ST MARY'S UNIVERSTY

SCHOOL OF GRADUATE STUDIES

THE ASSESEMENT OF INVENTORY MANAGEMENT PRACTICE, AT PHARMACITUCALS FUND AND SUPLIES AGENCY

BY

ABEDERHMAN WORKU

JUNE 2016

ADDIS ABABA,ETHIOPIA

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APPROVED BY BOARD OF EXAMINER

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DECLARTION

I, The undersigned,declare that this thesis is my original work, prepared under the guidance of Dr.Abebawe Kasaye .All the source of materials used for the thesis have duly acnowleged.I further confirm that the thesis has not been submitted either in part or in full to any other higher learning institution for the purpose of earning any degree.

Abedrerhman worku   --------------------------------------

Name   **Signature**

St,mary's Universty ,Addis Ababa   **June ,2016**

ENDORSEMENT

This thesis has been submitted to St.mary's University,School of Graduate Studies for examination with my approval as University advisor**.**

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   Advisor   **Signature**

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ACNOLEGMENTS

I thanks AllAH   (The Entire Merciful, The Especial Merciful) for making it possible for me to complete this piece of works.Special thanks to him for knowledge,wisdom,courage and determination he granted me.

I extend my sincere appreciation to my Supervisor Dr.Abebawe Kassaye who guided me from research proposal to the report writing .He really Inspired ,Motivated and assisted me during the processe of work.

Finally I am indebted to my dear Family and friend and others for their support ,care and courage during my Study. may ALLAH bless the abundantly.

List of acronyms

MSH:-Management Science for Health

WHO:-World Health Organization

PFSA:-Pharmactiucal Fund and Supplies Agency

List of tables

ABSTRACT

The purpose of the study was to assess the inventory management practice of

pharmactiucals fund and supplies agency. The specific objective were to assess inventory management system /modeling and its effects on cost or profitability, determination of reorder level/points, inventory control and cost build up. To undertake the study descriptive methods is used to carry out the research and both primary and secondary data were used to analyze the data. To achieve the goal of this study from the total population of 120 employees of PFSA a sample of 100 were selected using purposive sapling techniques .Data analysis was done using simple descriptive statics using percentage ,frequency and mean .The findings reveled that in arriving at optimal quantity to order managements is not guided by Scientific inventory management models but it heavily depend on demand forecasting model , In determining optimum stock levels management not strives to maintain adequate balance between minimum cost of ordering and holding stock in PFSA. Inventory items in our stores are classified according to their economic value and importance and there is good inventory control and procedure of determining cost component .Based on the result it was recommended that Rather than depending on Market demand and guesstimate in managing inventory, there is need for the organizations to adopts a better models in determining inventory quantities and managing inventory cost**.**

Chapter One

1. Introduction

1.1. Background of the Study

Pharmaceutical Inventory Control

Inventory Management refers to the process of managing inventory in order to meet patient demand at the lowest possible cost with the minimum of investment. It is an important component of the drug supply system. Unlike many factors in pharmacy, inventory is controllable, and the pharmacy department normally decides how much inventory investment to make, when to reorder, and in what quantities (Blackburn, 2010). Accurate and current stock records are essential to good inventory management. They are the sources of information used to calculate the needs, and inaccurate records produce inaccurate needs estimations (and problems of stock outs and expiry) (Dobler et al, 1996). Therefore good pharmaceutical management and other essential medicines have great contribution in reducing the cost of purchasing medicines.

Pharmaceutical Management Concept

Pharmaceutical management is the set of practices aimed at ensuring the timely availability and appropriate use of safe, effective, quality medicines and related products and services in any health-care setting. It has four components that form a cycle, namely selection of the product, procurement, distribution and its use to the patients (Management Science for Health, 1997).

Most of organization whether it is governmental or private which holds or uses pharmaceutical Products as their operational activities known to be inefficient in service provision mainly due to inefficient planning for utilization of resources, lack of budget, organizational culture, disobedience to the ethics and lack of motivatio (Akindipe, 2005).

It is known that resources are limited in existence and organization should have to establish various controlling tools in order to allocate the limited available resources in a manner that will help the organization effective in their operational activities.

Some countries like Ethiopia life is as such difficult and challenging. The people have no any sustainable income to get medical treatment. Therefore, governmental and private organization is quite necessary for the society at large to supply pharmaceutical products like drugs and any other related treatments with list cost as possible. Ministry of health, 1992 E.C & 1994 E.C

1.2 Inventory valuation and control

According to Wells, there are two distinct elements to consider when valuing inventories; quantity and price. If one of those, quantity or price, is incorrect the total value will also be incorrect. However, valuation of inventories is as much a theoretical problem as a practical

problem. Theoretically, there are several theories regarding how inventories could be valued. Considering the legal aspects, it is difficult to assess which theories are allowed and which are not. Also, concerning inventory valuation, it is important to open up a discussion about the issues companies face today. From a practical point of view, companies have to consider which costs need to be included in the pricing of materials when valuing inventories. It is important that companies, for financial reasons, are aware of all the rules and regulations surrounding this issue. However, the other aspect, quantity, is as essential as the pricing of material. In order for a valuation to be correct, the quantity on hand needs to be accurate. When discussing the issue of price, there are two fundamental questions regarding inventory reports. The first one is whether inventories should be valued according to acquisition value or real value, where acquisition value includes costs a product have caused to obtain its present shape, and real value is the net realizable value. The second question regards how these values should be calculated. As mentioned in the background, there is legislation concerning how to value inventories correctly. We believe it is important to handle valuation of inventories according to existing rules and regulations already from the beginning, in order to ensure there is no regulatory incorrectness.

Bragg mentions that the accuracy level of inventories is important For many businesses, there have been increased competitive pressures, which have led to a reduction in inventory levels, hence creating a need for accurate records. The foundation for a correct inventory balance is an effective governing of the material flow. We consider the handling of materials and the processes around inventories to affect quantity, as the movement and handling of items may make it difficult to have accurate control. The valuation will not be accurate unless the physical quantity corresponds to the amount in the system. Companies keeping inventories must have appropriate control functions to secure its accuracy. They need a system that makes it difficult for people to do mistakes or be dishonest.

As Arnold and Chapman states; "because inventory consists of tangible things, items have a nasty habit of becoming lost, strayed, or stolen. Determining the inventories on hand has often proven to be a difficult task. Goods are on constant move, bought and sold, and transferred among different locations. If companies have proper routines when it comes to their inventories, we believe right quantity in inventory will be achieved.

According to Wild, most companies believe it is not worth improving accuracy until it becomes an issue. He mentions inventory counting discrepancies to be a common way for inaccuracy to manifest itself. Inventory counting is an essential first step, and is important to be properly organized. There are two main ways to perform this. Either an annual physical count is performed, or a cycle counting approach spread over the year may be used. We believe one of the problems of inventory valuation to a large extent stems from faulty inventory routines and the differences between actual inventory balance and the one stated in the system. With support from our discussion above, we believe this is a consequence of improper physical count as well as inadequate monitoring of activities impacting valuation.

The main reason much interested to do our research on pharmaceutical fund and Supply agency /PFSA/ is to because there no well defined inventory control and system,problems of inventory managing models (pharmacticals fund and supplies agency accounting manuals) More specifically from finance section, procurements drug store and distribution, and other department of pharmaceutical fund and supply agency /PFSA/ will fill the questionnaire.

1.3. Statement of Problems

The main objective of inventory management control is to determine and maintain an optimal level of inventory, which helps free some investment capital and reduce inventory holding and handling costs. A firms should avoid either overstocking inventory or running the risk of inventory stock-outs. Keeping too much inventory on hand not only increases costs, but it also subjects inventory to potential deterioration and obsolescence. On the other hand, keeping the inventory level too low may disrupt normal business operations (Donald walter,2003).

Maintaining up-to-date accounting records of the inventory account helps improve inventory management control. Accurate inventory records of the amount of inventory on hand at any given time are essential in managing and controlling inventory. Businesses may use either the perpetual inventory system or the periodic inventory system to keep their inventory records. Under the perpetual inventory system, inventory purchases and uses are directly recorded in the inventory account as pluses and minuses respectively, allowing a business easy access to inventory information. Under the periodic inventory system, a separate purchase account is used to record inventory purchases, and the inventory account shows only the beginning or ending

balance. The periodic inventory system requires a physical count of ending inventory to help determine the amount of inventory used during the period(Donald walter,2003).

However different functions that are found in most organization have different contradicting objectives related to inventories. Finance function prefers to keep of inventories low to conserve capital but operation prefers to have adequate inventories for efficient and smooth operation. Therefore this make an organization to have an inventory management practice that maintains a balance between such contradictions. Accordingly Inventory management System is virtually Important for almost every types of business and organization .Designing and establishing a proper Inventory management practice over inventory Items also enables Organization to minimize unnecessary cost which result in maximize profit. On the other hand absence of effective Inventory managements practice or existence of poor Inventory management at a minimum may result in high inventory holding cost due to absence of non compliance to the policy of inventory reorder level high stock obsolescence and expire to due to poor warehousing and inspection. Finally this all leads to losses of profit which may result in bankruptcy and close operation. As Inventory pharmaceuticals products should be kept and managed properly. Proper inventory management is expected to benefit an organization in many fronts. Resources are scarce and hence they should have to be used for specified purpose. Failure to do so will lead to unwise use of resource and also accountability.

The pharmaceutical fund and supply agency /PFSA/ has no well defined inventory management system and models this is leading to improper use of scarce resource. That is there is cyclic inventory count but there is a large amount of shortage of stocks across a year (PFSA yearly count sheet) as a result exposing them to stock related costs that affect performance and service delivery.

The pharmaceutical fund and supply agency /PFSA/ have problem of controlling drugs and other pharmaceutical products because, there is not clear cut segregation of the duties among employees, lack of qualified person over the store, qualities and limited number of pharmacists and etc (pharmacticals fund and supplies agency accounting manuals) .

1.4. Basic Research Questions

This section will help the researcher to investigate and understand the major problem areas in their field of study. At this regard the researchers will raise same basic questions related to their study:-

➢ What are the inventory management practice used by PFSA?
➢ What effects do Inventory management system/models have on the organizations profitability or cost?
➢ Wheter inventory in the store is classified according to economic value and importance?
➢ How do you knows inventory reorder level/points?
➢ How does the company control inventory?
➢ How does the company determine inventory cost ?

1.5 Objective of the Study

General Objective the general objective of the Study is to assess inventory management practice of PFSA .

Specific Objectives of the study:-

➢ *To assess inventory management model*
➢ *To assess inventory classification in the store*
➢ *To* assess *the inventory reorder level or reorder points*
➢ *To* assess *the Inventory cost*
➢ *To* assess *the inventory control*

1.6 Significance of the Study

The papers believed to be significant in providing useful information for decision makers and top level management with respect to inventory management practice process to be in place at pharmaceutical fund and supply agency /PFSA/. Among the much significance some are:

➢ The paper will indicate the solution for the stated problem
➢ It will serve the organization to recognize their weakness and strength
➢ It will serve as a source of information for other researches who need to study on this area
➢ The study is expected to help other researchers dig in so the matter further.

> ➤ It helps the individual as well as the whole society by bring the idea of having good inventory management and controls to use in their life.

1.7 Scope of the Study

Pharmaceutical fund and supply agency /PFSA/ is a government organization in Ethiopia with an objective of selling a healthy and productive community. Hence, the paper is limited to the evaluation of the practice of inventory management system in pharmaceutical fund and supply agency /PFSA/ head office.

1.8 . Organization of the research

This paper is divided in to four chapters:-

The first chapter deals with introduction, where the background, statement of the problems, objectives, significance of the study and scope are presented.

The Second chapter will focus on work of other scholars in the field of inventory and managements;

The Third chapter will give emphasis on data presentation and analysis.

Finally chapter four or last chapter focus on providing summary of findings ,conclusion and recommendation.

CHAPTER TWO

LITRATURE REVIEWE

2. Definition of inventories

Inventories are materials and supplies that a business or institution carries either for sale or to provide the inputs or supplies to the production process or Inventories are stock of materials of any kind of sterol for future use mainly in the production process (materials managements $2^{nd)}$ Inventories consists of the value of goods ready for sale, goods process raw material and supplies which will be consumed in the product on process. Therefore inventories are materials or resources of any kind having some economic value either awaiting conversion or use in future.(A.K , 2004).

2.1   Inventory Management

Inventories are stockpiles of raw materials, suppliers, components, work in process, and finished goods that appear at numerous points throughout a firm's production and logistics channel"(Ballou, 2004).

According to Chase, Jacobs and Aquilano (2004), inventory is the stock of any item or resource used in an organization. An inventory system is the set of polices and controls that monitor levels of inventory and determine what levels should be maintained, when stock should be replenished, and how large orders should be. Finally, Pycraft et al (2000) defined inventory or stock as "the stored accumulation of material resources in transformation system. So a manufacturing company will hold stocks of materials, a tax office will hold stocks of information and a theme park will hold stocks of customer (when it is customers which are being processed we normally refers to the stocks of them as a queues.

Inventory management involves providing the required inventory levels that will sustain the organization's daily operations at minimum costs. This covers issues like determining the level of stock to order, when to order, establishing receipt and inspection procedures and providing proper storage facilities. Without proper stock control procedures in place, firms are likely to face two undesirable inventory levels. That is to say excessive/ high levels of inventory or inadequate/ low levels of inventory (Dickerson ,1995).

2.2   Types of Inventory

Inventory varies in various organizations but the most common stock is stock of raw materials, work in progress, finished goods and inventory in supplies such as stationery and fuel.

According to Kakuku (2007), raw materials inventories are those inputs from suppliers that have not yet entered the manufacturing or transformation process. Those inventories are essential in helping a firm/ organization to overcome problems faced by purchasing departments. Suppliers often fail to deliver expected inputs to their internal inefficiencies. The business itself may fail to acquire inputs in time because its procurement function is sluggish and inefficient. Some times, the problems may be due to environmental factors well beyond the suppliers and the business itself. If there were no inventories of raw materials, any disruption in supply would be automatically passed on to operations functions. Operations would stall, as there would be no inputs to transform.

According to Pandey (2002), work in progress (WIP) is products that have been partially finished. These are semi finished products at various stages of production and these inventories provide a link between input and output stages. They represent products that need more work before they become finished products.

Finished goods are completed products, which are ready for sale. They link production to marketing or consumption for unanticipated failure in production and also meet unpredictable variables in customer demand (Pandey, 2002). Finished goods inventory allows the firm flexibility in its production scheduling and in its marketing (Van Horne 2002)

According to stock and Lambert (2001), said that inventories can be categorized into six distinct forms that are: Cycle stock is inventory that results from the replenishment process and is required in order to meet demand under conditions of certainty, that is, when the firm can predict demand and replenishment times (lead times) almost perfectly: In-transit inventories. In-transit are items that are en route from one location to another.
They may be considered part of cycle stock even though they are not available for sale and /or shipment until after they arrive at the destination: Speculation stock. Speculation stock is inventory held for reasons other that satisfying current demand.

For example, materials may be purchased in volumes larger than necessary in order to receive quantity discounts, because of a forecasted price increase or materials shortage, or to protect

against the possibility of a strike: Seasonal stock. Seasonal stock is a from of speculative stock that involves the accumulated of inventory before a season begins in order to maintain a stable labour force and stable production runs or, in the case of agricultural products, inventory accumulated as the result of a growing season that limits availability throughout the year: Dead stock is inventory that no one wants, at least immediately. The question is why any organization would incur the costs associated with holding these items rather than simply disposing of them. One reason might be that management expects demand to resume at some point in the future. Alternatively, it may cost more to get rid of an item that it does to keep it. But the most compelling reason for maintaining these goods is customer service for good service delivery toward an organization. Perhaps an important buyer has an occasional need for some of these items, so management keeps them on hand as a goodwill gesture.

2.3 Reasons for holding Inventory

The purpose of holding stock by a firm is for three motives (Drury 2000) that is the precautionary, transaction and speculative motives.

Precautionary Motives: precautionary motive means that stock held to guard against risk of unpredictable changes in demand and supply. In most cases, the level of demand of goods and the time required for supply can not be known with certainty. Therefore, to ensure product availability, the organization maintains additional amount of safety stock to meet regular production and market needs. Firms should invest in stock control for precautionary motive to act as a buffer or link between demand and supply so that production can be geared to a more constant output(Gittinger,1995).

Precautionary motive necessitates holding of inventories to guard against the risk of unpredictable changes in demand and supply forces and other factors. (Pandey, 2002)

Transaction Motive: Balloon (1987) stated that inventories should be held to improve customer service and therefore goods should be spotted at a place where customers can get them in the quantities they wish. The transaction motive is aimed at facilitating smooth operations on daily basis. According to (Pandey**,**2002) Transaction motive emphasizes the need to maintain inventories to facilitate smooth production and sales operation.

Speculative Motive: Firms should maintain back up inventory either in excess or low levels to take advantage of current and future demands or price fluctuations. They should therefore purchase goods and stock them in advance when they anticipate price increase in future and also prepare for contingencies that may befall a company, for instance, strikes, prices, goods among others (Kakuru, 2000).

Speculative motive influences the decision to increase or decrease inventory levels to take advantage of price fluctuations (Pandey: 2002).The above reasons in addition to encouraging production purchases and transportation economies will influence firms to hold stock to allow smooth operations in the organization.

According to Kenneth and Brian (2006) said that reason for keeping inventory includes the following reason:-Reduce the risk of supplier failure or uncertainty- safety and butter stocks are held to provide some protection against such as strikes, transport breakdowns due to floods or snow, crop failures, wars and similar factors, Protect against lead time uncertainties, such as where supplier's replenishment and lead time are not known with certainty – in such case an investment in safety stocks is necessary if customer services is to maintain at acceptable levels, Meet unexpected demands or demands for customization of products as with agile production and smooth seasonal or cyclical demand, Take advantage of lots or purchase quantities in excess of what is required for immediate consumption to take advantage of price and quantity discounts, Hedge against anticipated shortage and price increases, especially in times of high inflation or as a deliberate policy of speculation and Ensure repaid replenishment of items in constant demand, such as maintenance supplies and office stationery.

According to Bloomberg, Lemay and Hanna (2002:136-137) have identified five reasons for holding stock, namely:

a. Economies of scale. A firm can realize economies of scale in manufacturing, purchasing and transportation by holding inventory. If the business buys large amounts, it gets quantity discounts. In turn, transportation can move larger volumes and get economies of scale through better equipment utilization. Manufacturing can have loner production runs if more material is inventoried, allowing per units fixed cost reductions.

b. Balancing supply and demand. Some firms must accumulate inventory in advantage of seasonal demand. A toy manufacturer see some demand year – round, but 60 percent or more of sales will come in the Christmas season. By manufacturing to stock, production can be kept throughout the year. This reduces idle plant capacity and maintains a relatively stable workforce, keeping costs down. If demand is relatively constant but input materials are seasonal, such as in the production of demand fruits, then finished inventory helps meet demand when the materials are no longer available.

c. Specialization. Inventory allows firms with subsidiaries to specialize. Instead of manufacturing a variety of product and then ship the finished products directly to customers or to a warehouse for storage. By specializing, each plant can again economies of scale through long production runs.

d. Protection from uncertainties. A primary reason to hold inventory that is to say to offset uncertainties in demand. If demand increases and raw material stocks run outs, the production line shuts down until more material is delivered. Likewise, a shortage of work in process means the product cannot be finished. Finally, if customer order outstrips finished goods supply, the resulting stock outs could lead to the lost customers leading the poor services delivery to the organization.

e. Buffer interface. Inventory can buffer key interfaces, creating time and places utility. Key interfaces include [1] supplier and purchasing, [2] purchasing and production, [3] production and marketing, [4] marketing and distribution, [5] distribution and intermediary, and [6] intermediary and customer. Having inventory at these interfaces helps ensure that demand is met and stock outs are minimized.

2.4   Inventory Management Practices

In order to achieve the objectives of minimizing stock related costs, firms should maintain adequate levels of stock in order to enable smooth business operations. A number of practices have therefore been advanced to handle these costs.

(Kalyango ,2001) highlights the following practices that minimize stock related costs;

Inventory Planning and Scheduling; This is how units of stock are required by an organization in a given period to enable smooth business operations. A good stock plan set in advance will

enable planners to set procurement/ purchase dates and quantities that are consistent with the plan to avoid disruptions due to inventory shortages (Dilworth, 1992).

Inventory Recording; Accurate and up-to- date stores records are keys to effective stores management. The basic procedures include counting and recording promptly after receipt or production and whenever there is a store transaction, issue of stores should be properly authorized and show details such as code number, quantity of the transaction and the voucher reference (Muller, 2003).It is undertaken by organizations to reduce the errors of stock management and to ensure accurate and reliable stock records. It involves spot checks/ surprise checks, stock taking, which is the physical counting and measuring of quantity of each item in stock and recording the results (Brooks et al ,2007).

Purchase requisition note. Document raised by either the storekeeper or user department to the purchasing officer requesting for inventory /materials need for use.

Goods received note. Document prepared on receipt of stock to the stores.

Stock record card/Bin cards: used for recording materials received and used in the store. Bin card has three columns which include the receipt column, issue column and Balance column.

Materials return note. These permit the unused materials to be returned to the store from the production department and other user departments.

Shortages note. This is a document issued by the stores department to requisitioned information him/her that materials required are in short supply or not available in the store.

Scrap note. This is a document used for recording scrap generated and it allows such a scrap to be handed over to the store department in exchange for good materials (Kamukama, 2006).

Recording technique; Inventory recording is undertaken to reduce the error relating to inventory accountability and accuracy in a firm's investment in inventories. (Wood Frank ,1996) indicates that stock accounting is important in any firm as it registers the changes in the level of stock held to realize maximum value and avoid misuse of funds. Inventory recording may take it form of stock taking and sport checks which are a process of physically counting, weighing or otherwise

measuring the quality of each item in stock and recording system should reduce the discrepancies between stock in record and the physical stock.

2.5 Inventory Valuation

It is also a stock control technique, which refers to the establishment of the value of stock and therefore its implication on the profits. (Lacey 1994) identified the following methods of stock valuation; First in First out (FIFO), Last in First out LIFO) and the average price method.

First in First out (FIFO) is a method whereby prices of goods are determined by depending on the oldest stock until all the units are finished and then the second oldest is used to determine the prices and the trend continues. According to (Kamukama, 2006) FIFO method follows the principle that materials received first are issued first. After the first lot or batch of materials purchased is exhausted, the next lot is taken up for supply. The inventory is priced at the earliest costs. This means that the unused raw materials (closing stock) are constituted by the goods which were not recently purchased.

2.6 Inventory control

Inventory control is the activity which organizes the availability of items to the customers of the organization. It co-ordinates the purchasing, manufacturing and distribution functions to meet the marketing needs. This role includes the supply of current sales items, new products, consumables, spare parts, obsolescent items and all others supplies (wild, 2002) Lysons and Gillingham (2003) write that inventory/stock control refers to the techniques used to ensure that stocks of raw materials, WIP and finished goods are kept at levels which provide maximum service levels at minimum costs. An effective Inventory Control System should; Minimize time and carrying costs, Maintain sufficient stock for smooth production, sales operation and on sufficient customer service. And control investment in inventories or keep an optimum level (Pandey, 2002). Different business concerns may apply different inventory practices to meet specific requirements and circumstances to help in containing the costs associated with inventory.

Inventory recording is undertaken by organizations to reduce the errors of stock management and to ensure accurate and reliable stock records. It involves spot checks/ surprise checks, stock taking, which is the physical counting and measuring of quantity of each item in stock and recording the results (Brooks et al, 2007).

Checking Receipts – Receipts into store are normally checked (or either by weighing, counting or measuring). If this is done properly, it provides a good foundation for all subsequent operation by ensuring, that the quantities are correct in the first instances.

Checking /Issues – It should be a matter of routine for the store house staff to check the quantities and descriptions of all issues made before they are handed over. It is also common practice to expect the recipient to counter-check the quantity received and to sign for it. This provides a reasonable assurance that quantities taken off stores are correct.

Spot checking – Spot-checking is the practice of making random checks of some items at irregular and unspecified intervals. It is often done by senior stores officers in course of their supervisory duties, but can also operated in paralleled with the stocktaking programme, irrespective of whether the periodic or continuous method is in use. Where the main stocktaking is carried out annually on a periodic basis, spot checking throughout the year is the best safe guard against malpractice during the period between stock takings

ABC Analysis: This has already been covered before, but is also regarded as a material control tool. It's considered as the best approach and based on the principle of selective control. The maxim is "put your effort where the results are maximized. (Kamukama, 2006). ABC analysis: Brown (Bloomberg, Lemay and Hanna 2002) notes that the ABC analysis categorizes products based on importance. Importance may come from cash flows, lead time, stock outs, sales volume, or profitability. Once the ranking factors is chosen, break points are chosen for classes A, B, C and soon. The 80-20 concept is particularly useful in distribution planning when the products are grouped or classified by their sales activity. The top 20 percent might be called A times, the next 30 percent B items, and the remainder C items. Each category of items could be distributed differently. For example, A items might receive wide geographic distribution through many warehouses with high levels of stock availability , whereas C items might be distributed from a single, central stocking point(e.g. a plant) with lower total stocking level than for the A

items. B items would have an intermediate distribution strategy where few regional warehouses are used (Ballou ,2004).

Two bin system: This method is common used when materials are relatively inexpensive or non-essential. The inventory is divided and placed in two separate compartments or bins. The first bin contains quantity of items that will be used between the time an order is received and the cover the usage between the dates of placing an order to the date of delivery. New supply is ordered as soon as the first bin is empty. (Axsater, 2006).

Just –in- time (JIT) system. This is a demand –pull" system under which products are only manufactured to satisfy a specific customer order (Horngren, 1999). As the name suggests the idea is that inventories are acquired and inserted in production at the exact times they are needed, this requires efficient purchasing, very reliable suppliers and an efficient inventory handling system.(Van Horne:p469).In this system supplier delivers the components and parts of the production line just in time to be assembled. Other names for this or very similar methods are zero inventories and stockless (Koonzt,2003).Just-in-time inventory management is an approach which works to eliminate inventories rather than optimize them. The inventory of raw materials and work-in-process falls to that needed in a single day. This is accomplished by reducing set-up times and lead times so that small lots may be ordered. Suppliers may have to make several deliveries a day or move close to the user plants to support this plan. (Muckstade et al, 2010)

Inventory Levels; This is a stock management technique, which involves controlling the amount of stock held by an organization. The main aim of this technique is to strike a balance between profitability and liquidity to ensure that there is no under or over stocking. According to Kamukama (2006**)** short adherence to stock control should be established in order to minimize the costs associated with stock.

Firms should therefore determine the level of stock they require so that excess or inadequate stock is avoided. Several Authors indicate that firms should establish the following practices in order to avoid undesirable stock levels i.e. the re-order level, average stock level and maximum stock level, minimum stock level of safety stock.

Re-order level is a level fixed between and represents a stage at which emergency and immediate steps have to be taken for acquiring new stock. It gives a warning to the stores that materials

have reached the lowest point and if no emergencies are taken, they will be completely exhausted. The re-order level must be sufficient enough to cover the maximum possible consumption of stock during the reorder period.

Re-order level = Maximum daily usage x maximum lead time/period.

Minimum stock level or safety stock. This is maintained to prevent stock outs. It represents the quality below which the stock of an item should not be allowed to fall. This safety stock should be used only in abnormal circumstances minimum stock level/safety stock=Re-order level – (average rate of consumption x average lead time)

Maximum stock level.; This represents the upper most amount of stock the company can maintain at any time. Maximum level indicates the level above which stock should not be allowed to rise. Maximum stock level+ Re-order level + EOQ (Minimum usage x minimum lead time)

Average stock level

This is computed as <u>minimum stock level + maximum stock level</u>

2

Or

Average stock level = <u>Minimum level + Re- Order quantity (OEQ)</u>

2

Inventory Costs. According to Floyd D, Successful inventory management involves balancing the costs of inventory with the benefits of inventory. Many small business owners fail to appreciate fully the true costs of carrying inventory, which include not only direct costs of storage, insurance and taxes, but also the cost of money tied up in inventory.

The main of inventory management techniques is to ensure that costs associated with inventory are minimized. These cost include holding /carrying costs, ordering costs and purchase costs which make a sum of total stock costs (Kamukama, 2006)

2.7   Inventory management Policies used in organizations

Dilworth (1992) contends that inventory planning and scheduling shows how units of stock are required by an organization in a given period to enable smooth business operations. He elaborates that a good stock plan set in advance will enable planners to set procurement/purchase dates and quantities that are consistent with the plan to avoid disruptions due to inventory shortages.

Muller (2003) explicitly notes that accurate and up-to- date stores records are keys to effective stores management. The basic procedures include counting and recording promptly after receipt or production and whenever there is a store transaction, issue of stores should be properly authorized and show details such as code number, quantity of the transaction and the voucher reference It is undertaken by organizations to reduce the errors of stock management and to ensure accurate and reliable stock records. It involves spot checks/surprise checks, stock taking, which is the physical counting, and measuring of quantity of each item in stock and recording the results (Brooks et al, 2007).

Stores management is concerned with ensuring that all the activities involved in storekeeping and stock control are carried out efficiently and economically by those employed in the Store. In many cases it will also encompass the recruitment, selection, induction and the training of stores personnel, and much more. A store is an area set aside into which all the items and materials required for production and/or for sale/distribution are received, where they are housed for safekeeping, and from which they will be issued as required (Muller, 2003).

Carry (1994) equally illuminates that having a stores management system means that the store is an open access area. Otherwise, people would just help themselves and there would be no control over the amount of stock taken or used. It's cost of buying and replacing stock would be even worse if there was no control under the things on impulse, use of some items, not bothering with

the others and this would add to the cost. Needham (1995) argues that one of the main purposes of an organization is to produce and sell goods efficiently and this could be through a good system of stores management. We need to have some way of measuring what it costs to make sales. If their costs can be reduced in proportion to the sales that are made, the organization can be said to be becoming more efficient.

Dickerson (1995) explains the critical role of stores management is to provide the level of stock that will sustain operations of a firm at minimum costs, which calls for carrying out stock management, forecasting on future demands, determining how much inventory to hold, when to place orders and how many units of stock to order at a given time. In doing this, firms will be aimed at maintaining inventory/stock levels, which will balance benefits of having optimum levels of stock against the costs associated with having high and low levels of inventory.

These costs include unnecessary tie up of funds, excess carrying costs, risk of liquidity, production hold up and failure to meet deliveries on time. Inventory is any resource used to satisfy current or future needs (Render et al, 1994). Inventory also known as stock refers to the resources used to satisfy current and future needs to enterprise of all goods and costs of all goods owned and held for sale (Ender et al, 1994). Chasten Flattery are O'Connor (1984) further observed that a Company has in its possession and legal tithe to . Lysons et. al 2003, defines inventory as an American accounting term for the value or quantity of raw materials, components, assemblies, consumables, work in progress (WIP) and finished stock that are kept or stored for use as the need arises. Inventory management involves providing the required inventory levels that will sustain the organization's daily operations at minimum costs. This covers issues like determining the level of stock to order, when to order, establishing receipt and inspection procedures and providing proper storage facilities. Without proper stock control procedures in place, firms are likely to face two undesirable inventory levels. That is to say excessive/ high levels of inventory or inadequate/ low levels of inventory (Dickerson, 1995).

Lucay (1994) observes that excessive levels of stock are undesirable because they increase the risks of inventory becoming obsolete, stock loss through damage and theft, increased storage costs like rent, insurance and unnecessary tie up of the firm's funds. He further state that a firm would be foregoing profits when it continues maintaining excessive levels of inventory, which

implies that the probability position of the firm is being threatened in the long run since funds are not being invested in other profitable ventures.Gupta (1994) observes that organizations should establish proper inventory control procedures, efficient and effective information system regarding stock so that they are able to balance the costs and risks of inventory control against the benefits got from having inventory readily available for smooth operations.

According Cooper et al (2002), there are four policies for inventory management. Inventory control is the managerial procedure for implementing an inventory policy. Inventory control defines how often inventory levels are reviewed to determine when and how much to order. Coldfeller (2003) adds that the control system allows you to determine mistakes that have been made or identify areas that need immediate attention. The perpetual inventory control policy reviews inventory status daily to determine inventory replacement needs. Perpetual depends on accurate tracking of all stock-keeping units. It is implemented through re-order point e order quantity. Periodic review policy, reviews the inventory status of an item at regular time intervals say weekly or monthly. The basic re-ordering point is adjusted to consider the extended intervals between reviews.

The Reactive policy method responds replenishment when available stock levels fall below a predetermined minimum then the same amount is procured (Smaros et al, 2003). It depends on the assumptions of endless capacity of resources and unlimited inventory availability at the supply location. Reactive decisions rules assume that performance cycle time can be predicted and that cycle lengths are dependent. It operates best when customer demand patterns are relatively stable and consistent. Planning policy methods use a common information base to coordinate inventory requirements across multiple locations or stages in the supply chain (Smaros et al, 2003).Under planning; there is fair share allocation which provides each facility with an equitable or fair share of available inventory from a common source such as a plant ware house.

Another form of planning policy is distribution requirements planning. According to Cold feller (2003), this a sophisticated planning approaches that considers multiple distribution stages and their unique characteristics. It is a logic extension of manufacturing requirement planning

although there is one fundamental difference between the two techniques. Manufacturing requirement planning is driven by a production schedules that is defined and controlled by management policy while distribution requirement planning is driven by customer demand.

Lastly, adaptive logic policy is a combined inventory management system used to overcome problems inherent from a reactive or a planning policy method (Cooper et al, 2002). The factors that may make a reactive policy better in one situation may change over time to favour the use of an inventory planning system. This is the ideal approach inventory management policy system since it incorporates elements of both types and allows different strategies to be used with specific customer or product.

2.8 Empirical Literature

Effects of Inventory Management practice on the Organizational Performance: by Dorothy Oballah, Dr. Esther Waiganjo Elizabeth, Wangu Wachiuri The bjectives were to establish: the effect of inventory shrinkage, inventory investment, inventory turnover, and inventory records accuracy on organizational performance of Kenyatta National hospital: A descriptive case study design was used. Statistical analysis was carried out using SPSS. The study revealed that inventory investment and inventory records accuracy have a positive influence on organizational performance while inventory shrinkage have a negative effect on organizational performance of Kenyatta National hospital thus this study recommends that the hospital should ensure that losses resulting to inventory shrinkage related to medicines are reduced. This can be done by ensuring that inventory records are accurately kept. The hospital need to manage its inventory investment by ensuring that the right amount of stock is kept at all times.

Inventory management practices and operational performance of flour milling firms in Lagos, Nigeria, by Nsikan Efiok Johna John Joseph Etimb, and Tommy Uduak Ime Five flour manufacturing firms with aggregate staff population of 2569 constituted the unit of study. From the population space, 150 respondents were randomly selected. Structured questionnaire was the major instrument for the collection of relevant primary data while mean and standard deviation was used to analyze descriptive data. Results showed that exception of the large manufacturing companies, most of the medium-sized flour milling firms adopts different inventory management strategies from the scientific models. Their inventory management strategies and policies were

rather based on factors such as changing level of customer demand, prevailing industry practices, forecast estimates and guesses, and available production capacity. Findings also revealed significant differences between effective management of inventory and optimal operating performance. For instance, while firms that scientific inventory management approaches reported efficiency in capacity utilization, increased service level, and reduced lead time, others with unscientific strategies had minimal utilization of material resources. There is need for flour manufacturing firms to implement scientific inventory management models to adequately handle material shortages, product stock outs, and component pile up with consequent penalties.

An Analysis of the Effects of Inventory Management on the Performance of the Procurement Function of Sugar Manufacturing Companies in the Western Kenya Sugar Belt by Cynthia Mito Mukopi1 , Dr. Amuhaya Mike Iravo . The first objective established the significance of a lean inventory system on the performance of the procurement function of sugar manufacturing companies in the western sugar belt. The second objective found out how strategic supplier partnerships in inventory management affect the performance of the procurement function of sugar manufacturing companies in the western sugar belt. The third objective investigated the effect of information technology in inventory management on the performance of the procurement function of sugar manufacturing companies in the western sugar belt. The fourth objective examined the effect of the legal policies on inventory management in the sugar industry on the performance of the procurement function of sugar manufacturing companies in the western sugar belt. Descriptive research design, specifically a survey study was employed in carrying out the research. The target population of the study consisted of a sample of procurement personnel of Mumias Sugar Company, West Kenya Sugar Company, Nzoia Sugar Company and Butali Sugar Mills which was 30 procurement personnel out of the total target population that was 100 procurement personnel. The research instrument was structured questionnaires that were self administered to the respondents. Data was analyzed using SPSS and presented in tables and charts.

The Impact of Effective Inventory Control Management on Organisational Performance: A Study of 7up Bottling Company Nile Mile Enugu, Nigeria by Ogbo, Ann I., Onekanma Ifeyinwa Victoria Wilfred I. Ukpere This study took into consideration the relationship between effective system of inventory management and organization performance in the seven-up bottling

company, Nile Mile Enugu. The researchers were motivated to embark on this study, in order to bring to fore the importance of effective inventory control system on organizational performance as it relates to the bottling company. A total of eighty-three respondent constitute the sample for the study. Four research questions and Four hypotheses were generated and tested at 10% (that is 0.10) significant level using descriptive statistics and non-parametric test (chi-square that is, F6l). The result of the analysis showed that flexibility in inventory control management is an important approach to achieving organizational performance. It was found that organizations benefits from inventory control management by way of easy storage and retrieval of material, improved sales effectiveness and reduced operational cost. The study also found that there is a relationship between operational feasibility, utility of inventory control management in the customer related issues of the organization and cost effectiveness technique are implemented to enhance the return on investment in the organization. Effective inventory control management is recognized as one of the areas management of any organization should acquire capability. It is recommended that organizations should adopt the inventory keeping method that best suit their operations.

Role of Inventory Management on Customer Satisfaction among the Manufacturing Firms in Kenya: by Delmonte Kenya Thogori M. & Dr. Jane Gathenya Inventory management plays a vital role in enhancing customer satisfaction among the manufacturing firms in Kenya. The study sought to carry out an investigation on the role of inventory management on customer satisfaction among the manufacturing firms in Kenya. Customer satisfaction is crucial since manufacturing firms contribute greatly to the economic development of a country. The research was carried out at Delmonte Kenya since the company has a well laid down supply chain inventory information sharing system that is linked to the customers in real time to enhance inventory management. A census was carried out on all the 50 employees at Delomonte Kenya who were directly and indirectly involved in the supply chain management activities. A questionnaire, interview guide and observation guide were used to collect the data. A response rate of 90% was obtained. Based on the research findings, all the respondents (100%) indicated that the company experienced shortages in inventory. The study concluded that manufacturing firms have poor inventory management systems and this has greatly impacted on their ability to satisfy the customer.

An Assessment of the Factors Influencing Effectiveness of Inventory Control; Ministry of State for Provincial Administration and Internal Security, Nairobi - Kenya by Kariuki James Ng'ang'a The study was an assessment of the factors influencing effectiveness of inventory control; Ministry of State for Provincial Administration and Internal Security; Nairobi. The key findings from the study revealed that: delays in procurement of goods, frequent stockouts and uncertain change of prices were some of the effects of long bureaucratic procurement procedure. According to the study inadequate and untimely dispatch of funds has an effect in inventory control. The study also revealed that unavailability of stationeries/stores records, lack of specific time or date for both posting stores records, lack of adequate qualified and well trained staff hinders effective performance. The researcher recommends that too much red tape and rigid rules and policies should be avoided; current inventory control practices and procedure need to be reviewed and redesigned. Only qualified and adequate personnel should be are involved in stock control while adequate funds should be dispatched on timely manner

2.9 Research gap

One might expect the seemingly infinite stream of inventory theory related research to be a key resource for managers seeking to gain a competitive advantage through inventory control. However, some have suggested that managers who turn to inventory theory research may find it to be of little significance (Krautter, 2009) or that it has little to offer in terms of enhancing inventory practices (Wagner, 2002). This has led many to suggest a gap exists between inventory theory and practice (Lenard & Roy, 1995; Silver, 1981; Wagner, 2002; Zanakis et al., 1980). While the varied solutions offered to bridge this gap represent valuable research, input from practitioners is noticeably absent (Patton & Steele, 1990). Therefore, an empirically derived agenda founded on practitioner-identified issues, is needed (Vigoroso, 2005). There is no study that have been comprehensively been done on factors influencing effective inventory control in public sector and hence the study intend to fill those gaps.

CHAPTER THREE

METHODOLOGY

3.1   Research Design

The research was based on both the qualitative and quantitative approaches. A crose-sectional study was chosen as the most appropriate research strategy. The qualitative research design was descriptive in nature and this enabled the researcher to meet the objectives of the study. A statement was used to assign variables that were not adequately measured using numbers and statistics. The quantitative research design was used in the form of mathematical numbers and statistics assigned to variables that may not be easily measured using statements or theme.

3.2 Subject Selection

The subjects comprised of PFSA staffs, That is Top management ,Finance ,Procurement ,Store and distribution and other respondents and the respondants are 100 in total. Due to the nature of their positions in the various departments, the Researcher was able to get reliable information necessary for the research.

3.3 Sample Size

Category	Sample Size	Percentage
Top Management	30	30
Stores and distribution	20	20
Procurment	20	20
Finance	20	20
Others	10	10
Total	**100**	**100**

3.4 Study Population

The study involved people from the staff of PFSA . All these helped the researcher to generate critical data important for the study. From the total population of PFSA that is 120 a sample population of 100 was selected using purposive sampling techniques .

3.5 Sample Frame and sample size

Key participants of the study comprised of respondents from the PFSA staffs, Top management, Finance, Procurement Store and distribution and other respondents. *By Using the purposive sampling technique, the meet the researcher criteria researcher selected 100 key informants.* Using non probability sampling called purposive sampling in which the the above departments are assumed to have a better knowledge about the study than other departments so it easy for researcher to get better Information regarding inventory managements practice .

3.6 Sampling Technique

The study participants were chosen using a purposive sampling technique because of the nature of the research where the respondents were identified before the researcher went for data collection.

3.7 Source of Data

Primary Data

Primary data was gathered from respondents at PFSA who were assumed to give first hand information on the subject under study.

Secondary Source

Secondary data got from sources like; Annual reports, Journal articles, internet, magazines, newspapers and books related to the subject of the study and these were consulted at length to extract the information required to support the findings from the study respondents.

3.8 Method of data collection

In order to collect sufficient data that can answer the research questions, researcher designed two surveys; the first was a questionnaire . The second survey was interviews aimed to collect data from managers from finance and store and distribution.

In addition to questionnaire and interview, data collected from different published and unpublished materials has been also used.

Questionnaires

The study questionnaire has been distributed to relevant department; Accordingly 15 from top management 30 from procurements , 20 from fund administration, 25 from store and distribution and 10 from forecasting sections have filled the questionnaires. Because the above departments is directly related to inventory managements or objectives of the research it encourages the reliability of research.

As indicated in the above, the staffs of the purposely sampled four departments and other were included in the survey. A questionnaire was distributed to all 100 professional staffs of pfsa. The questionnaires were structured in close-ended type and responses to the questions were measured on a five Likert rating scale where: Strongly Agree (SA) = 1; Agree (A) = 2; Neutral (N)=3, Disagree (D) = 1; and Strongly Disagree (SD) = 5; The use of Likert scale is to make it easier for respondents to answer question in a simple way. In addition, this research instrument will permit an efficient use of statistics for the interpretation of data. Moreover, the central issue to argue that likert scales is that it produce ordinal data. Johns (2010) noted that in statistical terms the level of measurement of the likert response scale is ordinal rather than interval: that is, we can make assumptions about the order but not the spacing of the response options.

Interviews

In the qualitative strategy, semi-structured interview was conducted with two managers from finace and store and distribution to have sufficient information regarding the research problem. The major purpose of this interview was to corroborate certain facts that the investigator already thinks have been established (Yin, 1989; pp. 89). Therefore, the semi-structured interviews were conducted to enhance and supplement the results of questionnaires.

3.9 Research Instruments

Research instrument to be used in data collection included among others; questionnaires, interview. These research instruments that were used to ensure that all the data necessary for the study was absolutely collected.the questionnaire was piloted as recommended by Saunder et al (2003) who writes that, piloting helps ensure validity and reliability and also said that piloting helps to refine the questionnaire so that respondents will have no problem in answering the questions and there would be no problems in recording the data.

3.10 Data Analysis and Management

After collecting all the necessary data, these data were coded and edited, analyzed and rephrased to eliminate errors and ensure consistency. It involved categorizing, discussing, classifying and summarizing of the responses to each question in coding frames, basing on the various responses. This was intended to ease the tabulation work. It also helped to remove unwanted responses which would be considered insignificant. Data collected from the field with the use of study instruments was classified into meaningful categories. This enabled the researcher to bring out essential patterns from the data that would organize the presentation.

Data Analysis

Data is analyzed using different qualitative and quantitative statistics, procedures and methods. The qualitative data partly analyzed on spot during the data collection not to lose fresh memory and to be able to identify the gap to be covered through subsequent data collection. The quantitative data analysis will be carried out with different steps.

- First summarize on a data summary sheet
- Editing, Coding and Verification then subsequently entered into computer
- Finally, data was entered into a computer and analyzed with the use of simple statics.

CHAPTER THREE

DATA ANALYSIS AND INTERPRETION

4. INTRODUCTION

This chapter deals with analysis and interpretation of the collected data. Based on the methodology stated, data were collected from the selected employees of pharmaceutical fund and supply agency (PFSA) at Addis Ababa branch. As indicated in the third the data were collected using questionnaires and interviews with the concerned officials. The analysis is done on the data collected through questionnaire, interview and observation according to the required flow.

4.1 Distributed and Returned Questionnaires

A total of 100 questionnaires were distributed to the selected department of PFSA who are working at different positions and have a direct exposure to the front-line activities . Out of which 70 (70%) of them have gave response. All the questionnaires returned were analyzed. Table 1 present the summary.

Respondents	Distributed questionnaires	Returned questionnaires	
Employees	100	70	70
Total	100	70	70

Table 1 Survey data

4.2   GENERAL INFORMATION OF THE RESPONDANTS

Gender composition of the respondents

Table 3: Showing gender composition of respondents

Gender	Frequency	Percentage (%)
Male	60	86
Female	10	14
Total	**70**	**100**

Source: Survey data

As illustrated in table 1, the study found out that the majority of the respondents were male as compared to the female. The number of males who participated in the study was represented 60(85.71%) as compared to less number 10(14.29%) of the female this may indicate that the nature of the organiiztion .

4.3 Age composition of respondents

Table 4: Showing age composition

Age range	Frequency	Percentage (%)
20-30	35	50
31 -40	25	36
41 – 50	10	14
51 & above	0	0
Total	**70**	**100**

Source: Survey data

The table above 2 shows that most of the respondents were between the ages of 20 – 30

That counting for 35(50%),age range of 31 -40 as reported by 25(36%) of the study respondents in the selected in the study area and 10(20%) of the study respondents were in the category age of 51 & above.This indicate that there is a potential advantage by young employes especially to achive company objective in cost minimization by

easily adopting to new system of inventory managements.

4.4 Marital status of the respondents

Table 5: Showing marital status

Marital status	Frequency	Percentage (%)
Single	45	65
Married	25	35
Divorced	0	0
Separated	0	0
Total	**70**	**100**

Source: Survey data

4.5 Education Level

Out of 70 questionnaires returned by the employees of PFSA 60 (86.96%) are degree graduates and the rest 10 (14.6%) are Master .hence we can conculude that all the respondants are educated and more than diploma holders .this implies that it is a good advantage for knowing Inventory managements usefull to company cost effectiveness.

4.6 IVENTORY MANAGEMENT PRACTICE USED BY PHARMACTICALS FUND AND SUPLIES AGENCY(PFSA)

The study investigated into the inventory management practices used by pharmacticals fund and supplies agency and the findings are tabulated in the subsequent tables.

The researcher first asked respondents whether Management is aware of existing scientific models of managing a firm inventory. The responses given by the respondents were in the form of strongly agree, agree, not sure, disagree, and strongly disagree as follow:-

Table 4.7. Whether Management is aware of existing scientific models of managing a firm inventory (A.B.C. Method of Inventory Control System as an example)
refere Survey result

	weight	Frequency	Percent	Valid Percent	Mean
Strongly agree	5	18	26	26	
Agree	4	27	39	39	
Not sure	3	12	17	17	
Disagree	2	9	13	13	
Strongly Disagree	1	4	5	5	
	Total	70	100	100.0	3.66

Source: Survey data

According to the table, 26% of the respondents strongly agreed and 39% agreed respectively that Management is aware of existing scientific model of managing a firm Inventory, 17% were not sure, 13% disagreed and 5% strongly disagreed to the idea. From the above response and survey result From the pharmcticals fund and supplies agency .Not only aware of existing scientific models managing a firms but using demand forecasting as a tools for inventory mangments that will improve organizational performance . but there is a problems of accurate forcasting that will

leads to inventory overstocking or understocking from theortical and physical examination of the store and users.

From the study conducted previously Kalchschmidt,2010 demand forecasting practice and performance evidence from Global manufacturing research group That investigates the impact of how forecasting is conducted on forecast accuracy and operational performance (i.e. cost and delivery performance). Attention is here paid on three factors that characterize the forecasting process: Analyses are conducted by means of data provided by the fourth edition of the Global Manufacturing Research Group survey. Data was collected from 503 companies belonging to several manufacturing industries from eleven different countries. findings show that companies adopting a structured forecasting process improve their operational performance.Pharmacticals fund and supplies agency are not using scientific model of inventory managements because of poor results arising from inaccurate data inputs forcasted errors in calculation fairlure of user in understanding data inputs. This lack of awareness and limited embrace of these cutting-edge practices in inventory management could account for the rising increase in raw material wastages, longer lead-time, lost sales, product shortages, backorder penalties, increasing production cost, and poor quality issues currently ravaging the industry. (Eloranta and Raisanen, 1988; Adeyemi and Salami, 2010; Alao, 2010).

4.8. Whether all inventory items in the stores are classified according to their economic value and importance

	weight	**Frequency**	**Percent**	**Valid Percent**	**Mean**
Strongly agree	5	25	35	35	
Agree	4	32	47	47	
Not sure	3	0	0	0	
Disagree	2	13	18	18	
Strongly Disagree	1	0	0	0	
	Total	**70**	**100**	**100.0**	**3.98**

Source: Survey data

According to the table, 35% of the respondents strongly agreed and 47% agreed respectively that all inventory items in our stores are classified according to their economic value and importance in PFSA , 18% disagreed and the other non. And the mean value of (3.8) which is good/high ("According to Best,)

From the above response and theoretical observation classification of all inventories according to their economic value and importance that It helps the organization to control or reduce costly items and stock maintained optimally.

From studies conducted previously ogobo anni,Onekama Victoria 2014 t was found that organizations benefits from inventory control management by way of easy storage and retrieval of material, improved sales effectiveness and reduced operational cost. It is recommended that organizations should adopt the inventory keeping method that best suit their operations.

Pharmacticals inventory is by their nature different from other inventory because one inventory keeps for a limited time or shelf life so that it needs to keep based on their usefulness. from the above questions respondents and observations we can say that keeping inventory based on their usefulness will avoid damages of pharmcticals inventory and minimize cost of the organization.

4.9.In arriving at the optimum quantity to order and kept at any point in time, management is guided by scientific models example economic order quantity					
	Weight	**Frequency**	**Percent**	**Valid Percent**	**Mean**
Strongly agree	5	3	5	5	
Agree	4	9	13	13	
Not sure	3	7	9	9	
Disagree	2	46	65	65	
Strongly Disagree	1	5	8	8	
	Total	**70**	**100**	**100.0**	**2.41**

Source: Survey data

According to the table, 5% of the respondents strongly agreed and 13 agreed respectively that In arriving at the optimum quantity to order and kept at any point in time, management is guided by a specific scientific model in PFSA , 9% were not sure, 65% disagreed and 8% strongly disagreed to the idea, and its mean of 2.41 which is lower ("According to Best, (1977)

From observation of practice and From the above respondant that above 70% of the respondant disagree that in arriving at the optimum quantity to order and kept at any point in time, management is not guided by a specific scientific model in PFSA. and its mean of 2.41 which is lower . Ordering above the required high cost of payment for holding stock include the money you have spent buying the stock as well as storage and insurance. Always keep in mind that: having too much stock equals extra expense for you as it can lead to a shortfall in your cash flow and incur excess storage costs and other cost. Ordering below the required having too little stock equals lost income in the form of lost sales.

4.10. In determining optimum stock levels, management strives to maintain a balance between minimum cost of ordering and holding stock					
	Weight	Frequency	Percent	Valid Percent	Mean
Strongly agree	5	6	8	8	
Agree	4	6	8	8	
Not sure	3	18	27	27	
Disagree	2	40	57	57	
Strongly Disagree	1	0	0	0	
	Total	70	100	100.0	2.68

Source: Suvey data

According to the table, 8% of the respondents strongly agreed and 8 agree respectively that In determining optimum stock levels, management strives to maintain a balance between minimum cost of ordering and holding stock in PFSA , 27% were not sure, 57% disagreed and non strongly disagreed to the idea. average /modrate Mean of 2.68 "According to Best, (1977)[1],

Implication see from table 4.3

Maintaining the RIGHT inventory stocking level is of utmost concern for your manufacturing business. Maintaining raw material and finished inventories at levels which are too low results in lost sales or costly production delays, or too high as to ties up much needed capital and space.

4.11 There is a specific procedure of determining the cost components of total inventory in this organization					
	Weight	Frequency	Percent	Valid Percent	Mean
Strongly agree	5	45	65	65	
Agree	4	16	22	22	
Not sure	3	9	13	13	
Disagree	2	0	0	0	
Strongly Disagree	1	0	0	0	
	Total	70	100	100.0	4.51

Source: Survey data

According to the table, 65% of the respondents strongly agreed and 22% agreed respectively that There is a specific procedure of determining the cost components of total inventory in this organization in PFSA ,13% were not sure, non strongly disagreed to the idea. mean of 4.51 very Good "According to Best, (1977)[1].

Having specific procedure of determining cost component of the total cost could have the following Implication to the organization. It could **Improve of Efficiency; identify Profitable and Unprofitable Activities** It will throw light upon those activities which bring profits and those activities which result in losses. This will be done only if the cost of each product or each job is ascertained and compared with the price obtained. It also will help to fix an appropriate price. If prices are fixed without costing information, it is possible that the price quoted may either be too high, in which case orders cannot be obtained, or it may be too low, in which case

an order will result in a loss. It is a mistake on the part of any management to believe that mere increase in sales volume will result in profits; increased sales at prices lower than the cost may well lead the concern to the bankrupt court.

It would also Guide in Reducing Prices: Information for Proper Planning

In certain periods it becomes necessary to reduce the price even below the total cost. Costs, properly ascertained, will guide management in this direction **. it could also help to Control over Materials :**Information about availability of stocks of various materials and stores must be constantly available if there is a good system of Cost information. This helps in two ways. Firstly, production can be planned according to the availability of materials and fresh stocks can be arranged in time when old stocks are exhausted. Secondly, loss due to carelessness or pilferage or any other mischief will be known and, therefore, put down..

Sometimes it is necessary to decide whether production of one product or the other is to be increased. This problem can also be solved only if proper information about costs is used.

4.12 our stock management decisions are solely made by our suppliers.					
	Weight	Frequency	Percent	Valid Percent	Mean
Strongly agree	5	4	5	5	
Agree	4	4	5	5	
Not sure	3	5	8	8	
Disagree	2	32	47	47	
Strongly Disagree	1	25	35	35	
	Total	70	100	100.0	2

Source: Survey data

According to the table, 5% of the respondents strongly agreed and 5% agreed respectively that Our stock management decisions are solely made by our suppliers in PFSA , 8% were not sure,

47% were disagree and 35% strongly disagreed to the idea.and a mean of 2 which is lower "According to Best, (1977)[1],

If there is shortage of stocks in the stores there is no possibility of providing at the exact time when needed these results in loses of profit that is service charge and loses of customer satisfaction.

4.13.Inventory decisions in the firm are solely based in predetermined demand estimates.

	Weight	Frequency	Percent	Valid Percent	Mean
Strongly agree	5	10	13	13	
Agree	4	33	47	47	
Not sure	3	12	18	18	
Disagree	2	12	18	18	
Strongly Disagree	1	3	4	4	
	Total	70	100	100.0	3.5

Source: Survey data

According to the table, 13% of the respondents strongly agreed and 47% agreed respectively that Inventory decision in the firms based predetermined demand estmate PFSA , 18% were not sure, 18% were disagree and 4% strongly disagreed to the idea.and a mean of 3.5 which is good/high "According to Best, (1977)[1],Refer table 4.1

4.14 Stock replenishment is done continuously					
	Weight	Frequency	Percent	Valid Percent	Mean
Strongly agree	5	19	27	27	
Agree	4	24	35	35	
Not sure	3	19	27	27	
Disagree	2	5	7	7	
Strongly Disagree	1	3	4	4	
	Total	70	100	100.0	3.72

Source: Survey data

According to the table, 27% of the respondents strongly agreed and 35% agreed respectively that Stock replenishment is done continuously in PFSA , 27% were not sure, 7% were disagree and 4% strongly disagreed to the idea. and mean of 3.72 which is good /high "According to Best, (1977)[1],In observation and questions from pharmacticals fund and supplies agency that the goods are easily replenishes because their not only inventory recived from supllies order from world market but by locally purchase and other internal transfer from difrent programs inventory this implies that there is high over stocking and costly to company.

4.15. Most inventory decisions are made based on computerized data output

	Weight	Frequency	Percent	Valid Percent	Mean
Strongly agree	5	27	38	38	
Agree	4	23	32	32	
Not sure	3	13	20	20	
Disagree	2	5	7	7	
Strgly Disagree	1	2	3	3	
	Total	70	100	100.0	3.971

Source: Survey data

According to the table, 38% of the respondents strongly agreed and 32% agreed respectively that Most inventory decisions are made based on computerized data output in PFSA ,20% were not sure, 7% were disagree and 3% strongly disagreed to the idea. and mean of 3.971 which is good /high "According to Best, (1977)[1],

Ultimately, inventory optimization depends upon decisions made by inventory specialists and senior management based upon several considerations unique to their companies. Using sophisticated tools to make those decisions helps management more accurately balance the trade-offs between the costs of a stock-out versus the costs of overstocking. That means the capacity of the inventory management tool to adjust recommended stocking levels dependent upon variable risk tolerance comes into focus. For instance, analysis of sales data may reveal that per unit profit far exceeds the investment in inventory, a disproportionate reliance upon repeat and/or particularly high-volume clients, or that each sale opens additional revenue streams. These factors would compel management to push their risk tolerance in the direction of avoiding stock-outs, and thus having more inventory at the ready. Conversely, some companies stock costly

and/or perishable items, which are expensive to store and maintain, or sell to customers with limited alternatives to turn to. Furthermore, economic 8 Better Inventory Management conditions may dictate that a company must generate working capital from every possible source, a situation that certainly pertains in today's competitive environment. These factors would push management to stock as little inventory as possible to avoid the storage costs. Of course the reality is that mid-market and larger distributors and manufacturers commonly stock a mix of inventory that falls into both rubrics with varying levels of overlap. This means they need to push multiple turns of high volume items and pull lean inventory of items that move less frequently and everything in between. As a result, the ability of an inventory optimization tool to adjust forecasts based on "what-if" parameters is a huge plus to management. Again, the responsibility of inventory management is to make better decisions that result in a better balance of trade-offs, depending on shifting goals influenced by events on the ground. When innovative and sophisticated tools become available to help them improve that balance, those tools can provide a large and ongoing return on investment. If a distributor has typically carried $60 million worth of inventory and utilized an inventory optimization tool to reduce that level of inventory by 5 percent while maintaining customer satisfaction, that company has added $3 million of working capital to the balance sheet. Some companies look to reduce inventory much further. According to a recent WSJ.com report, "The best supply organizations deploy sophisticated analytical tools to reduce inventory levels by 20 percent to 50 percent, resulting in savings for years.

4.16 .Our suppliers are contacted immediately when there is no stock in stores.

	Weiht	Frequency	Percent	Valid Percent	Mean
Strongly agree	5	9	13	13	
Agree	4	12	17	17	
Not sure	3	18	26	26	
Disagree	2	27	39	39	
Strongly Disagree	1	4	5	5	
	Total	**70**	**100**	**100.0**	**2.92**

Source: Survey data

According to the table, 13% of the respondents strongly agreed and 17% agreed respectively that Our suppliers are contacted immediately when there is no stock in stores in PFSA , 26% were not sure, 39% were disagree and 5% strongly disagreed to the idea and a mean of 2.92 average /moderate "According to Best, (1977)[1],

4.20. Inventory management decisions in the firm are based on guestimates **.**

	weiht	Frequency	Percent	Valid Percent	Mean
Strongly agree	5	12	17	17	
Agree	4	22	31	31	
Not sure	3	22	31	31	
Disagree	2	9	13	13	
Strongly dis agree	1	5	8	8	
	Total	**70**	**100**	**100.0**	**3.38**

Source: questionnaires, Nov, 2015

According to the table, 17% of the respondents strongly agreed and 31% agreed respectively that Our Inventory management decisions in my firm are based on guestimates in PFSA , 31% were not sure, 13% were disagree and 8% strongly disagreed to the idea.and mean of 3.38 which is average/moderate "According to Best, (1977)[1],Because of lack of knowelage of demand forcasting and quantification needs of pharmacticals inventory pfsa use quesstimate that leads to optimaiztion problems to cost .

4.21. IVENTORY CONTROL USED BY PHARMACTICALS FUND AND SUPLIES AGENCY(PFSA)

TABLE .4.21	Storgy Agree	Agree	Not sure	DisAgre e	Strongly DisAgree	Frege ncy	Mean
Are policies and procedures current, in writing, properly approved and communicated to the different departments	15	19	24	12	0	70	**3.53**
Are these policies and procedures support internal control	24	24	9	9	4	70	**3.78**
does management taken the appropriate steps to safeguard goods against risk of loss by theft	18	34	9	9	0	70	**3.87**
Are inventory records reconciled on a yearly basis	18	34	9	9	0	70	**3.87**
Over all mean							**3.76**

Source: Survey data

According to the table, 21% of the respondents strongly agreed and 27% agreed respectively Are policies and procedures current, in writing, properly approved and communicated to the different departments in PFSA , 35% were not sure, 17% were disagree and non strongly disagreed to the idea. and mean of 3.53 which is agood/high "According to Best, (1977)[1], According to the table, 35% of the respondents strongly agreed and 35% agreed respectively **Are these policies and procedures support internal control** in PFSA , 13% were not sure, 13% were disagree and 4% strongly disagreed to the idea. and mean of 3.78 which is agood/high "According to Best, (1977)[1], According to the table, 26% of the respondents strongly agreed and 48% agreed respectively **does management taken the appropriate steps to safeguard goods against risk of loss by theft .**13% were not sure, 13% were disagree and non strongly disagree. and mean of 3.87 which is agood/high "According to Best, (1977)[1], **Source:** According to the table, 26% of the respondents strongly agreed and 48% agreed respectively **Are inventory records reconciled on a yearly basis in PFSA** , 13% were not sure, 13% were disagree and non strongly disagreed to the idea. and mean of 3.87 which is agood/high "According to Best, (1977)[1],

4.22. SURVY RESULT

Internal control inventory/stocks

➢ Receipts of new Pharmaceuticals into store should be evidenced by pre-numbered financial inventory Goods Receiving Vouchers prepared in five copies.

➢ Pharmaceutical stock control will be exercised by Cost recovery team of the Fund management Directorate maintaining stock general /subsidiary ledger accounts by major stock classification, divided between local and imported stock items and stock record cards in quantity and value for each individual financial inventory item. Bin cards are maintained to take control and account of stock quantity movements.

➢ *Internal control is strengthened if there is a separate stores recording section independent of the storekeepers who will only maintain bin cards for their own use*. Storekeepers must not have access to the Cost recovery team stock card records nor should they have access to stock cards of the stores recording section .

➢ The transfer of Pharmaceuticals from one location to another or from Head Office to Branches or from branches to branches may be evidenced by Stock Transfer Voucher invoices or delivery orders in case of un costed stocks in emergency cases.

➢ Receipts of transferred Pharmaceuticals from Head Office to Branch or from Branch to Branch within the agency should be evidenced by pre-numbered financial inventory Inter organizational Goods Receiving Vouchers which is prepared in five copies.

➢ Similar pharmaceuticals with the same supplier, unit of issue due to transfer or return to store should be averaged using moving average method.

➢ Physical inventories on hand should be taken by persons other than the storekeepers, either continually on a cyclical basis or periodically so that all goods can be counted at least once in a year.

➢ Differences between physical inventories and the stock record card quantity balances, after their being reconciled with the stores cards/storekeeper's bin cards must be reported to management for decision on the action to be taken. Write-off or adjustment of difference may only be made on the written approval of management.

4.23 procedure for physical counts

The necessary procedure before physical inventory talking as follows: -

➢ Stock items should be clearly identified as to stock number, description, size, etc. and well arranged in stock number order so as to facilitate counting.

➢ Adequate cut-off procedures must be in force to ensure that the purchases and sales records are completely up-dated at the time of the stocktaking. Movement of goods during stocktaking must be stopped or most carefully controlled to prevent items being omitted from the count or counted more than once.

➢ Stocktaking sheets should be in standard form, pre-numbered and prepared in advance with the stock numbers and descriptions, but not the quantities of the items to be counted. The issue and return of the stocktaking sheets must be controlled by accounting for all numbers, by persons independent of the storekeepers and stock counters.

➢ Written instructions, approved by a responsible official, should be issued to all persons concerned with the stocktaking, detailing each person's responsibility and the way in which the stocktaking is to be carried out.

➢ Stock should be counted by teams consisting of one person with adequate knowledge to properly identify the items of stock and make the count and a second person to record the results of the count on the stocktaking sheets and check its accuracy by making a recount. Storekeepers should be available to assist but must not participate in counting items for which they are responsible.

➢ Broken, defective or obsolete items must be clearly recorded as such on the stocktaking sheets and scheduled separately for consideration by management.

➢ Supervisors to whom the stock counters may refer to for guidance should be available during the stocktaking. Supervisors should make test counts and ensure that all items have been counted and the counts recorded.

➢ Items counted must be marked and a check made that all items have been physically counted and included on the count sheets.

➢ Immediately after counting of each section is completed, employees who have had no involvement in either counting or stock record card recording should enter the quantity balances according to the stock record cards on the stocktaking sheets, the card balances

being given a distinguishing mark and care taken that all balances are included on the count sheets.

➢ Differences identified should be immediately recounted by both teams once again. Differences still existing between book stock quantities and physical count quantities should be recorded on the stocktaking sheets and scheduled for reporting to management.

4.24 Determining the cost components

In determine cost component for products purchase abroad or foreign in pharmacticals fund and supplies agency use five cost elements that is :-

➢ 1 FOB value of the the purchase order
➢ 2 Insurance payment for the goods
➢ 3 Bank Service Charge
➢ 4 freight that is sea freight up to Djibouti and inland cost up to mojo dray port
➢ Customs for inland and revenue authority

CHAPTER FIVE

SUMMARY OF FINDING ,CONCULSION AND RECOMMEDTION

5.1 Summary of Major findings and conclusion

The objectives of this research is to investigate the Inventory management practice of pharmacticals fund and supplies agency by studding the Inventory management practice as a unit of analysis. Both qualitative and quantitative data collection tools are used. data were collected by using interviewee questions and questioners data collection tools. Interview question were used to study regarding determination of cost components ,inventory control other qualitative data .document Review was contacted to study the current pharmacticals fund and supplies agency policy and procedure. the questionnaires data were collected from different department of pharmacticals and fund and supplies ageny.The study tries to assess the inventory management practices of pharmacticals and supplies agency.

The following Major findings and conclusion were obtained from different source of data collection instrument used for this study

- ➢ The main objective of assesing inventory management is to determine and maintain an optimal level of inventory, which helps free some investment capital and reduce inventory holding and handling costs. A firms should avoid either overstocking inventory or running the risk of inventory stock-outs. Keeping too much inventory on hand not only increases costs, but it also subjects inventory to potential deterioration and obsolescence. On the other hand, keeping the inventory level too low may disrupt normal business operations (Donald walter,2001).

- ➢ From the analysis there is demand forecasting models in place in pharmactiucals and funds supplies agency but as a results of uncertainty of demand estimates brought a problems due in products stock outs and increase cost to organization.

- ➢ In PFSA In arriving at optimal quantity to order managements is not guided by Scientific inventory management models example EOQ but it heavily depend on demand forecasting model of managing a firm with a mean of 3.5 which is good /high which leads to longer lead time absence of safety stock.

- In determining optimum stock levels management not strives to maintain adequate balance between minimum cost of ordering and holding stock in PFSA.
- Inventory items in our stores are classified according to their economic value and importance with the mean value of (3.8) which is good/high it helps the organization to control cost and maintained stock optimization.
- In PFSA suppliers are not Supplied immediately when there is no stock in stores this leads problems on economic order quantity .
- In PFSA Most inventory decisions and control are made based on computerized data output That is HCMIS System for inventory management and determining cost of pharmacticals.
- In PFSA there is specific procedure of determining cost component that is value of the goods or FOB value, Inland and sea freight, bank service charge ,insurance and payment to Ethiopian revenue Authority that is customs.
- In pfsa there is good Inventory control procedure and policy to safeguard against Theft.

5.2.   RECOMENDTION

On the basis of the result of this study and knowledge driven from literate review the following recommendation are suggested so as to be considerd in the future which are aim at the improvement of Inventory management practice

- Rather than depending on Market demand and guesstimate in managing inventory, there is need for the organizations to adopt scientific models example EOQ in determining inventory quantities and managing inventory cost.
- Pharmacticals fund and Supplies Agency should adopt inventory management strategies that minimize Inventory holding and ordering cost rather than completely relying demand and estimation supplies situation.
- Because of lack awareness usage and usefulness to Best practice inventory management software should be deployed as a reliable strategy for managing the rising cost of the holding stock. This may involve training employees on the usage of the software, or by acquiring the services of external system and consultants.