventory and return on sales.

III. METHODOLOGY

Introduction

This study investigated inventory management as per IAS 2 and profitability of selected manufacturing concerns focusing principally on the provision of the standards based on principles and conventions. Secondary data was obtained from annual reports of the companies under study. The researcher obtained data on inventory, cost of sales, net current asset, profit for the year, turnover, and retained earnings for the manufacturing firm under consideration for a period of 16 years spanning from 2005-2020.

3.1`Research Design

The research design adopted for the study was ex-post facto research design.

3.2 Population

The population of the study covered manufacturing concerns on the Nigerian Stock Exchange.

3.3 Technique of Data Analysis

Collected data were analyzed using ordinary least squares methods in form of regression equations via the statistical package for economic analysis (E-views). To measure inventory management, this study used inventory conversion period (ICP) as well as turnover and the effect of each of these variables on profitability were tested separately. To measure profitability, the study utilized the company's profit after tax and Net current asset, while firm size and firm growth were used as control variables.

IV. ANALYTICAL MODEL

The regression equations were formulated as follows;

MODEL ONE

$$PRB = f(ICP, NCA, FSZ, FGR) \quad (1)$$

$$PRB = \beta_0 + \beta_1 ICP_t + \beta_2 NCA_t + \beta_3 FSZ_t + \beta_4 FGR_t + \mu_t \quad (2)$$

Where:

$$\text{PRB} = \text{Profitability} = \text{profit after tax}$$

$$\text{ICP} = \text{Inventory conversion period} = (\text{Closing inventory}/\text{cost of sales}) * 365$$

$$\text{NCA} = \text{Net current asset} = \text{Current asset} - \text{current liabilities}$$

$$\text{FSZ} = \text{Firm Size} = \text{Natural log of retained earnings}$$

$$\text{FGR} = \text{Firm growth} = (\text{Turnover}_t - \text{Turnover}_{t-1})/\text{Turnover}_{t-1}$$

$$\beta_1 - \beta_4 = Regression\ coefficient$$

$$\mu = Error\ term$$

Control variables were treated as follows; Firm growth was dealt with by relating turnover in current period with turnover in a previous period. Firm size was relative to the natural log of a company's retained earnings. Net current asset is current asset for a particular time period less current liability for that period.

MODEL TWO

$$PRB = f(TNO, NCA, FSZ, FGR) \quad (3)$$

$$PRB = \beta_0 + \beta_1 ICP_t + \beta_2 NCA_t + \beta_3 FSZ_t + \beta_4 FGR_t + \mu_t \quad (4)$$

Where:

$$\text{PRB} = \text{Profitability} = \text{profit after tax}$$

$$\text{TNO} = \text{Turnover}$$

$$\text{NCA} = \text{Net current asset} = \text{Current asset} - \text{current liabilities}$$

$$\text{FSZ} = \text{Firm Size} = \text{Natural log of retained earnings}$$

$$\text{FGR} = \text{Firm growth} = (\text{Turnover}_t - \text{Turnover}_{t-1})/\text{Turnover}_{t-1}$$

$$\beta_1 - \beta_4 = Regression\ coefficient$$

$$\mu = Error\ term$$

Control variables were treated as follows; Firm growth was dealt with by relating turnover in current period with turnover in previous period then applies a formula. Firm size was relative to the natural log of a company's retained earnings. Net current asset is current asset for a particular time period less current liability for that period.

Test of Significance

To test significance of regression model, the study utilized the F-statistics while the t – statistics was used to test significance of regression coefficients. Both the F-statistics and t-statistics were tested at 95% confidence level the regression coefficient becomes significant when its probability is lower than 0.05.

Descriptive Statistics

The study carried out a descriptive summary of the study variables. Table 4.1 shows the results obtained;

Summary of Descriptive Statistics

Table 4.1

	PRB (₦'000)	ICP (Days)	NCA (₦'000)	FS	FG	TNO (₦'000)
Mean	3222112	68.132	-204386.8	15.591	0.098	51338763
Median	3071885	69.405	-1029428	15.651	0.090	54724749
Maximum	7450085	88.363	53263433	16.602	0.330	90771306
Minimum	-1617263	35.582	-13689839	14.517	-0.235	25554415
Std. Dev.	2387277	16.035	17089619	0.519	0.155	17395360

Source: Author's computation, 2020

Table 4.1 shows the average profit for the manufacturing companies is ₦3,222,112,000 which indicates average profitability for the manufacturing organizations is good. The results also indicate the average inventory conversion period (ICP) is 72.871 days, which indicates that on average the selected manufacturing concerns take an average of 68 days to convert inventory into sales. The average turnover (TNO) is ₦51,338,763,000. The average growth (FG) rate for the firms is 9.8%, which is high and good and the average size (FS) the firms is ₦15,590 respectively.

Correlation Analysis

Model One

This model used profit after tax to measure profitability and inventory conversion period to measure inventory management. Other variables in the model are control variables and these include firm size, net current asset, and firm growth. Table 4.1 shows the correlation analysis results;

Table 4.2

	PRB	ICP	NCA	FG	FS
PRB	1.000	0.623	0.466	0.514	-0.094
ICP	0.623	1.000	-0.206	-0.121	-0.036
NCA	0.466	-0.206	1.000	0.413	0.036
FG	0.514	-0.121	0.413	1.000	-0.337
FS	-0.094	-0.036	0.036	-0.337	1.000

Source: Authors Computation, 2020

The results on table 4.2 shows that here is positive correlation between profitability measured using profit after tax and inventory conversion period (ICP), Net Current Assets (NCA), firm growth (FG) and a negative correlation between firm size and profitability.

Model Two

This model used profit after tax to measure profitability and firm's turnover to measure inventory management. Other variables in the model are control variables and these include firm size, net current asset, and firm growth. Table 4.3 shows the correlation analysis results;

Table 4.3

	PRB	TNO	NCA	FSZ	FGR
PRB	1.000	0.718	0.466	-0.094	0.514
TNO	0.718	1.000	0.459	-0.641	0.417
NCA	0.466	0.459	1.000	0.036	0.413
FSZ	-0.094	-0.641	0.036	1.000	-0.337
FGR	0.514	0.417	0.413	-0.337	1.000

Source: Authors Computation, 2020

The results on table 4.3 shows that here is a high positive correlation between profitability measured using profit after tax and turnover (TNO). Net current assets (NCA) and firm growth (FG) also has positive correlation with profitability but not as high as turnover and a negative correlation exist between firm size and profitability.

4.1 Graphical analysis

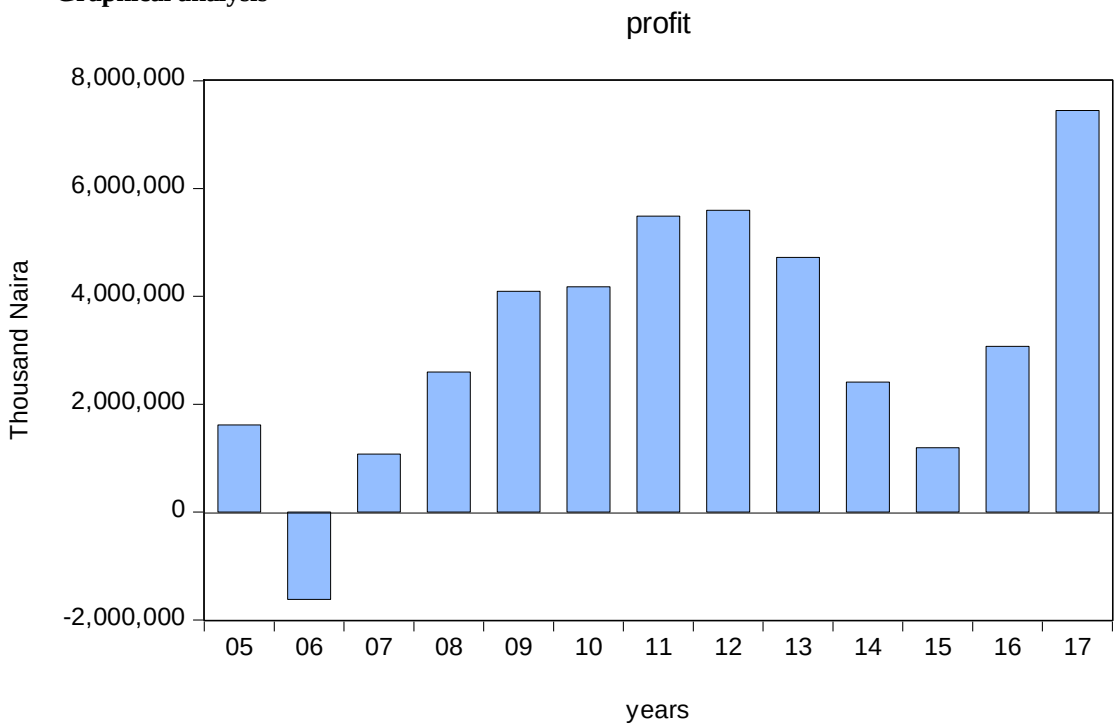

Fig. 4.1: Bar chart of the firms profit after tax

Figure 4.1 above shows that the firm experiences a loss to the tune of ₦1,617,263,000 in 2006 after which the companies got back on its track and made a profit of ₦1,077,496,000 in 2007. Since then the firm's profitability has been increasing year in year out. However, there was a fall in the company's profit between 2013 and 2015 after which the companies profit has been increasing again.

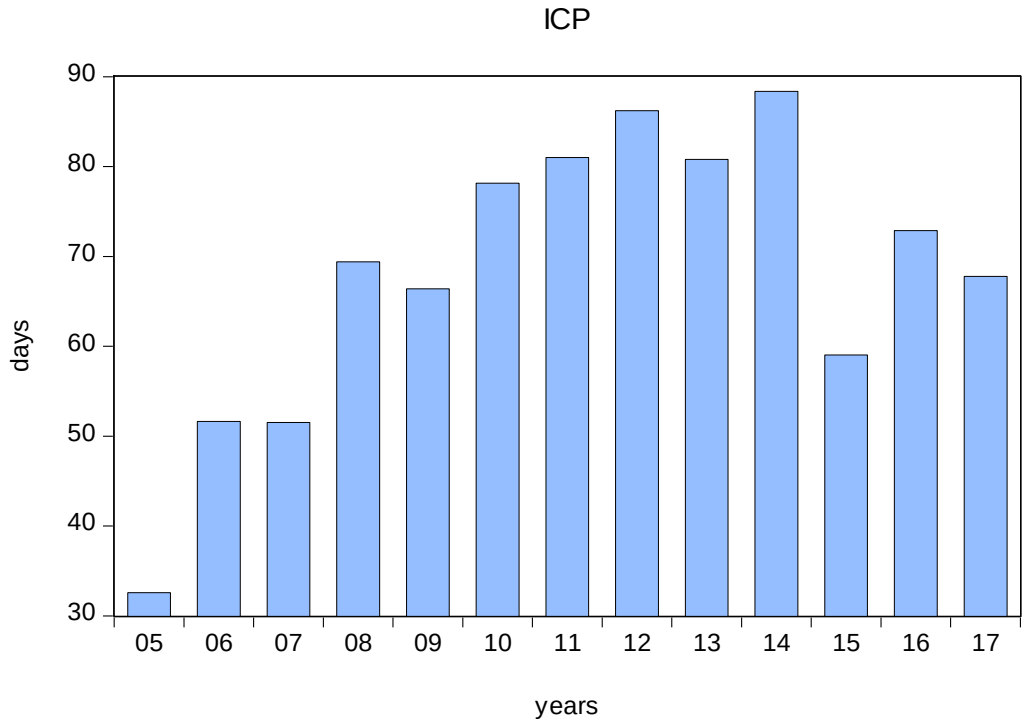

Fig. 4.2 Bar chart of inventory conversion period

The inventory conversion period shows the number of days it will take the companies to hold its inventory before they are sold. The conversion period for the firm has been on an average of 68days about

2months and 2 weeks. This shows that the company has the ability to hold stock for a relatively longer period of time. This thus helps them to meet the demand of their customers as at when due.

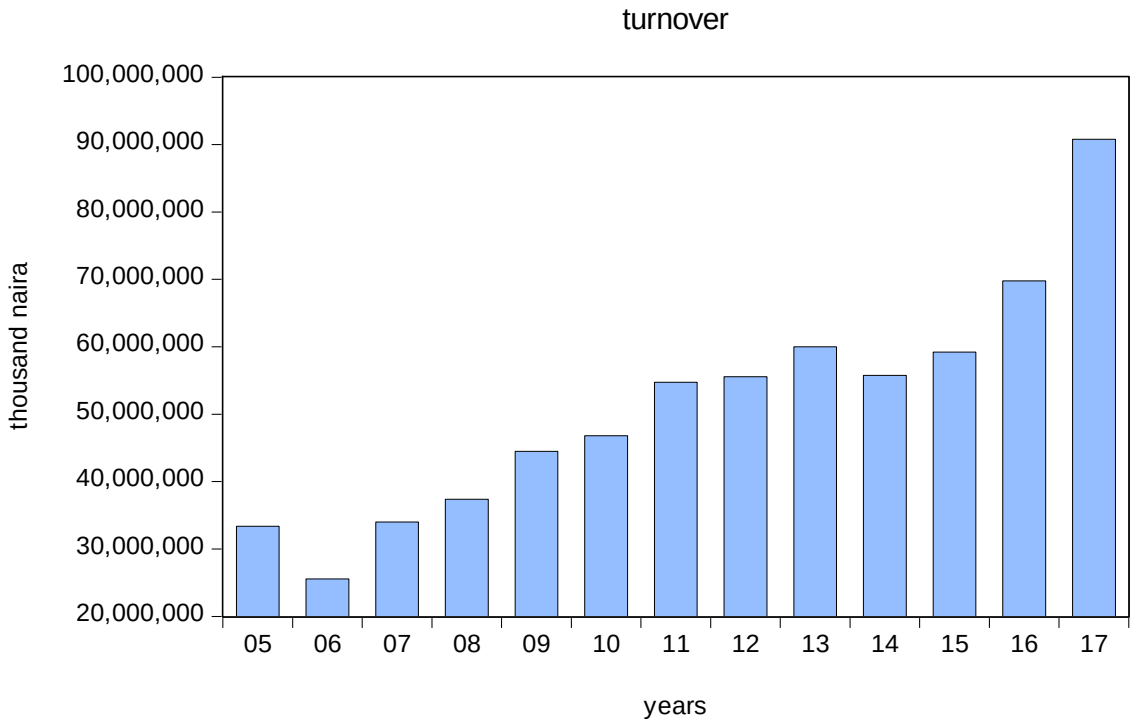

Fig. 4.3 Bar chart of inventory turnover

The inventory turnover of the firm represents that companies sales for a particular time period. Going by the graph, the turn over for the company has been rising and remained high over the year. This may be traceable to the fact that the companies might have gained some market confidence which made its product to be in continual demand by consumers. Also, the company has been in existence for a long period of time making them to have a remarkable percentage of the market share. The companies can be said to have been able to maintain customer's confidence due to its good inventory management practices and this has been a vantage position to the firm.

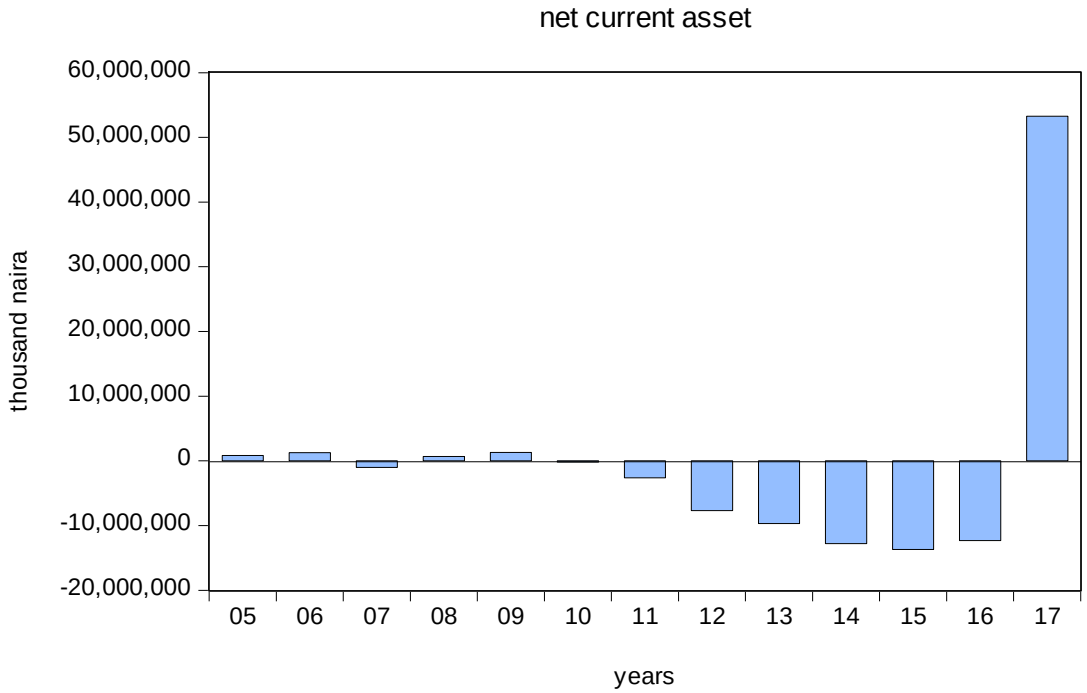

Fig. 4.4 Bar chart of net current asset i.e. current asset less current liability

The net current asset forms the company's working capital which is composed of the remainder of the current asset after current liability has been deducted. Going by figure 4.4, the working capital has been on the low side for years and it was even negative in some years which include 2007, 2010 to 2016. Only in 2017 was the company's working capital positive and high meaning in 2017 the company's current asset outweighs its liability with a large margin. This might be the reason for the large differentials between the profit of previous years and the company's profit in 2017, as the profit for 2017 forms the maximum profit of the company for the years under study representing about ₦7,450,085,000.Fig. 4.4, Bar chart of Firm growth

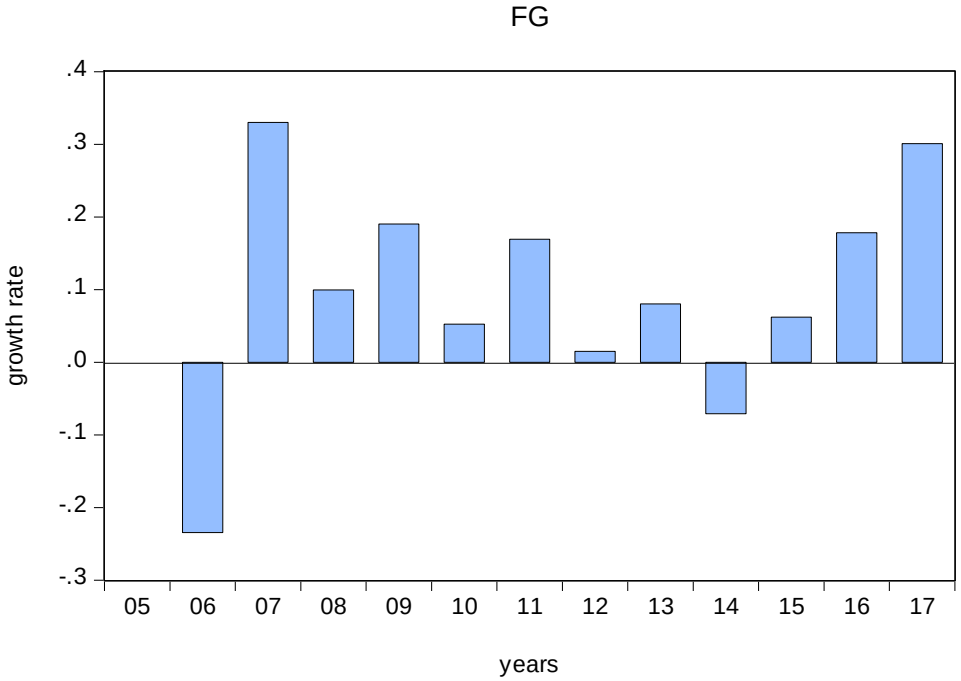

Fig. 4.5 Bar chart of firm growth rate

The firm growth rate was obtained by relating turnover at a particular period with same time a previous period then applies a formula, this gives chances in the company over time. From the graph, it can be deduced that the company experienced a negative growth in 2006, but the growth rate became positive in 2007 after which it continued to grow positively until 2014 where it experienced another negative growth.

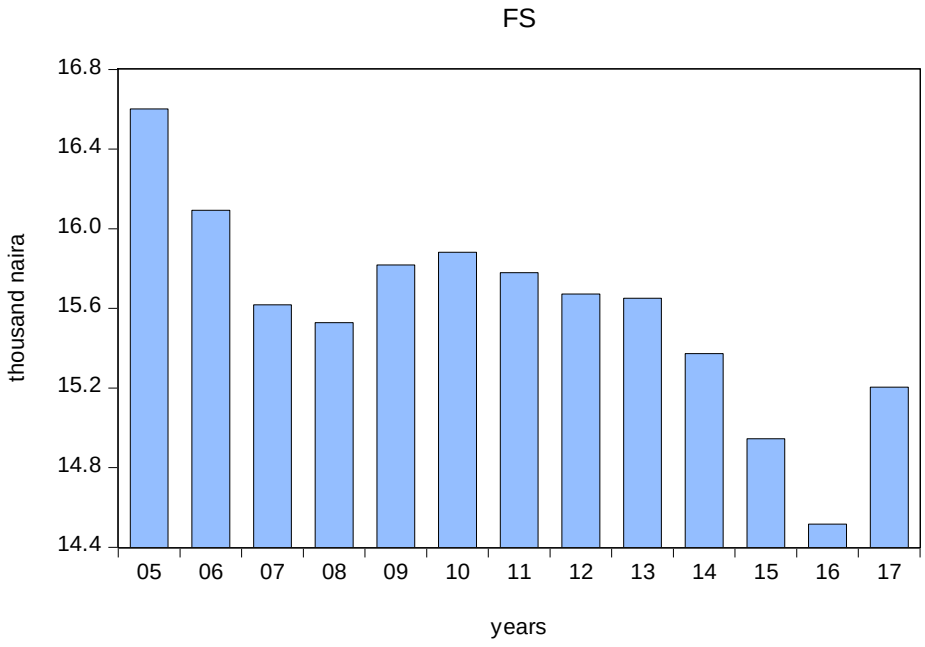

Fig. 4.6 Bar chart of firm size

Figure 4.6 shows that company's size over the years has been large, although the size has been decreasing but it still maintains a high size. The company's size was obtained by taking the natural logarithms of retained earnings over the years.

4.5 Data Analysis and Interpretation of Results

Table 4.4: Regression analysis of Profitability and Inventory Conversion Period

Dependent Variable: PRB
Method: Least Squares
Sample (adjusted): 2005 2020
Included observations: 16 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-13942065	11058435	-1.260763	0.2478
ICP	150433.9	23023.40	6.533957	0.0003
NCA	0.059744	0.017878	3.341772	0.0124
FSZ	382369.8	694512.0	0.550559	0.5991
FGR	7075453.	2157844.	3.278945	0.0135

R-squared	0.907390	Mean dependent var	3355917.
Adjusted R-squared	0.854470	S.D. dependent var	2441984.
S.E. of regression	931576.7	Akaike info criterion	30.62148
Sum squared resid	6.07E+12	Schwarz criterion	30.82353
Log likelihood	-178.7289	Hannan-Quinn criter.	30.54668
F-statistic	17.14648	Durbin-Watson stat	2.468967
Prob(F-statistic)	0.001009		

Source: Author's Computation, 2020

From results on table 4.4, the resultant regression equation is as follows;

$$PRB = -13942065 + 150433.9ICP_t + 0.059744NCA_t + 382369.8FSZ_t + 7075453FGR_t + \mu_t$$

The results on table 4.4 show a positive significant relationship between inventory conversion period (ICP), net current asset (NCA), firm growth (FGR) and profitability. The results also indicate a positive insignificant relationship between the size of the firm (FSZ) and profitability of manufacturing companies using selected manufacturing concerns.

The study also shows that the R- squared value is 0.91, which indicates that 91% of the variation in dependent variable profitability is explained by independent variables; inventory conversion period management, net current asset, firm growth levels and size of the enterprise.

Moreover, the study shows that the calculated F statistics value (17.14648) is significant at 5% level of significance as P-value 0.001<0.05. This indicates a significant relation between the inventory management and the profitability of selected manufacturing firms in Nigeria.

1.5.1 Interpretation of Result

The study findings established that inventory conversion period positively influence profitability of selected manufacturing concerns. This indicates that longer ability to keep inventory, larger inventory capacity, low inventory holding cost, good management of inventories and ability to meet customer's demand at the right time positively affects and increases profitability of the manufacturing organizations

The findings also established that firm growth levels positively influence profitability hence an indication that high growth firms have high levels of profitability and low growth firms have lower profitability. In concurrence, Farah and Nina (2016) found that the growth rate significantly and positively effects to profitability.

Additionally, this study found that the working capital proxy by net current asset significantly and positively influences profitability showing that a firm with higher working capital will be able to hold inventory for longer period of time which will enable it to meet its customer's demand effectively, thereby gaining customers confidence which eventually leads to increased profitability for the firm. Additionally, the findings of the study revealed that management efficiency, firm size insignificantly influences profitability of the firm hence an indication that ineffective management and firm size has an adversely result on firms profitability. According to Predescu (2008), efficiency in management ensures a more effective use the organizations resources and assets to enhance profitability and that the size of the firm is among the factors that determine cash flow sensibility to investments.

Table 4.5: Regression analysis of Profitability and Turnover

Dependent Variable: PRB
Method: Least Squares
Sample (adjusted): 2005 2020
Included observations: 16 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-77978904	19756779	-3.946944	0.0056
TNO	0.171543	0.032652	5.253697	0.0012
NCA	-0.039446	0.026120	-1.510211	0.1747
FSZ	4619672.	1187510.	3.890217	0.0060
FGR	6391977.	2582031.	2.475562	0.0425

R-squared	0.866999	Mean dependent var	3355917.
Adjusted R-squared	0.790998	S.D. dependent var	2441984.
S.E. of regression	1116396.	Akaike info criterion	30.98345
Sum squared resid	8.72E+12	Schwarz criterion	31.18549
Log likelihood	-180.9007	Hannan-Quinn criter.	30.90864
F-statistic	11.40776	Durbin-Watson stat	2.295685
Prob(F-statistic)	0.003462		

Source: Authors Computation, 2020

From results on table 4.5, the resultant regression equation is as follows;

$$PRB = -77978904 + 0.171543TNO_t - 0.039446NCA_t + 4619672FSZ_t + 6391977FGR_t + \mu_t$$

The results on table show a positive significant relationship between turnover (TNO), firm size (FSZ), firm growth (FGR) and profitability. The results also indicate a positive insignificant relationship between the net current assets (NCA) and profitability of manufacturing companies in Nigeria.

The study also shows that the R- squared value is 0.87, which indicates that 87% of the variation in dependent variable profitability is explained by independent variables; inventory turnover, net current asset, firm growth levels and size of the enterprise.

Additionally, the study shows that the calculated F statistics value (11.40776) is significant at 5% level of significance as P-value 0.0035<0.05. This indicates a significant relation between the inventory management and the profitability of manufacturing firms in Nigeria.

V. DISCUSSION OF FINDINGS

The study findings established that inventory turnover positively influence profitability of selected manufacturing organizations. This indicates that ability to meet customers demand as at when due enhances rate of turnover which in turn increases profit as more goods will be sold, thereby turnover positively affects and increases profitability of selected manufacturing concerns.

The findings also established that firm growth levels positively influence profitability hence an indication that high growth firms have high levels of profitability and low growth firms have lower profitability. In concurrence, Farah and Nina (2016) found that the growth rate significantly and positively effects to profitability.

Furthermore, this study found that the firm size significantly and positively influences profitability showing that a firm with larger size will have capacity to produce more, sale more and then have higher profit. Additionally, the findings of the study revealed that management efficiency, firm size significantly influences profitability of selected manufacturing companies hence an indication that ineffective management and firm size has an adversely result on firms profitability.

VI. CONCLUSION AND RECOMMENDATION

This study analyzed the relationship between Inventory Management practices and Operational Performance of selected manufacturing companies in Nigeria and provides an overview of emerging inventory control techniques in manufacturing companies in Nigeria for the benefits of inventory managers, procurement managers, store supervisors and accountants. It also highlighted the automated inventory management techniques beneficial to manufacturing companies and other manufacturing organizations in Nigeria, as well as various costs associated with inventories which must be minimized to obtain optimal performance. Six inventory control techniques were identified and nine automated inventory management techniques were highlighted to help meet the challenges encountered by manufacturing companies in the operations of warehouses and stores across manufacturing industry, and for manufacturing companies in Nigeria. The results

of the data analysis based on related literature reveals that proper inventory management and control system are associated with low storage costs, cost-reduction, stock-out reduction, and timely delivery of requisite goods, products, materials and services to customers, thereby enhancing customer satisfaction, competitive ability, cost efficiency, operational efficiency, effective customer service delivery and enhanced productivity. The findings of the study shows that inventory management practices influence the operational performance of the manufacturing companies in Nigeria.

In addition, the use of inventory control system and computerized inventory system improved performance of the procurement, production, warehouse, distribution and value chain support functions of manufacturing companies in Nigeria. It was discovered that inventory management practices of selected manufacturing companies in Nigeria were positively related to their operational performance. The study concluded that inventory management practices influenced operational performance of selected manufacturing companies in Nigeria, positively and significantly. The overall model was statistically significant; therefore inventory management practices are good predictors of operational performance of selected manufacturing companies in Nigeria. The study also concluded that there were situations of shortages and stock-out of materials because of suppliers' late deliveries of production materials. This study recommends to the management of the manufacturing concerns to adopt effective inventory management practices along with requisite such as just in time and material requirement planning. This is because such inventory management practices would improve their profitability and operating cash flows. This study also recommends to the aforementioned management of manufacturing concerns to develop effective strategic policies and guidelines on inventory management to guide the staff to ensure they hold optimal inventory levels. Holding optimal inventory would help the firms to minimize costs and maximize their profitability and operating cash flows.

In addition this study recommends that managers should focus on growing their firms since high growing firms are able to grow their profitability, operating cash flows and increase their size. This would ensure the firms are able to withstand any negative shocks and benefit from economies of scale associated with large size. And lastly management should deviate seriously from over-valuation of stock in a bid to ensure inventory management, as doing so will only truncate the future of stock concerns in terms of corporate governance compliance and ethical values.

REFERENCES

[1]. Akindipe, O. S. (2014). Inventory management: A tool for optimal use of resources and overall efficiency in manufacturing SMEs. Journal of Entrepreneurship and Innovation (JEMI), 10, (44), 93-113.

[2]. Anene, E. C. (2014). What difference does inventory control make in typical small scale firms' Profitability? International Journal of Management Sciences and Business Research, 3(10), 1 – 4

[3]. Anichebe, N. A., & Agu, O. A. (2013). Effect of inventory management on organizational effectiveness. Information and Knowledge Management, 3(8), 92-100.

[4]. Atrill, P., & McLaney E. (2006). Accounting and Finance for Non-Specialists, (5th Edition). London. FT

[5]. Barley, S. R. (1986). Technology as an occasion for structuring: Evidence from observation of CT scanners and the social order of radiology departments. Administrative Science Quarterly, 31, 78-108.

[6]. Birech, K. W. (2011). The effect of performance contracting strategy on the performance of state corporations in the Energy sector in kenya. Unpublished MBA Thesis University of Nairobi.

[7]. Bogdan, R. C., & Biklen, S. K., (2007). Qualitative research for education: An introduction to theory and methods (5th edn.). Boston: Pearson/Allyn and Bacon.

[8]. Dettoratius, N., Raman, A., & Craig, N. (2013). The impact of supplier reliability on retailer demand. Chicago: Harvard Business school.

[9]. Duru, A. N., Oleka, C. D. & Okpe, I. (2014). Inventory management on the profitability of building materials, chemical, and paint companies in Nigeria. World Journal of Management and Behavioral Studies, 2 (2), 21-27

[10]. Eneje, B. C., Nweze, A., & Udeh, A. I. (2012). Effect of efficient inventory management on profitability: Evidence from of selected brewery firms in Nigeria. International Journal of Current Research, 4(11), 350-354

[11]. Etale, L. M. & Bingilar, P. F. (2016). The effect of inventory cost management on profitability: A study of listed brewery companies in Nigeria. International Journal of Economics, Commerce and Management, 4(6), 446 – 455

[12]. Farah, M., & Nina, S. (2016). Factors affecting profitability of small medium enterprises (SMEs) firm listed in Indonesia Stock Exchange. Journal of Economics, Business and Management, 4(2), 132-137

[13]. Fitzsimmons, J. R., Steffens, P. R., & Douglas, E. J. (2005). Growth and profitability in small and medium sized Australian firms. AGSE Entrepreneurship Exchange, Melbourne.

[14]. Gary P. M. (2014). Application of the theory of constraints for capacity requirements analysis: A case study. International Journal of Applied Science and Technology, 4 (2), 1-9.

[15]. Ghosh A. K., & Kumar, P. (2003). Production management. New Delhi: Anmol Publication Pvt. Ltd.

[16]. Hakansson, H., & Persson, G. (2004). Supply chain management: The Logic of Supply Chains and Networks.

[17]. Harishani, L. L. (2010). An empirical investigation of inventory management practices of processed food supply chain in Sri Lanka manufacturer's perspective: International Conference on Industrial Engineering and Operations Management, Dhaka, Bangladash, January 9-10.

[18]. Khaled, E. & Hayam,W. (2016). Re-examining the relationship between inventory management and firm performance: An organizational lifecycle perspective. Future Business Journal, 2, 65–80

[19]. Kootanaee, A. J., Nagendra, B. & Hamidreza, F. T. (2013). Just-in-Time manufacturing system: From introduction to implement. International Journal of Economics, Business and Finance, 1(2), 07 – 25

[20]. Koumanakos, D. P. (2008). The effect of inventory management on firm performance. International Journal of Productivity and Performance Management, 57(5), 355-369

[21]. Kwadwo, B. P. (2016). The impact of efficient inventory management on profitability: Evidence from selected manufacturing firms in Ghana. International Journal of Finance and Accounting, 5(1), 22-26

[22]. Lardenoije, E. J. H., Raaji. E. M., & Weeds, A. J. (2005). Performance management models and purchasing relevance still cost, The 14th conference IPSERA.

[23]. Lwiki, T., Ojera, P. B., Mugenda, N. G., & Wachira, V. K. (2013). The impact of inventory management practices on financial performance of sugar manufacturing firms in Kenya. International Journal of Business, Humanities and Technology, 3(5), 75 – 85

[24]. Madishetti, S., & Kibona, D. (2013). Impact of inventory management on the profitability of SMEs in Tanzania. International Journal of Research in Commerce & Management, 4(2), 1-5

[25]. Mahidin, F., Saad, R., Mohd, N. M., & Yusoff, R. (2015). The Influence of inventory management practices towards inventory management performance in Malaysian Public Hospitals. International Academic Research Journal of Business and Technology, 1(2), 142-148

[26]. Malonza, A. M. (2014). Lean manufacturing and operational performance of Mumias Sugar Company Limited, Kenya. Unpublished MBA Thesis University of Nairobi.

[27]. Milicevic, N., Davidovic, M., & Stefanovic, M. (2012). Financial effects of inventory management in trading companies - EOQ Model. Economics and Organization, 9(4), 507 – 519

[28]. Muhayimana V. (2015). Inventory management techniques and Its contribution on better management of manufacturing companies in Rwanda. European Journal of Academic Essays, 2(6), 49-58

[29]. Munyao, R. M., Omulo, V. O., Mwithiga, M. W., & Chepkulei, B. (2015). Role of inventory management practices on performance of production department. International Journal of Economics, Commerce and Management, 3(5), 1625 – 1656

[30]. Munyao, R. M., Omulo, V. O., Mwithiga, M. W., & Chepkulei, B. (2015). Role of inventory management practices on performance of production department.

[31]. Musenga, F. M. (2005). Inventory management as a determinant for improvement of customer service. Unpublished thesis submitted to the Department of Business Management, Faculty of Economic and Management Sciences University Of Pretoria, South Africa.

[32]. Muya, T. W., & Gathogo, G. (2016). Effect of working capital management on the profitability of manufacturing firms in Nakuru Town, Kenya. International Journal of Economics, Commerce and Management, 4(4), 1082 – 1105

[33]. Mwangi, A. M. (2013). The relationship between working capital management and financial performance of manufacturing firms listed at the Nairobi Securities Exchange. A research project submitted in partial fulfillment of the requirements for the award of degree of Master of Business Administration, University Of Nairobi.

[34]. Mwangi, W., & Thogori, M. N. (2015). The role of inventory management on performance of food processing companies:. European Journal of Business and Social Sciences, 4(4), 64 – 78

[35]. Mwichigi, S.N., & Waiganjo, E.W. (2014). Relationship between outsourcing and operational performance of Kenya's energy sector. International Journal of Academic Research in Business and Social Sciences, 5 (3), 497-513.

[36]. Naliaka, G., & Namusonge, N. (2015). Role of inventory management on competitive advantage among manufacturing firms in Kenya. International Journal of Academic Research in Business and Social Sciences, 5 (5), 87-104.

[37]. Niresh, J., A. & Velnampy, T. (2014). Firm Size and Profitability: A Study of Listed Manufacturing Firms in Sri Lanka. International Journal of Business and Management, 9(4), 57 – 64

[38]. Nwosu, H. E. (2014). Materials, Management and Firm's Profitability. The International Journal of Business & Management, 2(7), 80-93

[39]. Oballah, D., Waiganjo, E., & Wachiuri, W. E. (2015). Effect of inventory management practices on organizational performance in public health institutions in Kenya. International Journal of Education and Research, 3(3), 703- 714

[40]. Obiri-Yeboah, H., Ackah, D., & Makafui, R. A. (2015). Assessing the impact of efficient inventory management in on organization. International Journal of Advanced Research in Computer Science and Software Engineering, 5(8), 86-103

[41]. Ogbadu, E. E. (2009). Profitability through effective management of materials. Journal of Economics and International Finance, 1(4), 099-105

[42]. Ogbo, A. I., & Ukpere, W.I. (2015). The impact of effective inventory control and management on organizational performance: A study of 7up Bottling Company Nile Mile Enugu, Nigeria. Mediterranean Journal of Social Science, 5 (10), 109-118.

[43]. Oladejo, M., & Ajala, O. (2016). Stakeholders perceptions of the inventory management practices impact on performance of medium scale food industry in Nigeria. International Journal of Advances in Management and Economics, 5 (2), 116-126.

[44]. Olowe, R.A. (2010). Financial management: Concepts, analysis and capital investment (7th ed.) Lagos, Brievy Jones Nigeria Limited.

[45]. Onyiego, S., & Oloko, M. (2016). Factors affecting implementation of just –in-time inventory in public institutions in Kenya. International Journal of Management and Commerce Innovations, 3(2), 675-687.

[46]. Onyoni, M. K. (2015). Investigating the inventory management practices on operational performance in non-governmental organizations in Kenya. Unpublished thesis research project submitted in partial fulfillment of the requirements for the award of Master of Business Administration (MBA) degree of the University of Nairobi

[47]. Ordu, P. A. (2014). EOQ in a Just in Time (JIT) world: An empirical analysis of the impact of EOQ variables on operating profit. European Journal of Business and Management, 6(37), 127-143.

[48]. Orlikowski, W. J. (1992). The duality of technology: Rethinking the concept of technology in organizations. Organization Science, 3(3), 398-427.

[49]. Osei, M. (2015). The effect of inventory management practices on service delivery at St. Martin's Hospital, Agroyesum, Amansie-West. Unpublished Masters' thesis submitted to the Department of Information Systems and Decision Sciences, KNUST School of Business.

[50]. Osuagwu, L. (2006). Market orientation in Nigerian companies. Marketing Intelligence & Planning, 24 (6), 608-631.

[51]. Panayides, P. M. (2015). The Impact of vertical integration on inventory turnover and operating performance. International Journal of Logistics Research and Applications, forthcoming

[52]. Pandy, I. M. (2005). Financial management (9th Ed.). New Delhi: Vikas Publishing Ltd.

[53]. Panigrahi, A. K. (2013). Relationship between inventory management and profitability: An empirical analysis of Indian cement companies. Asia Pacific Journal of Marketing & Management Review, 2 (7), 107 – 120

[54]. Predescu, I. (2008). The influence of the financial factors on cash flow; As determining factor of firm's investment decisions. Romanian American University. Prentice Hall.

[55]. Rahman, S., & Farah, T. (2012). Non-bank financial institutions' profitability indicators: Evidence from Bangladesh. International Journal of Applied Research in Business Administration and Economics, 1(1), 26–32.

[56]. Salawati, S., Tinggi, M., & Kadri, N. (2012). Inventory management in Malasyian construcion firms: Impact on performance. SIU Journal management, 2,59-60.
[57]. Salman, A. K., & Yazdanfar, D. (2012). Profitability in Swedish micro firms: A quantile regression approach. International Business Research, 5(8), 94 – 106
[58]. Schreibfeder, J. (2006). Inventory management: Analyzing inventory to maximize profitability. effective inventory management, Inc.
[59]. Shin, S., Ennis, K. L., & Spurlin, W. P. (2015). Effect of inventory management efficiency on profitability: Current evidence from the U.S. Manufacturing Industry. Journal of Economics and Economic Education Research, 16(1), 1-15
[60]. Sitienei, E., & Memba, F. (2016). The effect of inventory management on profitability of cement manufacturing companies in Kenya. International Journal of Management and Commerce Innovations, 3 (2), 111-119.
[61]. Siyanbola, A. O. (2012). Impact of stock valuation on profitability of manufacturing industries in Nigeria. International Journal of Advanced Research in Management and Social Sciences, 1 (2), 35-46.
[62]. Stierwald, A. (2010). Determinants of profitability: An analysis of large Australian firms. Melbourne Institute Working Paper No. 3/10. The University of Melbourne
[63]. Swaleh, L. A., & Were, S. (2014). Factors affecting effective implementation of inventory management systems in the public sector. International Journal of Social Sciences Management and Entrepreneurship, 1(2), 17-32
[64]. Unyimadu, S. O. (2014). Inventory management practices in manufacturing firms. Industrial Engineering Letters, 4 (9), 40-44.
[65]. Uwuigbe, U., Uwuigbe, O.R., & Oyewo, B. (2015). Credit management and bank performance of listed banks in Nigeria. Journal of Economics and Sustainable Development, 6 (2), 27-32.
[66]. Vastag, G., & Whybark, D. C. (2005). Inventory management: Is there a knock effect? International Journal of Economics. 93-94.
[67]. Voss, C. A., Ahlstrom, P., & Blackmon, K. (1997). Benchmarking and operational performance: Some empirical results. Benchmarking for Quality Management and Technology, 4 (4), 273 – 285.
[68]. Wagner H. M. (2002). And then there were none. Operations Research, 50(1), 217-226.
[69]. Walsham, G. (1993). Interpreting information systems in organizations. New York: John Wiley.
[70]. Wanjogu, H. K., Iravo, M., & Arani, W. (2015). Factor affecting materials management: A survey of small and medium sized manufacturing firms in industrial area Nairobi, Kenya. The Strategic Journal of Business and Change Management, 2(69), 689-708.
[71]. Waruiru, W. E., & Kagiri, A.W. (2013). Effects of succession planning strategy on the performance of international non-governmental organizations in Kenya. International Journal of Science and Research, 4 (5), 3147-3155.
[72]. Water, D. (2008). Inventory control and management (2nd ed.). John Wiley & Sons.
[73]. Weick, K. (1990). Technology as equivoque: Sensemaking in new technologies. In P.S. Goodman and L.S. Sproull (Eds.), Technology and organizations (pp.1-44). San Francisco, CA: Jossey-Bass.
[74]. Ziukov, S. (2015). A literature review on models of inventory management under uncertainty. Journal of Business Systems and Economics, 5 (1), 26-35.