INVENTORY MANAGEMENT AND THE PERFORMANCE OF MANUFACTURING FIRMS IN NIGERIA

BY

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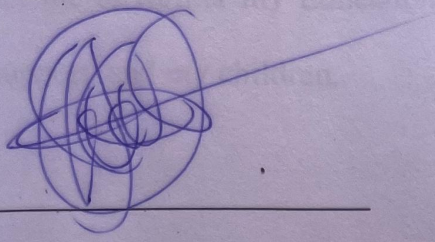
CERTIFICATION

This project has been supervised and approved as having satisfied the condition for the award of Bachelor of Science (B.Sc.) Degree in the department of Banking and Finance, University of Benin, Benin city, Edo State.



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CHAPTER ONE

1.1 INTRODUCTION

According to Heifer and Render (1991), inventory is defined as any stored resources used to satisfy current or future need. However, inventory constitutes the most expensive assets of an organization, presenting a large portion of total invented capital. Therefore, operating managers are requiring to put in place an up-to-date system for managing inventory. On one hand, a firm may try to reduce cost by reducing on hand inventory but this may come counterproductive if inadequate inventory leads to distribution chain. This unavoidable leads to loss of sales and goodwill as customers become dissatisfied or fed up. On the other hand, excessive inventory can lead to trying up of capital or disrupt an organizing's cost flow and endanger its liquidity positive. Hence, a company must reach a balance between inventory investment and customs service level. Maximum stock level and cost maximization being a cardinal factor in obtaining this balance.

Over the years, the call for a better way of managing inventory has led to the development of a number of scientific models, all targeted at reducing inventory cost while maximizing or eliminating it advice effect. The hallmark of this endeavors is, the „just –in –time inventory System" which is rapidly being adopted by manufacturing in the advanced and keenly competitive economy of the great west. Despite the, even minimal efficiency is a problem in most Nigerian production firms. However, obviously having identified the strategies importance of the inventory cost maximizing to their

ABSTRACT

The study reexamines the essence of inventory management and the performance of manufacturing firms in Nigeria. The aim of the study is to investigate and ascertain areas of lapses by the company and offer effective ways and solutions in which the manufacturing company can explore the services of inventory management to effect its objectives. Based on the analysis, it was discovered that inventory management plays a vital role in the manufacturing company. A well functional inventory management following the recommendations can bring about proper management there by enhancing proper and effective production and it will equally ensure the effective, efficient and adequate use of materials and resources in the manufacturing company

b) Some items are hold in stock until they become obsolete or expired or spoilt in the case of chemical and certain raw materials.

c) Unnecessary large inventory carrying cost in firms of storage space insurance cover and security cost.

d) Due to different sources of items qualifies are often compromised. This is especially the case with motor space parts.

e) Overtaking of items in common place. In one recent case, it was discovered that going by the average demand rate, the central store has enough stock of particular battling machinery spare to last for fifty years.

f) Improper storage practices leading to spoilage or loss of quality due to ignorant exposure to advice conditions such as sun, rain or heat.

g) Improper co-ordination of the stock of different parts mean that a production line, for instance , may be lying unused in another plant.

h) Preventable down time at a plant with resulted less of scale.

i) Poor forecast of demand at certain items leads to stock –out and loss of emergency order with their association premium.

j) large variation in the purse price of the same items held purchased and held at various locations

overall cost reduction endeavor, some are at present exploring way of establishing an efficient and cost-effective inventory system. This project is a contribution to those employing ways as well as those still reluctant in evaluating options for upgrading their inventory management system or practice.

1.2 STATEMENT OF RESEARCH PROBLEMS

Preliminary studies show that, major production firms in Nigeria have separate parts, where spears required for operation and repair of production lines as well as motor vehicle such as sales trunks are kept. The intention is that each plant also operates a raw material and finished goods, warehouse. In addition, there is a central store where the bulk of inventory is kept. There are over 4,000 different motor vehicle spares parts and over 8,000 machinery spare parts whereas the bulk of machinery spares, mostly improved, are procured and distribution as demanded for various plants, the pants undertake the purchased of most of the other spare parts.

Despite the large number, the size and complexities of term held in inventory at the central store and plant location, there is no clearly identified scientific approach to managing these items. Rather, it is subject mostly to the rule of trump and the expenses of the individuals concerned. Demand of various items is not kept, and little attention is paid to inventory candying cost. The major consequences of the situation are:

a) Purchasing of certain items is unnecessary replicated at various locations.

1.3 OBJECTIVES OF THE STUDY

The specific objectives were to:

1. To ascertain the extent at which inventory control affects productivity of selected manufacturing firms
2. To determine the nature of the relationship between demand management and customer satisfaction of selected manufacturing firms
3. To determine the effect of Just – in- time on growth of selected manufacturing firms
4. To assist in developing a cost optimizing inventory model that would serves special need of the organization taking into account, various limitations imposed by our operating environment.

1.4 HYPOTHESES OF THE STUDY

Based on the problems and objectives of this study, the following hypotheses are formulated for this research.

H_0: There is no significant relationship between low productivity and poor inventories management.

H_1: There is a significant relationship between low productivity and poor inventories management.

H_0: There is no significant relationship between proper inventory policies and productivity in a manufacturing company.

H_2: There is a significant relationship between proper inventory policies and productivity in a manufacturing company.

1.5 RESEARCH QUESTIONS

With the above objectives in focus, the study seeks to find answers to the following questions

1. To what extent does inventory control affect the productivity of selected manufacturing firms?
2. What is the nature of the relationship between demand management and customer satisfaction of selected manufacturing firms?
3. What is the effect of Just– in- time on the growth of the selected manufacturing firms?

1.6 SIGNIFICANT OF THE STUDY

The significance of this study lies on the fact that with improved inventory control and management in manufacturing companies, the following persons may benefit from it:

It will be significant to manufacturing companies, firms and businesses as it will enable them keep an adequate inventory control and ensure that they do not run out of stock or have excess stock which can endanger their liquidity position. It will also help to meet consumer's demands or quest. It is also important to the government as it will help to reduce waste of investment inventory. It will also help lecturers to really know the importance of inventory control so that they will be able to impact it on

their students. This study will also reveal the relevant methods to be used in preventing mismanagement; it will also improve stock control which has led to the mismanagement and unproductively of materials.

1.7 SCOPE OF THE STUDY

The research work on the inventory management if focused on the performance of manufacturing firms in Nigeria.

1.8 LIMITATION OF THE STUDY

Some limitations and factors in this research study are as follows:-

i. The time required for the research and the submission of this work is very short and the researcher was unable to go through all manufacturing companies.

ii. Financial constraints:-Finance which is the most important resource for this work was not readily available.

iii. Uncooperative attitudes of some of my respondents:- Some companies restricted their employees from giving out information about the company to outsiders without adequate permission from the management and even when this permission was obtained at the long run, many vital information were not revealed because they were regarded as the privacy of the company.

1.9 DEFINITION OF TERMS

INVENTORY: This is a record of a business" current assets. It can also be described as the merchandise or supplies held or in transit at a particular point in time.

The Microsoft Encarta premium defined it as the quantity of goods and materials on hand. A manufacturer's inventory represents those items that are ready and available for sale.

According to Nwaorgu (2005:123), inventory can be defined as a tangible property held to resale in the ordinary course or business, in the production for sale, to be consumed in the production of goods and services

According to Jain (1999:472), inventory is the aggregate of these items of intangible property which are held for sale in the ordinary cause of the business, held in the process of production for such sales to be currently consumed in the production of goods and services to be made available for sale.

According to Morse (1997:454), inventory is a general term describing goods which are held in the store house and stock yards, the bulk of which is usually intended for the connection with production or operation activities and also finished products awaiting dispatch to customers.

However, according to Ama (2000:209), inventory is the stock of goods a firm is producing for sale and the components that make up the goods.

A key decision in manufacturing and retail is how much inventory to keep on hand. Once an inventory level is established, it becomes an important input to the budgeting system.

CHAPTER TWO

LITERATURE REVIEW

2.1 INTRODUCTION

A truly effective inventory management system will minimize the complexes involved in planning, executing and controlling a supply chain network which is critical to business success. The opportunities available by improving a company's inventory management can significantly improve bottom line business performance.

Oftentimes, inventory is the largest items in a manufacturer's or distributor's balance sheet. As a result, there is a lot of management emphasis on keeping inventories down so that they will not consume too much cash.

2.2 CONCEPT OF INVENTORY

Inventories are vital to the successful functioning of manufacturing and retailing organizations. This is because many companies hold inventories as part of their business operation. Inventories make up the most significant part of current assets of most companies especially the manufacturing companies. The need for management to ensure inventory control if properly managed cannot be over emphasized. A firm neglecting inventory management will be jeopardizing its ling run profitability and it may end up failing in its business. The definition of inventory has been defined by many professional bodies and scholars in different ways.

2.2.1 TYPES OF INVENTORY

Vohra (2008) classified inventories according to the purpose for which they are held. He stated that inventories may be held for a variety of purposes, but in general these are five types of inventories that an organization can use for serving these purposes and they include:

1. MOVEMENT INVENTORIES

This is also called transit inventories. It is due to the fact that transportation time is involved in transferring substantial amount of resources for example, when goods are on transit they cannot provide any service to the customers.

2. BUFFER INVENTORIES

This is also known as reserve stock. This is a stock of basic commodity accumulated by a government when supplies are plenty, and prices low and held for use when supplies are short to establish the price. Buffer inventories are held so as to protect against the uncertainties of demand and supply. An organization generally knows the average and could well exceed it. To be able to handle this kind of situation, inventories may beheld in excess of the average or expected demand. The lead time may be known but a times unpredictable events could cause the lead time to vary.

3. ANTICIPATION INVENTORIES

These inventories are held for the purpose of the future demand for a product. This situation occurs when a company embarks on the production of some specialized items before the season for them set in for example, the production of umbrellas and rain coat before the rainy season sets in.

4 DE-COUPLING INVENTORIES

This is to disengage different parts of the production system. Inventories in-between the various machines are held in order to disengage the processing on these machines. Different machines and people normally work at different rates so that when a machine breaks down the work will not stop. The de-coupling inventories act as a cushioning effect in the face of the varying work rates and machine failures.

5. CYCLE INVENTORIES

These inventories are held for the purpose of purchases which are usually made in lots rather than for the exact amounts which may be needed at a point in time. If all purchases are made exactly as at when the item is required, these would be no cycle inventories.

2.3 CLASSIFICATION OF INVENTORIES

According to Lucy (2004), inventories are classified in manufacturing companies as follows:-

Stock of raw materials and work-in-progress facilitates production while stock of finished goods is required for the smooth marketing operations.

2.4 INVENTORY POLICY

The type of decision to be taken about inventory management is similar regardless of the size and complexity of the business. However, all decisions may be made by one man in a simpler or smaller business, while a bigger or separate level of top management will usually be concerned with inventory decision in complex businesses.

Inventory policies are used as guides in the process of establishing programs and controls in business organizations so that a suitable rate of return will be earned on the inventory investment. In most cases the decisions or policies will cover:

i. How much to order i.e. the optimal quantity of an item that could be ordered whenever an order is placed.
ii. When should an order be placed?
iii. How much safety stock should be kept.

2.4.1 REASONS FOR INVENTORY

There are many reasons why organizations maintain inventory of goods. The fundamental reasons for doing so is that it is either physically impossible or economically unsound to have goods manufactured whenever they are demanded for, without inventory of goods, customers would have to wait until the goods they ordered for are manufactured.

1. RAW MATERIALS:-

This is defined as an unprocessed natural product used in manufacturing processes. Horngren (2007:37) defined raw materials as direct materials in stock awaiting use in the manufacturing process. Finished goods of one industry might be the raw materials of another. Pandey (2007) defines raw materials as these basic inputs that are converted into finished products through the manufacturing process. This usually consists of the essential item needed to create or make a finished product.

2. WORK IN PROGRESS:

This can be defined as an incomplete ongoing piece of work. It also refers to items that are partially completed but are not yet finished products. It also refers to the stock of all materials in which processing has commenced but it is not yet completed. Such materials are usually found between raw materials and finished goods. Malomo (1999:307) defined working-progress as partly finished goods and material subassemblies between manufacturing stages.

3. FINISHED GOODS:-

These are the products that are completed and that are ready to be purchased by consumers. Pandey (2002) defined finished goods as those products that are completed and are ready for sale.

There are some other reasons for keeping inventory, they are; the fluctuating nature of price of raw materials may make an organization stock up inventory of raw materials when price is low, it is good and profitable for an organization to buy in large quantity and keep it in inventory so it can last through high price seasons.

According to Morgan (1960), the reasons for inventory are as follows:

i. To give customers assurance of availability

ii. To handle production variations.

iii. To provide customer service in the face of sales fluctuation another problems.

iv. To await shipment to fill unexpected orders.

v. To allow for batch production.

vi. To provide raw materials storage.

vii. To keep storage equipment operational

viii. To protect against strike and work stoppages

ix. To be ready when unforeseen circumstances occur.

According to Pandey (2002:885), a company should maintain adequate stock of material for an interrupted production for customer's supply.

The following are reasons for inventory:

i. To take advantage of seasonal fluctuations in price and price will be minimized by having inventories of raw materials.

ii. To take advantage of price discounts when orders are placed in large quantities. iii. To allow firms to meet orders that arte placed in spite of temporary unexpected fluctuations in the rate of output.

2.5 INVENTORY CONTROL

Control in management is the activity of determining whether resources have been provided and production carried out in accordance with plan and where this is not the case, taking corrective action is needed. Control is the process of instituting procedures and obtaining feedback as needed to ensure that all parts of the organization are functioning effectively and moving towards the overall company's goals.

Inventory control can be defined as an inventory p0licy designed to obtain right quantity and right quality of raw materials at the right places. It can also be defined as the system used in the firm to control a firm's investment in stock. It includes the recording and monitoring of stock levels, forecasting future demand and deciding when and how many to order.

Nweze (2004:423), defined inventory control as the means of ensuring that actual flow of inventory in an organization conform to plan.

Ezeani (2008:25), defined inventory control as the techniques used by store managers to ensure that materials are made available when they are needed in the quantity, quality and price that they are needed without therisk of stock out and over stocking.

However, for inventory control to be effective there must be a plan which is the development of objectives in an organization and preparation of various budgets to achieve these objectives. Planning of inventory is very essential in an organization. A firm should be able to determine its optimum level of investment in inventories. This situation can only be possible when the company ensures that stocks are sufficient to meet the requirements of production and sales, and the company must avoid holding surplus inventories that are unnecessary because it increases the risk of obsolescence. Against this, a company cannot afford loss of sales because of insufficient inventories and at the same time, it is expensive to have more inventories on hand than necessary.

Various departments within the same company adopt different views and attitudes towards inventories. For instance, the sales department of a company might desire large inventory in reserve to meet virtually every demand that comes. The production department within the same company would similarly ask for large inventories of materials so that the production system will not be interrupted. On the other hand, the finance department would always request for a minimum investment in inventories so that the fund can be used somewhere else for other purposes. Therefore, inventory control involves the recording and monitoring of stock levels, determining the optimal levels and forecasting future demands and decision. The main aim of inventory control is to minimize cost associated with stock.

2.5.1 Purposes of inventory control

The following are the purposes of inventory control:

i. To minimize cost

ii. To maximize profit

iii. To maximize the return on investment.

iv. To avoid running out of stock.

v. To prevent surplus stock that are unnecessary

vi. To keep inventory with an available storage capacity.

vii. To control capital investment in order to avoid mismanagement and misappropriation of funds.

viii. To maximize sales.

2.6 COST ASSOCIATED WITH INVENTORY

In order to determine an optimal inventory level or policy, the method often used is the cost function. The classical inventory analysis identifies four manor cost components and it all depends on the structure of an inventory situation.

The four major components of the cost are:

1. PURCHASE COST:

This is described as the purchase price for the items that are bought from external sources and the production cost if the items are produced within the organization. It also refers to the nominal cost of inventory. This may be constant per unit or it may vary as quantity purchased increases or decreases. The quantity of discounts are considered because they are available for bulk purchases and savings in production cost which would be possible with longer batch run which affect the decision.

2. ORDERING COST:

This can be defined as the cost incurred in sending inquiries, writing purchased order. It is also when goods are purchased from outside. According to Okeke (1997), ordering cost refers to the cost associated with replenishing the inventory for purchased goods. According to Adeniji (2008), ordering cost is a cost incurred in placing the order up to the point of receiving the goods into the warehouse. Inventory ordering cost include:

i. Cost of processing the papers.
ii. Cost of communications –telephone, e-mail, fax.
iii. Carriage in costs.
iv. Transport and travel.

3. CARRYING OR HOLDING COST

This refers to cost which consist of all cost relating to carrying inventories. According to

Okeke (1997), carrying cost refers to cost associated with maintaining the items in inventory. According to Adeniji (2008), carrying cost is the cost incurred whenever a material is stored. They are incurred because the firm has decided to maintain inventories. Carrying costs are costs that are associated with storing an item in inventory and they are proportional to the amount of the inventory and the time in which the inventory is held. Carrying cost includes:

i. Cost of funds tied down

ii. Insurance premium costs.

iii. Inventory handling costs.

iv. Heat light power and depreciation costs associated with the inventory storage facilities.

v. Cost of spoilage, obsolescence (machines). Deterioration (for perishable goods) and evaporation (for volatile products).

vi. General insurance and security costs.

Carrying cost is considered to be variable cost because the larger the stock, the more the cost associated with maintaining the inventory of the item. The cost of carrying an inventory of item is sometimes expressed as a percentage of the value of the item and it is usually expressed in terms of the amount of money per unit time period.

4. STOCK-OUT COST:

This cost is incurred when customer's demands cannot be fulfilled because the inventory is completely depleted. It refers to the disrupted production when materials are

unavailable. According to Okeke (1997), stock is as a result of an item that is needed but its inventory level is completely depleted in a manufacturing system. a stock-out might cause production delays idle labour, equipment and sometimes emergency supply order in the warehouse or retail production and this may lead to loss of sales. According to Adeniji (2008), stock-out cost is the cost that involves a situation where customers" demands cannot be met because the stock is exhausted. They are the opportunity cost of not having a stock item when there is effective demand. Stock-out cost simply implies shortage of inventories of items. When an organization runs out of supplies for its needs, it implies that its inventory level is too low and this situation leads to loss of profit through cost sales, loss of future sales because it drives away customers, wages being paid for idle time, loss of customers goodwill and customers canceling their orders because of delay in the delivery.

2.7 INVENTORY MODEL

Attempts were made to employ analytical techniques in studying inventory problems. The real need for the analysis was recognized by industries by which items were produced in lots and the stored at a factory warehouse.

Formulas were obtained which was known as the simple lot size formula and it was further developed by dependent authors, but the most widely accepted formula is the fixed order quantity system referred to as the Wilson formula since it was derived as an integrated part of the inventory control scheme which was sold by him to many

Ezeani (2008) defined economic order quantity as the amount of materials to be ordered at one time. It is defined as the quantity of inventory item to order so that inventory costs are minimized over the firm's planning period. Olowe (2008), defined economic order quantity as the optimal ordering quantity for an item that will minimize cost. However, Horngren (2007), wrote that economic order quantity model is a decision model that calculates the optimal quantity of inventory of items ordered under a given set of assumptions:

ASSUMPTIONS OF ECONOMIC ORDER QUANTITYACCORDING TO THE HORVGREN (2007)

i. The demand for the item is certain, continuous and constant overtime.

ii. The same quantity is being ordered at each re-order point. iii. The lead time is known and fixed and the delivery time is instantaneous.

iv. The purchase price of the item is constant, that is no discounts is available for bulk purchases.

v. The inventory is replenished immediately as the stock level gets to zero.

vi. No stock-out occurs

vii. vii. The per unit holding cost and the ordering cost are constant within the range of the quantities to be ordered.

organizations. In this system, the re-order quantity is fixed and the re-order is placed for quantity whenever the inventory is hand drops to the re-order point. Another model was later introduced and it is known as the

"replenishment system". In this system, the re-order date is fixed and the re- order quantity varies depending on the inventory on hand.

2.8 ECONOMIC ORDER QUANTITY

The optimum order may be determined by the costs that are affected by either the quantity of inventories held or the number of orders placed. There is a problem of minimizing the cost of holding inventories and the cost of ordering inventories at the same time because if more units are ordered at one time, then few orders will be required within the same period of time and this will mean a reduction in the ordering costs. However, when few orders are placed, large average inventories must be maintained and this will mean an increase in the holding cost.

The aim of inventory planning is to ascertain the most efficient way to minimize the total cost of ordering and the h holding cost and the model that minimizes the combined cost is the economic order quantity which was originally formulated in 1915 by F.W. Harris.

Economic order quantity can be described as the ideal order size that is the size of an order for goods that minimizes the sum of shipping, handling and carrying costs.

2.8.1 REPLENISHMENT MODEL

In this model, inventory costs are not considered explicitly and there is no fixed re-order quantity rather inventory is reviewed at periodic intervals and if there has been any sales since the last review, an order is placed. The replenishment level is aimed at keeping inventory at a minimum level consistent with maintaining some particular protection against stock-out and a particular schedule of the periodic review of re- orders.

2.9 INVENTORY LEVEL RE-ORDER LEVEL

Re-order level is the level where an item in stock reaches and these will be an order for replenishment. There will be a certain level in which the items in stock will fall and it will necessitate a new order to be placed.

Pandey defined re-order level as the level at which an order should be placed in order to replenish the inventory. He enumerated some of the points that should be taken into consideration before determining the re-order point and they include: lead time, the economic quantity and the average time. Lead time is the time taken in receiving the delivery of inventory after the order has been placed.

II MAXIMUM STOCK

The maximum stock level is set after considering the storage capital available and its cost, the supply of capital, risk of deterioration and obsolescence and economic purchasing quantities.

III. Minimum stock level:

Due to the fact that each item in stock has a minimum level, the actual stock held should not fall below this level if operations are not to be disrupted. Joseph Baggot saw minimum stock level as the buffer stock. He stated that the minimum stock level is a precaution taken against delays in delivery period and that it depends on the rate of consumption during an emergency period.

The minimum stock level is the lowest quantity to which a particular product should be allowed to drop if deliveries are to be maintained and in arriving at this, the factors to be considered are; the length of time required for the delivery on the part of the suppliers and the possibility of late delivery or abnormal usage. It is often difficult to predict the usage and the lead time or delivery time accurately. The demand for goods may fluctuate from day to day or from week to week. Also, the actual delivery time may be different from the estimated lead time. In a case where the actual usage increases or delivery of inventory is delayed, the firm can have a problem of stock-out which will be very costly to the firm. The firm or company asafety stock in order to guard it against stock-out.

IV OPTIMAL STOCK LEVELS

The optimal stock level is the stock level that is either too large or too small that is to say it is between the maximum stock level and the minimum stock level. The stock level of a company depends on the nature and the volume of the operation therefore, it sit he level that makes use of the capacity of the storeroom.

The current production cost are simultaneous with the current sales revenue in order to obtain a realistic profit for the current period and this is because the most important advantage of this method is that it has the ability to give the most current cost of a product since the materials used are charged at the current prices. The disadvantage of this method is that the oldest materials are left in stock thereby exposing them to risk of loss through obsolescence, deterioration or depreciation.

3. BASE STOCK METHODS:

This method is not an independent method because it makes use of both the FIFO and the LIFO method. The base stock method according to Osisioma (1990) implies a fixed minimum stock carried at the original cost. He said it should be set aside and should be issued out when an emergency situation arises. Except the minimum of buffer stock, the subsequent materials received may be issued and charged on the basis of any stock valuation method.

4. STANDARD PRICE MEHTOD

This method uses a predetermined price for pricing all the materials that are issued out. The standard prices may be set over a given period of time after all factors which affect prices of materials may have been taken into consideration. The use of standard prices may result in profit if the actual materials price is low and it may also result in loss if the reverse is the case. The main objective of the standard price is to ensure the efficiency in

2.10 INVENTORY VALUATION METHOD

The main objective of inventory value is to produce accurate and meaningful value for purchases of product cost and income determination and this is because the different valuation methods have different effect on a firm's order.

1. FIRST IN-FIRST OUT (FIFO):

This method implies that the oldest goods are issued out first that is, materials are issued. Out in the order in which they were received. Most times, materials or goods may not be issued out in this order but it will be a good and effective store keeping practice if this order is maintained because it checks material obsolescence, deterioration and depreciation and it ensures that these materials are issued out at the actual cost thereby avoiding unrealized profits or losses which may result from random issue of the materials

FIFO method poses problem in times of prices being changed because the cost of goods sold is likely to be understated or underestimated during inflation as old prices are adopted to value the material used.

2. LAST IN FIRST –OUT:

This method is an opposite of the FIFO method because it implies that the latest materials received are issued out first thereby leaving oldest ones in stock and this means that the materials which are issued for production are charged on the recent process while the stock on hand I s valued at the oldest prices.

the purchase of materials. Most times it is difficult to establish an acceptable standard price of all materials.

5. AVERAGE PRICE METHOD:

This method is the weighted average which determines the unit price by dividing the total cost by the quantity of materials because all materials issued are charged on the average price and this price makes the cost of materials uniform rather than the actual cost.

2.11 INVENTORY ACCOUNTING SYSTEM

Store accounts facilitates materials cost in two ways. They provide prices by which any particular items can be calculated. Secondly, a comparison of the total value of materials charges to various activities provides a check that all the materials have been properly calculated.

An effective inventory accounting system facilitates the provision of relevant inventory data to the management in determining the amount of inventories at the end of each accounting period and it minimized efforts used in data processing. Accountants are needed in inventory management because of the important role of the inventory accounting system in inventory management. The accounting system provides useful and accurate figures to managers for adequate inventory management. It also gives useful advice on the actual quantity of stock valued. The accounting system gathers

and transmits data to the inventory manages to enable him carry out his duties effectively and efficiently. The major problem in maintain accurate accounting record for inventory management is the constant fluctuation in prices of materials used in inventories.

2.12 STOCK TAKING METHODS

Stock taking is very necessary for an efficient day to day operation in business because of errors which may occur. There are two major approaches, they are:

1. PERPETUAL STOCK TAKING:

This approach involves keeping a running balance on the store records after each materials is received and issued. It is also known as the continuous stock taking which involves the regular taking of the samples of stock and the comparison of the actual quantity on hand with the stock records. Differences may occur between the physical stock and the balance on the store records as a result of errors which is why the control element is the comparison of these differences.

2. PERIODIC STOCK TAKING:

This is done when store are closed. Every item is counted and valued at a fixed date under the supervision of the firm's internal auditors.

2.13 Empirical Literature

Inventories are assets of the firm and require investment and hence involve the commitment of firm's resources. The inventories need not be viewed as an idle asset

rather these are an integral part of firm's operations. But if the inventories are too big, they become a strain on the resources, or if they are too small, the firm may lose the sales. Therefore, the firm must have an optimum level of inventories. Inventory is actually money, which is available in the shape of materials (raw materials, in-process and finished products), equipment, storage space, work-time etc. Inventory is a list of goods and materials, or those goods and materials themselves, held available in stock by a business. Inventory are held in order to manage and hide from the customer the fact that manufacture/supply delay is longer than delivery delay, and also to ease the effect of imperfections. In the manufacturing process that lower production efficiencies if production capacity stands idle for lack of materials. Any organisation which is into production, trading, sale and service of a product will necessarily hold stock of various physical resources to aid in future consumption and sale. While inventory is a necessary evil of any such business, it may be noted that the organization hold inventories for various reasons, which include speculative purposes, functional purposes, physical necessities etc.

A component of supply chain management, inventory management supervises the flow of goods from manufacturers to warehouses and from these facilities to point of sale. A key function of inventory management is to keep a detailed record of each new or returned product as it enters or leaves a warehouse or point of sale. Inventory management is a

science primarily about specifying the shape and placement of stocked goods. It is required at different locations within a facility or within many locations of a supply network to precede the regular and planned course of production and stock of materials. 1 Inventory control is concerned with achieving an optimum balance between two competing objectives. 'minimizing the investment in inventory. 'maximizing the service levels to customer's and its operating departments.

Yue Wang, Yingjie Ju (2019) This study developed a research model to examine the impact conducted in Chineand collected 271 valid data from the service providers. The results illustrated the importance of continuous information sharing in logistics service. Based on the results they put forward management suggestions from the perspective of government and enterprises.

Punam Khobragode, et al (2018) Inventory management system is software which is helpful for the businesses operate hardware stores, where storeowner keeps the records of sales and purchase. Mismanaged inventory means disappointed customers, too much cash tied up in warehouses and slower sales. This project eliminates the paper work, human faults, manual delay and speed up process. Inventory management system will have the ability to track sales and available inventory, tells a storeowner when it's time to reorder and how much to purchase. Inventory management system is a windows application developed for windows operating systems which focused in the area of inventory control and generates the various required reports.

DATA COLLECTION METHOD

This data collected for the study is mainly through secondary data only.

ABC ANALYSIS

To classify items under ABC classification scheme, annual usage/ consumption value is calculated through Eq. (1). Items are arranged in the descending order of their annual usage starting with the highest annual usage down to the smallest usage. Percentage annual usage of each item is obtained from annual usage values. Next step is to calculate percentage cumulative usage of forty items. The number of items is expressed into cumulative item percentages.

Item	classification No. of items	%	value
A	8	20%	80.26%
B	16	40%	1
C	16	20%	5.31%

usage of %of items INFERENCE:

From the above classification result of ABC analysis shown in Table2.1.3 , "A" classes are those which constitute 20% of total items and occupies 80.26% of total value usage per annum.

FENG XU (2017) stated that in searching for the optimal inventory control policy, the objective is to minimize the expected total costs related, of which the shortage cost is an important element. Due to the difficulty in calculating the indirect cost of the loss of goodwill resulted from the shortage, practitioners and researchers often simply assume a fixed penalty cost on the inventory shortage or switch to the alternative method by assigning a specific customer service level. The development of an appropriate tool for measuring the shortage cost can help a business control the total costs and improve the productivity more effectively. This paper proposes probabilistic measurements of the shortage cost, based on mathematical relationship between the cost and the shortage amount. The derived closed form estimates of the expected shortage cost value can then be applied to support the determination of the optimal inventory control policy.

2.14 METHODOLOGY

Necessary data for this study were collected from are owned retail shop of Reliance digital Chennai. Some data were collected by Interaction with personnel of the retail shop and direct observation and the remaining data were collected from turnover statements, monthly inventory statements and record file. The proposed methodology was applied on 40 different items.

RESEARCH TYPE : This study was based on analytical research, the researcher has to use facts or information already available and analyse these to make a critical evaluation.

The EOQ will help the shop to prevent the problem of overstock and reduce the ordering cost.

Safety Stock Calculation: To determine safety stock, lead time (maximum & minimum) is collected from the shop manager which varies between two and eight days. Demand is assumed to be constant and the desired cycle service level (CSL) is assumed to be 95%, hence the Z value is 1.645.

INFERENCE:

Results of safety stock depicted in Table 6 shows when the retail manager should reorder to avoid stock-out and how much the manager can hold the inventory in reserve stock per annum.

2.15 INVENTORY TURNOVER RATIO

Years	Cost of goods SoldRs. In crores)	Average value invetnory (Rs. In crores)	Inventory of turnover (Rs. In crores)
2014-2015	36618.4	1303.35	28.09
2015-2016	35587.1	2472.30	14.39
2016-2017	49090.0	203.10	241.70
2017-2018	48878.6	97.35	502.09
2018-2019	55133.6	44.00	1253.03

"B" classes are those which constitute 40% of total items and occupy 15.31%oftotal value usage per annum. And, "C" classes are those which constitute 40%of total items and occupy

4.43% of total value usage per annum. As the existing retail shop has not put different degree of control among the three categories of items, this implies lack of inventory control technique. This analysis has shown what level of control should be imposed on different items.

EOQ ANALYSIS:

Economic order quantity and optimum order frequency per year for different components are calculated through Eqs. (1) & (2)

Calculation of EOQ:

EOQ INFERENCE:

From the above analysis, the calculated EOQ has been compared with the number of units of each component purchased in the organisation which is shown in Table 2.2.11. It is found that there is a variation in the calculated EOQ and current ordering policy of the retail shop. This is because the shop place order frequently when demand arises without managing EOQ. So, the number of units ordered is small while number of orders is high. It is understood that the company is not following EOQ for purchasing the materials and therefore the inventory management is not satisfactory.

INFERENCE:

From the above table shows the Stock Turnover / Inventory Ratio position of the Reliance

Retail Limited. The Stock Turnover / Inventory Ratio ranges from 28.09 to 1253.03duringthe study period for the study period 2014-15 to 2018-19.

V. RESULTS & DISCUSSION

Inventory turnover ratio analysis for the period 2014 – 2019 there is an increasing trend in the turnover from 28% to 1253%. This shows the inventory of the inventory of the company is properly managed and the technique which is used to manage inventory are effective this will leads to profit for the company. But in the year 2011 – 2012 the inventory techniques are not properly used that results low inventory turnover. The ratio in first year was 28.09 to its sales which rose to 241.07 in the third year and 1253 in the fifth year. Increasing trend in inventory turnover ratio denotes positive sign for the organization because the sales are also increasing.

An increasing trend shows that the company is maintaining its inventory well. It is found that the organization is following EOQ technique. The company is working as per the defined EOQ level. Overall the working of EOQ is reasonable. From the safety stock calculation, it can be determined how much inventory the company can keep in its reserve stock per annum. Through this analysis it is known that the organization is having enough stock at all times. Through ABC analysis one comes to know about important

2.16 THEORETICAL LITERATURE

According to Heizer and Render (1991), inventory management models help to answering two major important questions. That applies each item stock.

a) When to place order for an item

b) Quality of an item to order.

2.16.1 THE ECONOMIC ORDER QUALITY (EOQ)

MODEL

EOQ is one of the oldest and most community used inventory control techniques.

According to Mighty (1974) research on it use data back to the 1920, the techniques is relatively easy to use but makes a number of simplistic assumptions. These include.

a) That the demand is known as constant for any particular period.

b) Lead time (hat is between placement and receipts of an order) is known and constant; c)Quantity discounts are not possible;

d) Inventory from one order from one order arise in one batch at one point in time

e) The only variable cost is the setup cost and the inventory holding cost.

When these assumptions are mind, the curve of inventory usage over time is shown to be below.

items in the organization. The company is following ABC technique of inventory management very efficiently. There are 67% items in the A category. B category has 23% items and C category has 10%items.Aclassification items have more annual consumption costs and creates more inventory in stores. So Economic Order Quantity and re-order level will be calculated for these A type items hence reduce inventory and annual consumption cost.

Existing inventory management system of the organization is good but if inventory management system is to be improved they should adopt some new inventory management system. The organization should also try to adapt more inventory management techniques like Just In Time (JIT) inventory system. This technique will save the time of the organization and will also reduce the inventory holding cost in the organization. The retail shop should have tighter control to „A" class items rather than „B" and „C" classes items as

A" class items have the highest consumption of value. Safety stock should be maintained to reduce the probability of stock-out of items. EOQ can be an appropriate technique to lower the overstock and minimise total inventory cost. Using EOQ, the ordering frequency of the shop can be reduced substantially which in turn will reduce total ordering cost annually.

5. Manufacturing companies should be encouraged to improve on their inventory management as well as investment to improve their financial performance.

6. The study also recommends that manufacturing companies should invest in liquid assets that improve the inventory management of the company to ensure that it's able to meet its short run financial obligation as and when they fall due.

7. Managers should balance between performance and liquidity of their companies. This means they should maintain a trade-off between performance and liquidity. Profitability plays an important role in the financial position of enterprises.

Therefore, with the EOQ model, the optimal order quantity occurs at the point of interaction that this deduction applies because the holding cost curve is linear and being at the origin.

2.16. 3 PROBABILITY MODEL

The classical of EOQ and makes the assumption that the demand for a product is constants and uniform in most real-life situation, the demand is not exactly shown, but can be specified by means of probability distribution The probability inventory model can be applied to resolve such cases. An important concern of management IS sustaining an adequate service level in the face of uncertain demand. The service level therefore becomes a complement of the probability of a stock out. Uncertain demand rises. The probability of stock out, one method of reducing stock out is to hold extra inventory. Such inventory is referred. To as a safety or buffers stock and involves adding a number of units of stock as to buffer to the order level.

2.16.4 DETERMINING BUFFER STOCK

Aberrantly, the butler, Stock, the smaller the risk of stock, however our aim is to apply a mode that would allow us to set buffer stock as reasonable level such that the risk of stock- out, acceptable. An optimum, thus, is that we would minimize the combined expected inventory plus that out Quantitatively it is

parameter. As noted by Melod (1992), an inventory policy in the reactive system, would consider at least two of these parameters namely:

a) The re-order point
b) A review period in time
c) The quantity ordered when re-ordered level is attained these parameters are represented VIZ: > = RE-order point, R = Review period.

Q = Order quantity

S = Maximum allowable stock level

Although these parameters can produce sixteen different policy considerations, only five are normally used (Melodi 1992). These five namely (SQ). (SS). (RS), (RSS) and (RSQ). For briefly explained below.

2.16. 7 ORDER POINT, ORDER-UP-LEVEL (SS)

A level statement of this policy is whenever the stock level reaches the reordering point. Please order for order quantity. Thus, thus system is also refried to as two bin policies. The amount of stock one bin corresponding to the order point. As long as units remain in the first bin, demand is satisfied from it when this bin is exhausted, And the second bin is opened, replenishment reorder is triggered.

2.16.8 ORDER POINT, ORDER QUANTITY POLICY (SQ).

This policy involves a constant review of the stock position so that whenever stock drops lo the reorder point, replenishment order is replaced for a quality that would bring stock

Y = Mean demand plus safety

Y=Mean demand

Q= Standard deviation from means

Buffer stock (B) =x-u

Buffer generally z= (x-u/q) = B/o

Thus, buffer stock = B= QZ

2.16.5 MARGINAL ANALYSIS

For many inventory models, the optimal stoking policy can be determined through analysis, is based on the principles or marginal profits and marginal loss. This would add an additional unit to the Inventory Level only is expected marginal profit loss (Heizer and Render, 1991)

Let P = Probability that demand would be greater than supply (1-P) = probability that demand would be less supply.

If MP is the marginal profits and ML is Marginal Loss, then the expected marginal loss then, the expected marginal loss is (1-P)PM.

2.16.6 REACTIVE INVENTORY SYSTEM

In adopting an inventory policy to suit its aim, management is primarily with stock-out, back ordering and sales and that associated cost-person and silver (1979). The reactive inventory. policy consistent with this objective, is designed to reach certain trigger

necessary to keep a prefect system in progress with JIT, the exact amount of goods required. Arrive at the moment they are required not before or alter. Just-in-time inventory emanated from the realization that offer in production and distribution system, inventory exists (just- incase) something goes Wrong (Ammer 1997). Raw material inventory for example, is

necessary only if this is reason to believe that suppliers are undependable.

to the maximum level. A variable replenishment quality is used. This Is its major advantages over the former, it however demands transaction, involves only units lot size, the two policies became identical. In case the (SS) determined the best (SS) PATR.

2.16.9 PERIODIC REVIEW, ORDER UP-LEVEL POLICY (RS)

The system also known as the replenishment cycle system, involves that at every review period replenishment is ordered to bring stock to its maximum level. Because of the periodic review aspect of this policy, it is preferred to the point order at the replenishments of the stock in better conducted.

2.16.10 (RSS) POLICY

This can be stated thus, during the review period, it inventory level is below the maximum level, order replenishment to bring level back to the maximum. Therefore, unlike the (RS) policy, review would not necessarily lead load to parliament of order if the stock position is still the above the minimum level. This policy produces a low totality of replenishments, crying and storage costs than the others. However, much computation efforts are needed to arrive at the best RS and S combination. This through will not pose a serious problem where a computer is available for those function.

2.17 JUST-IN-TIME INVENTORY

Just-in-time inventory technique, otherwise called the ultimate in inventory management, is the hallmark of Japanese world class JT inventory represent in the maximum inventory

Taro Yamani formula:

$$N = \frac{N}{1+N(e)^2}$$

Where

N = Sample

N = population size

e = error limit

I = Constant

Therefore, n = ?

N= 60

2= 0.05

$$n = \frac{60}{1+60(0.05)^2}$$

$$= \frac{60}{1+60(0.0025)}$$

$$= \frac{60}{1+0.15}$$

$$= \frac{60}{1.15}$$

$$= \mathbf{52}$$

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 INTRODUCTION

This chapter covers the research design, the area of the study, the population of the study, the determination of the sample size, and the sources of data method of data analysis, validity of the test and the reliability of the test.

3.2 RESEARCH DESIGN

The research design adopted in this work is the survey design method which comprises of the use of questionnaires and oral interviews.

3.3 POPULATION OF THE STUDY

The population of the study for the manufacturing firm has a total number of 500 employees but because of the nature of this work, the population will be reduced to a total number of 60 which consists of the production department, sales department and the marketing department.

3.4 DETERMINATION OF THE SAMPLE SIZE ANDTECHNIQUE

The sampling technique used in this research work is the systematic random sampling with a total number of 60 top management staff comprising of the production departments, sales department and the marketing department in the manufacturing firm and the sampling size is determined using the Taro Yamani formula:

distribution of questionnaires and oral interviews. The secondary data was obtained from the relevant textbooks, journals and newspapers.

3.6 METHOD OF DATA ANALYSIS

The researcher used simple percentages to analyze the data collected. The results of the questionnaires were analyzed by the use of tables. The simple percentages used were computed and findings were presented, discussed and interpreted. The chi-square (x^2) is used in testing the hypothesis.

The chi-square (x^2)

The chi-square (x^2) is one of the standardized statistical distribution used in hypothesis testing. It was developed in 1930 by Karl Person. It enables one to know whether the discrepancy between the actual outcomes and the expected out-comes could be observed reasonably. This is to determine if the observed outcome can be attributed to chance. The formula for chi-square is represented as:

$$X^2 = \sum \frac{(0-E)}{E}$$

Where x^2 = Chi-square

E = Expected value

O = Observed value

Therefore a sample size of 52 is used.

Determination of sample size for each department

$$nh = \frac{nNh}{N}$$

Where n = sample size

Nh= population of the unit

N= total population of the study

nh= sample size per unit

PRODUCTION DEPARTMENT

$$nh = \frac{52 \times 21}{60} = 18$$

SALES DEPARTMENT

$$Nh = \frac{52 \times 20}{60} = 17$$

MARKETING DEPARTMENT

$$Nh = \frac{52 \times 20}{60} = 17$$

3.5 SOURCES OF DATA

There are two sources of data collected and used in this work and they are: the primary sources of data and the secondary of data. The primary data was generated through the

CHAPTER FOUR

DATA PRESENTATION, ANALYSIS AND INTERPRETATION

4.1 Introduction

This section presents and analyzes the regression results obtained on estimating the Specified linear model for the study. The study adopts the use of Panel least square in estimating the impact of the explanatory variables on the dependent variables Return on Equity (ROE). Our analysis was started with some basic description of the variables of interest using the descriptive analysis, the variables of interest used in the model are RCP which represents Receipt collection Period, ICP which represents Inventory Conversion Period, PDP which represents Payable Deferred Period and CCC which represents Cash Conversion Period. The sample period for the analysis was between 2014 and 2022. The statistical tool employed is the Pooled Panel Least Square (PPLS) regression. The outcome of the pooled panel least square is used in testing the Hypothesis formulated.

4.2. Data Analysis and Interpretation

Table 4.2.1 Descriptive Statistics

	ROE	RCP	ICP	PDP
Mean	0.999852	0.093535	1.067025	0.174475
Median	0.177000	0.068950	1.141000	0.154500
Maximum	44.95000	1.204900	1.404000	0.782000
Minimum	0.001000	-0.505100	0.210000	0.010000
Std. Dev.	4.882082	0.166637	0.276508	0.113629

The degree of freedom is gotten from the rows and columns of a contingency table. It is given by the number of rows minus one, multiplied by the number of columns minus one.

DF = (R-1)(C-1) or n–1 as the case maybe. The hypothesis will be at the 95% level of confidence that is 5% error limit which is 0.05.

DECISION RULE

If the calculated chi-square value (x^2) is greater than the value gotten from the chi-square distribution table (x^2e), then reject Ho which is the null hypothesis and accept Hi which is the alternative hypothesis. But if the chi- square distribution table value is greater than the calculated value, then reject Hi which is the alternative hypothesis and accept Ho which is the null hypothesis.

4.3 CORRELATION ANALYSIS

Correlation analysis was carried out with a view to describing the strength of Relationship between dependent variables (ROE) and independent variables (RCP, ICP, and PDP). The direction of relationship between the dependent and independent variables is presented in table

4.2.

Table 4.2: Pearson Correlation Matrix

	ROE	RCP	ICP	PDP
ROE	1.000000	0.024275	0.015991	-0.02979
RCP	0.024275	1.000000	0.054999	0.025093
ICP	0.015991	0.054999	1.000000	-0.101501
PDP	-0.029792	0.025093	-0.101501	1.000000

Source: Author's computation (2023) using E-views 9.0

From table 4.2, return on equity has a weak positive relationship with receivable conversion period and inventory conversion period. This positive relationship implies that an increase in receivable conversion period and inventory conversion period will result to an increase in return on equity and vice versa. Return on equity as a weak negative relationship with payable deferred period. This indicates that a rise in payable deferred period will lead to a decrease on return on equity and vice versa.

Skewnes	7.840936	2.625696	-2.369999	2.038358
Kurtosis	65.64781	20.62120	7.239262	9.967086
Jarque-Bera	20505.79	1662.246	198.8247	320.3696
Probability	0.000000	0.000000	0.000000	0.000000
Sum	117.9825	11.03711	125.9090	20.58800
Sum Sq. Dev.	2788.663	3.248830	8.945419	1.510659
Observations	118	118	118	118

Source: Author's computation (2023) using E-views 9.0

Table 4.2.1 highlights descriptive statistics of variables examined with emphasis on mean, maximum, minimum, standard deviation and the Jarque-Bera results. The results indicated that mean value of return on equity 15 .98, leverage ratio is 0.093535, current ratio stood at 1.067025, while quick ratio is .0.174475. In testing for the normality of distribution of the variables, the Jacque-Bera null hypothesis of non-normality was accepted.

The table above shows that the variables used are normally distributed that is the probability of all the variables (p-values) are less than the critical p-value of 5%.

Squared shows that about 82% of the variations are attributed to the explanatory variables. The value of the probability of f-statistic is less than 5%, meaning that the F-statistic is significant at the 5% level revealing that there 1s a significant linear relationship between the dependent variable (Return on equity) and the three independent variables taken altogether.

The coefficient for Receivable conversion period (RCP) is found to have a negative relationship with return on equity and it is statistically significant at 5% level he cause the t-test calculated of 2.88 is greater than the t-test statistics rule of thumb of 2. This implies that for every 10% increase in RCP, there is 7.1% decrease in return on equity. This finding agrees with the findings of Maina (2011), who conducted a study examining the relationship between working capital management and profitability of the Oil companies in Kenya and covered the period 2007-2010. Receivable conversion period (RCP) was found to have a negative relationship with returns on equity of manufacturing companies in this study.

The coefficient for Inventory conversion period (ICP) is found to have a positive relationship with return on equity and it is statistically significant at the 5% level because the t-test calculated of 3.24 is greater than the t-test statistics rule of thumb of 2. This implies that a 10% increase in ICP will result into 2% increase in return on equity. This finding agrees with the findings of Owolabi and Obida (2012), they conducted a study on working capital management and corporate profitability of selected manufacturing companies listed on the Nigerian stock exchange. A sample of 12 manufacturing companies quoted on the Nigerian Stock Exchange was selected and used to determine the relationship between working capital management and corporate profitability. The study found a positive and a significant relationship between inventory conversion period and returns on equity of manufacturing companies.

4.3 REGRESSION ANALYSIS

Table 3: Panel Least Square Result Estimates

Variable/Constant	Coefficient	Standard error	t-statistic	Probability
C	0.931960	2.028816	0.459362	0.6468
RCP	-0.713843	0.247190	-2.887831	0.0255
ICP	0.206315	0.063657	3.241041	0.0015
PDP	1.255317	4.043523	0.310451	0.7568

$R^2 = 0.90$; Adjusted $R^2 <= 0.82$;

F-statistic=8.062; Prob (F-statistic) = 0.009356. Durbin Watson = 1.59;

4.4 DISCUSSION OF FINDINGS

Table 3 shows the panel least square estimates. The model is generally robust as shown by the F-statistic, which is statistically significant at the 5% level as reveal by the probability of fstatistic. The Durbin-Watson statistic of 1.59 suggests that the model does not suffer from first order autocorrelation.

The R-square reveals that about 90% of the systematic variation in the dependent variables is explained by the three independent variables: Receivable conversion period (RCP), Inventory conversion period (ICP), and Payable deferred period (PDP). The adjusted variations R-Bar

The coefficient for payable deferred period (PDP) is found to have a positive relationship with return on equity and it is not statistically significant at 5% level because C t-test calculated of

0.310 is less thanhe t-test statistics rule of thumb of 2. This implies that a 10% increase in PDP will lead to an increase in return on equity by 12.5%.

Management of inventory involves a daily analysis and detailed estimation of the size and timing of cash inflows and outflows over the coming days and weeks to minimize the risk that savers will be unable to access their deposits in the moment they demand them. Thus, Management of inventory is the lifeblood of a system. The effects of inventory management on the performance of the firm will result in the long conclusion that it measures the amount of profit and promotion of the firm.

5.4 Recommendations

Based on the findings of the study, the study presents recommendations pertinent to the study under review.

1. The study recommends that the managers should display a high sense of commitment in its inventory management to bring about a realistic performance in the manufacturing sector.

2. Managers can create profits for their companies by handling correctly the cash conversion cycle and keeping each different component (accounts receivables, accounts payables and inventory) to an optimum level.

3. It was also recommended that enough funds should be made available to provide loans and advances to customers so as to further boast public confidence by manufacturing companies.

4. The authorities should adopt appropriate inventory management policy so as to enhance the liquidity profile of insurance companies.

CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

The study investigates effect of inventory management and firm performance in Nigerian manufacturing companies. The chapter presents the summary of the study findings, conclusion and recommendations. The summary of the findings are presented below:

5.2. Summary of Findings

The summary of the study findings were presented below

1. The coefficient for Receivable conversion period (RCP) is found to have a negative relationship with return on equity and it is statistically significant at 5% level because the t-test calculated of 2.88 is greater than the t-test statistics rule of thumb of 2.
2. The coefficient for Receivable conversion period (RCP) is found to have a positive relationship with return on equity and it is statistically significant at the 5% level because the t-test calculated of 3.24 is greater than the t-test statistics rule of thumb of
3. The coefficient for Payable deferred period (PDP) is found to have a positive with return on equity and it is not statistically significant at 5% level because the t-test calculated of 0.310 is less than the t-test statistics rule of thumb of 2.

5.3 Conclusion

This study analyzes the impact of inventory management on manufacturing firm performance in Nigerian. Manufacturing sector plays a prominent role in the society as it provides energy for other sectors of the economy.

APPENDIX A

QUESTIONNAIRE

DEPARTMENT OF BANKING AND FINANCE,

UNIVERSITY OF BENIN,

BENIN CITY, EDO STATE.

Dear Respondent,

The questionnaires attached here are based on inventory management in a manufacturing companies in Nigeria using as a case study. It is aimed at obtaining information for a research project as part of the necessary requirements for the award of B. Sc Degree.

Honest, clear and objective responses to the questions will be highly appreciated. All information provided shall be treated as highly confidential and will only be used for this academic exercise.

Thanks for your anticipated co-operation.

Yours faithfully,

Imafidon Racheal

REFERENCES

Achunba, I. and Usuagwu (1990). Marketing Foundamentals and practice AI-Martes Education Research, Rock Hill.

Aghedo, (1985). Quantitative Analysis for Business Decision Worldwide Communication, Lagos.

Akinbade, F. (1995). Practical Operational Research for Developing Countries. Panaf Press Lagos.

Barijoko, S. (1998). Production and Operation Management Saban Publishers, Lagos.

Buffer, E. and Miller (1978). Production and inventory system palling control. Illinois ININ INC.

Hiezer, J. and Reder B. (1991) production and operation Management AIlyn and Balcon, Boston.

Igbinosun, F.E (2002). Research Methodology Made Simple Risway printer and published LTD, Benin City.

Kotz, H. (1980). Management Mc. Graw Hill international Book Company, New York.

Mecod, G. D (1992). Prospect for Better Cost Management in Production Inventory Control Performance Improvement. Through Cost Management. University of Lagos Pres, Lagos.

Umaifa, F.T (2006). Cost Accounting A Simplified Approach Dimaf Graphic Prints, Benin City.

(b) Production process ☐

(c) Durability versus perishability ☐

All of the above

4. Does your company make formal inventory policies?

(a) Yes ☐

(b) No ☐

5. Is there any committee assigned with the function of making policy decisions about management?

(a) Yes ☐

(b) No ☐

6. Does your company adhere strictly to her inventory management policies?

(a) Yes ☐

(b) No ☐

7. Does the inventory policies made in your company affect productivity?

(a) Yes ☐

(b) No ☐

8. Does your company maintain minimum stock?

(a) Yes ☐

(b) No ☐

APPENDIX B

Please give your answer to the questions by ticking (√)in the box corresponding to the option chosen

1. What is your work experience?

(a) 1-5 years ☐

(b) 6-10 years ☐

(c) 11-15 years ☐

(d) 16 years and above ☐

2. Which of the following type of inventories does your company maintain?

(a) Finished goods ☐

(b) Work in progres ☐

(c) Raw material ☐

(d) Supplier ☐

(e) All of the above ☐

3. Which of the following determines the size of inventory in your company?

(a) Level of sales ☐

15 What is your opinion of company's storage cost?

(a) Very low ☐

(b) Moderate ☐

c) Low

(d) High

16. Is there any control access to inventories?

(a) Yes ☐

(b) No ☐

17. From your work experience, what factors constrain effective management of inventories?

_____

_____

9. Does your company maintain perpetual stock records?

(a) Yes ☐

(b) No ☐

10. Does your company experience low productivity?

(a) Yes ☐

(b) No ☐

11. If yes, do you think that low productivity are caused by poor inventory management?

(a) Yes ☐

(b) No ☐

12. Hoe does your company know when to reorder?

_____

_____

13. Does your company run out of stock from time to time?

(a) Yes ☐

(B) No ☐

14. Does your company have loss of sales as a result of stock-out? 62

(a) Yes ☐

(b) No ☐