



Assessing the Impact of Efficient Inventory Management in on Organization

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Abstract: *The inefficient inventory control measures by procurement officers and store keepers have always been a central Problem. Inexperience workers are likely to spend no effort in their job they sometimes absent themselves from work and also produce low quality work. On the other hand, workers who are experienced and have passion for work are likely to produce high quality work and also achieve their goals and objectives.*

Employers need to know their workers very well (their abilities and capabilities) and use different tactics to encourage them to work effectively.

Once training and development is very important determinant in performance and productivity, this area of knowledge need further research, therefore the goal of this project is to reveal what it is that encourage all workers to perform at their best and achieve optimal business result at all times.

The inherent problem I have identified is that many employers have attempted several different strategies to encourage their workers to work effectively, yet the strategies have not worked for everyone in the company.

Primary and secondary source of data will constitute the bulk data for the project. The primary Source of data would be gathered through a well-structured open and close-ended questionnaire. Data from secondary source will be gathered primarily from Korle Bu Teaching Hospital records. Twenty five (25) people were selected at random from Korle Bu Teaching Hospital at all levels. Twelve (12) out of the twenty five (25) questionnaires were received.

The data gathered will be both qualitative and quantitative. The data to be gathered would be analyzed with appropriate tools. Additionally, adequate literature will be reviewed to extract fact for use in the analysis.

Keyword: *Assessing Impact, Inventory Management, Efficient Management*

I. INTRODUCTION

The research work is based on Inventory Management Practices in an organization (Korle Bu Teaching Hospital). Most Public and Private sector organizations have failed because of mismanagement of inventory. It is therefore important to manage our inventory very well. It is evident that the profitability of any business organization depends largely on the ability of management to exercise effective purchasing and efficient material control.

Inventory which typically represents 45% to 90% of all expenses of organization are needed to ensure that the business has the right goods on hand to avoid stock out and provide proper accounting. Inventory is defined as a list of goods and materials or those goods and materials held available in store. An inventory system is the process of managing and locating material. The success of many organizations today is directly related to the smooth management of inventory. Inventories constitute the most significant part of current assets of a large majority of organization in Ghana. Inventories are approximately 70% of current asset of organizations.

Inventory management is about specifying the size and placement of stocked goods. It required at different locations of a supply network to protect the regular and planned course of production against the disturbance of running out materials or goods. Many companies have gone through a lot of challenges. Despite the many challenges that companies go through the basic principle of inventory management remain the same. Inventory held by an organization represents a large percentage of their capital. Inventory control involves the coordinating of materials available, utilizing and procuring of material. Inventory control is the direction of activities with the purpose of getting the right inventory in the right place at the right time and in the right quality.

Inventories are the stock of raw materials, work in progress, finished goods and supplies held by a business organization to facilitate operations in the production process, (1). Also if the company fails to manage its inventory efficiently, it is likely to face profitability problems (3). The goal of inventory control include:

- To minimize the costs involved in purchasing, stocking, and issuing of the supplies,
- To reduce the frequencies of ordering for stock items,
- To decrease pilferage, waste and over stocking;
- To integrate and deploy within the logistical system the minimum amount of inventory consistent with desired delivery capability and total cost expenditure,
- To ensure adequate supply of products to customer and avoid shortages as far as possible, and
- To provide a reserve stocks for variations in lead of delivery of materials. (8) and (6).

Inventory management helps organization to establish the proper inventory levels through the economic order quantity; and to keep track of this level through inventory control system which many are manual such as two bin method and red line method, or computerized inventory control systems. Proper inventory controls also require an organization to undertake stocking and use appropriate method to value stock so as not to under or over state profits (10).

Companies incurred substantial costs in the procurement and maintenance of inventories, which costs form a large portion of production costs. Inventory costs include: carrying costs such as storage and insurance; ordering costs like transporting and store placement; and stock out costs like redundancy and loss of sales. A company cannot achieve an outstanding performance without proper and efficient control of materials. Materials are as much as cash itself and any theft, wastage and excessive use of materials are of immediate financial loss and leads to poor performance of a company (10).

(12) Noted that Material control involved a systematic control and regulation of purchase, storage and usage of materials in such a way to maintain an even flow. In recent years, organization's has been facing a number of challenges especially in inventory management or material control, thus affecting the performance of most them. There have been cases of materials overstocking which eventually get expired or out dated, under stocking lack of stock-taking theft of materials by workers and delays in deliveries of materials at the sites, among others.

Efficient inventory control can be done through introduction of different measures so as to prevent the company from incurring unnecessary losses made by different departments. Measures which can be put in place for example stock-taking which is the accounting of stock at every end of the month, so as to record the lost and available stock, etc. The company should set up strict rules to procurement officers and store managers which they should follow during purchasing and storing of material so as to avoid loss.

It is therefore important for an organization to have a sound, effective and well-coordinated inventory management system because the business environment is rapidly changing, highly competitive and it drastically affects the performance of the organization.

II. LITERATURE REVIEW

The purpose is to know the relevance of practicing inventory management in the health sectors. It is concerned mostly with the ideas the various authors have about this particular problem being studied. In any organization, all functions are inter-linked and connected to each other and are often overlapping.

Inventory management is very important. Every organization strives to maintain optimum inventory to be able to meet its requirements and avoid over or under inventory that can impact on the financial figures. Inventory is always dynamic. It requires constant and careful evaluation of external and internal factors and control through planning and review.

A. Definition of inventory

(17) Defines inventory as an idle resource of any kind that has potential economic value and considered as lock capital. A practical definition from the materials management angle is the item of store or material kept in stock to meet future demands of production, repairs, maintenance, construction etc. The primary function of inventory is to make suppliers available when needed and also to maintain continuous operations.

According to (16) essentials of inventory management includes a company's raw materials, work in process, supplies used in operations and finish goods.

In the view of (11), defines inventory as a list of items held in stock. In U.S.A., the term inventory is synonyms with stock.

(11), in his view defines inventory as a resource of any kind having an economic value. An inventory consists of raw materials, work in progress, finished goods, consumables and stores. Inventory may be stated as the detailed description of all stores and stocks.

B. Motivation for holding inventory

i. Rationale for holding inventory:

There are many reasons that motivate an organization to have stock. (7)Have identified four reasons for holding stocks, 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 longer production runs if more material is inventoried, allowing per unit fixed cost reductions.
- b) *Balancing supply and demand:* Some firms accumulate inventory in advantage of seasonal demand. A brewer sees some demand year-round, but 60 percent or more sales will come in the festive season. By manufacturing to stock, production can be kept level 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 beverages, then finished inventory helps meet demand when materials are no longer available.
- c) *Specification:* Inventory allows firms with subsidiaries to specialize. Instead of manufacturing a variety of products, each plant can manufacture a product and then ship the finished products directly to customers or to a warehouse for storage. By specializing, each plant can gain economies of scale through long production runs.

- d) *Protection from uncertainties:* A primary reason to hold inventory thus to offset uncertainties in demand. If demand increases and raw material stock run out, the production line shuts down until more material is delivered. Likewise, a shortage of work in process means the product cannot be finished which will lead loss of customers due to stock outs.

C. Types of inventory

According to (18), inventories can be categorized into six (6) distinct forms, which are:

- i. *Cycle Stock:* This 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 (lead times) almost perfectly. For example, if the rate of sales for a constant 20 units per day and the lead time is always 10 days, no inventory beyond the cycle stock would be required. While assumptions of constant demand and lead time remove the complexities involved in inventory management, let's look at such an example to clarify the basic inventory principles.
- ii. *In-transit inventories:* These 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. For the calculation of inventory costs, in-transit inventories should be considered as inventory at the place of shipment origin since the items are not available for the firm, buyer, sale, or subsequent reshipment.
- iii. *Safety or buffer stock:* This is held in excess of cycle stock because of uncertainty in demand or lead time. The notion is that a portion of average inventory should be devoted to cover short-range variations in demand and lead time. Average inventory at a stock-keeping location that experiences demand or lead time variability is equal to half the order quantity plus the safety stock.
- iv. *Speculation stock:* They are inventory held for reasons other than 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.
- v. *Seasonal stock:* Seasonal stock is a form of speculative stock that involves the accumulation of inventory before a season begins in order to maintain 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.

D. Inventory costs

According to (9), there are three types of costs that must be considered in setting inventory levels.

- a. Holding (or carrying) costs are costs such as storage, handling, insurance, taxes, obsolescence, theft and interest on funds financing the goods. These charges increase as inventory levels rise. In order to minimize carrying costs, management makes frequent orders of small quantities. Holding costs are commonly assessed as a percentage of unit value, thus 15 percent, 30 percent, rather than attempting to derive a monetary value for each of these costs individually. This practice is a reflection of the difficulty inherent in deriving a specific per-unit cost for, for example, obsolescence or theft.
- b. Ordering costs are those costs associated with placing an order, including expenses related to personnel in a purchasing department, communications and handling of the related paperwork. Lowering these costs would be accomplished by placing a small number of orders, each for a large quantity. Unlike carrying costs, ordering costs are generally expressed as a monetary value per order.
- c. Stock-out costs include sales that are lost, both short and long term. These charges are probably the most difficult to compute, but arguably the most important because they represent the costs incurred by customers (internal or external) when inventory policies falter. Failure to understand these costs can lead management to maintain higher (or lower) inventory levels than customer requirements may justify.

E. Inventory classification models

Inventory classification models help allocate time and money in inventory management from one hand and classifications systems enable companies to deal with multiple product lines and a multitude of stock-keeping units to another hand. Therefore, (7) have identified two models related to inventory classification. These models will be discussed in order to provide background information concerning inventory classification.

a. ABC analysis

Brown (7,17) notes that the ABC analysis categories products based on importance. Importance may come from cash flows, lead time, stockout costs, sales volume, or profitability. Once the ranking factor is chosen, break points are chosen from A. B. C. and so on.

The 80-20 concept is particularly used in distribution planning when the products are grouped or classified by their sales activity. The top 20 percent might be called A items, 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 levels for the A items. B items would have intermediate distribution strategy where few regional warehouses are used (2).

(2) adds that another frequent use of the 80-20 concept and an ABC classification is to group the products in a warehouse, or other stocking point, in a limited number of categories where they are then managed with different levels of stock availability. The product classifications are arbitrary. The point is that not all product items should receive equal

logistics treatment. The 80-20 percent concept with a resulting product classification provides a scheme, based on sales activity, to determine the products that will receive various levels of logistics treatment.

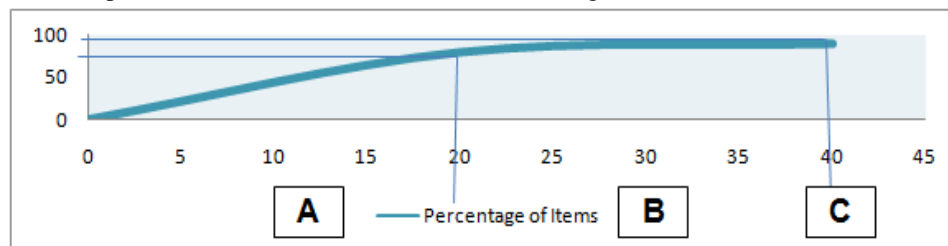


Figure 2.1: A diagram of the Pareto Curve

Thus, by using of such an analysis, many organizations divide the items held in stock, each type of classification being dealt with in a different manner. This type of analysis enables management to identify the high usage/high value items within the stock range and allocate resources accordingly to ensure full and adequate control.

The following variables as stated in the diagram are explained below:

- **A items:** these are very important for an organization because of its high value and its frequency value analysis required. In addition to that, an organization needs to choose an appropriate order pattern (e.g. 'Just-in-time') to avoid excess capacity. They are very tightly controlled and good records are kept.
- **B items** are inter-group items thus they are important but of course less important than 'A' and also more important than 'C'. Items under this category are less tightly controlled and less records keeping.
- **C items** are have the simplest controls possible and minimal records keeping therefore making them marginally important.

b. Critical value analysis

Critical value analysis (CVA) pays more attention to C items. Although it ranks products similarly to ABC, CVA analyses products based on stockout rates. Normally using three to five categories, CVA could evaluate products as follows:

1. Top priority: Critical item and no stock - outs are permitted.
2. High priority: essential item, but limited stock - outs are permitted.
3. Medium priority: necessary item, but occasional stock - out permitted.
4. Low priority: desirable item, but stock - outs are allowed.
5. Lowest priority: needed item, but stock - outs are permitted on a wide basis.

Stock - out rates are assigned subjectively to each category. Top priority might have zero stock - outs, high priority items a 3 percent stock - out rate, medium priority a rate of 6 percent, low priority 20 percent, and lowest priority 15 percent.

F. Symptoms of inefficient / poor inventory management

A certain number of symptoms allow discovering poor inventory management. (18) mention the following elements in order to diagnose inefficient / poor inventory management:

- a) Large quantities of obsolete items.
- b) Deteriorating relationships with intermediaries as typified by dealer cancellations and declaring orders.
- c) High customer turnover rate.
- d) Periodic lack of sufficient storage – space.
- e) Increasing number of back orders.
- f) Increasing number of orders cancelled.

In many instances, inventory levels can be reduced by one or more of the following steps:

- a) Installation of formal re-orders review system.
- b) Examination of returned goods procedures.
- c) Elimination of turnover and or obsolete items.
- d) Analysis of customer demand characteristics.
- e) Delivery time analysis. This may lead to a change in carriers or negotiation with existing carriers.
- f) Lead time analysis.

G. Just-in-time inventory management (the kanban technology)

(17) stated that JIT production is called by many names: zero inventory production system (ZIPS), minimum inventory production system (MIPS), stockless production, pull-through production and quick response (QR) inventory systems. The JIT production philosophy is founded upon three fundamental principles: elimination of waste, continuous quality improvement and encouragement of worker participations planning and execution.

(9) adds that this just-in-time manufacturing philosophy requires manufacturers to work in concert with suppliers and transportation providers to get required items to the assembly line at the precise time they are needed for production.

A successful JIT system is based upon the following key concepts:

- a. Quality, With JIT, the customer must receive high quality goods. One of the historical roles of inventory has been to protect the customer against defective items; if a bad product is received it can be discarded and a new one drawn from inventory. With a JIT system, however, poor quality means the production line stops or the external customer gets a defective item. There are no “extra” items to replace the poor ones.
- b. Vendors as partners. Generally, firms using JIT rely on fewer vendors rather than more. Purchases are concentrated with a limited number of suppliers in order to give the buyer leverage with respect to quality and service. Purchasers also include vendors in the planning process, sharing information regarding sales and production forecasts so that vendors then have a clear idea of what their customers need.

i. Advantages of JIT

a. More inventory turns. Because there is less on hand, the inventory that is maintained stays for a shorter period of time. The problem with an extremely high number of turns is that it can raise the probability of stocking out an unacceptable high level while raising ordering costs as well.

b. Better quality. As was mentioned earlier, high quality products must be received with a JIT system or else the entire benefit production process collapses. Customers concentrate their purchases with a small number of vendors in exchange for receiving high quality items and requisite service. The costs of failure on either count to the vendor thus become very high.

c. Less warehousing space. When there is less inventory, fewer and /or smaller warehouses are required. Under JIT production strategy, only a minimum amount of inventory is held on the production line. To ensure a reliable delivery system, the plan employs a pull strategy whereby part orders are automatically issued once the supply on line falls below a critical level.

ii. Disadvantages of JIT

a. Risk of stock-outs. When firms eliminate inventory, the risk of stock-out can rise. Managers attempt to minimize this occurrence by demanding very high levels of service from their vendors and logistics service providers. However, when co-location of customer and vendor is not feasible, for example, the resultant variability in the pipeline can lead to stock-outs despite management’s best effort to prevent them.

b. Increased transportation costs. Since JIT requires frequent shipments of small quantities, transportation cost almost always rises. As long as these costs are more than offset by the inventory savings, it is advantageous for the organisation to permit them. However, it is possible to spend more on transport than is being saved with the JIT system, so management must ensure that movement expenses are closely monitored.

c. Increased purchasing costs. As mentioned earlier, purchasing discounts are generally associated with buying large quantities at a time. Theoretically, JIT means foregoing those price-breaks in favour of obtaining smaller amounts more frequently. Managers must make sure that purchasing costs are not rising more than what inventory costs are falling.

d. Small channel members may suffer. JIT is sometimes criticised as a system that allows strong organisations to unload their inventory on smaller firms in the channel. Theoretically, every company in the pipeline can utilise JIT, the reality, however, is that channel leaders may impose such stringent delivery criteria that vendors may feel compelled to hold inventory in order to satisfy them.

e. Environmental issues. In a micro sense, JIT can lead to high levels of traffic congestion and air pollution because additional transportation is often required to maintain customer service levels in the absence of inventory.

H. Inventory control systems

Inventory control involves the planning, ordering and scheduling of materials used in the manufacturing process. It exercises control over three main types of inventories: raw materials, work in progress and finished goods.

Purchasing is primarily concerned with raw materials inventory, which includes raw or semi processed materials, fabricated parts and MRO items.

(6) adds that the purpose of the inventory control function in supporting the business activities is to optimize the following three targets:

- Customer service
- Inventory costs
- Operating costs.

The most profitable policy is not to optimize one of these at the expense of others. The inventory controller has to make value judgments. If profit is lacking, the company goes out of business in the short term.

The first target, customer service, can be considered in several ways, depending on the type of demand. In a general stores environment the service will normally be taken as ‘availability ex stock’, whereas in a supply to customer specification, the service expected would be delivery on time against customer requested date.

The second target, inventory costs, requires a minimum of cash tied up in stock. This has been to be considered carefully, since there is often the feeling that having any stock in stores for a few months is bad practice. In reality, minimizing the stock usually means attending to the major costs: very low-value items are considered in items of space,

or other critical resource. Where the item is voluminous, or the stores space restricted, the size of the items will also be a major consideration.

The third target, avoiding operating costs, has become more of an issue as focus has been placed on inventory management. The prime operating costs are those associated with the stores operations, inventory control, purchasing and the associated services.

At each point in the inventory system, operation managers need to manage the day-to-day tasks of running the system. Orders will be received from internal or external customers; these will be dispatched and demand will gradually deplete the inventory.

Orders will need to be placed for replenishment of the stocks; deliveries will arrive and require storing. In managing the system, operations managers are involved in three major types of decision:

How much to order. Every time a replenishment is placed, how big should it be (sometimes called the volume decision)?

When to order. At what point or level of stock, should the replenishment order be placed also known as the timing decision)?

How to control the system. What procedures and routines should be installed to help make these decisions?

According to (13), inventory control is ensuring a sufficient level of stock and satisfying demands regarding quantity, quality, time and place and to control prices. They mention four types of inventory control systems:

- A system with fixed ordering quantities
- A cyclical ordering system
- A Just-In-Time approach
- A materials requirement planning (MRP) system.

In order to provide basic information on inventory control systems, each of the four above-mentioned models will be discussed in paragraphs following.

a) Fixed ordering quantities

According to (6) the basic characteristic of the system is that whenever stocks are replenished, the same fixed quantity is ordered (the economic order quantity) every time.

Inventory is issued from an existing inventory level (A) and depleted over a period of time up to t1, when the re-order level (B) is reached and further depleted over the period to t2, when the safety-inventory level (C) is reached. No safety inventory is issued because the ordered fixed quantity is received at time t2, and inventory is replenished to level A2. The process repeats itself and a fixed quantity is ordered whenever the re-ordering level (B2; B3) is reached.

Three important characteristics to remember for the fixed order quantity system are:

- That supplier lead times have to be constant $[(t_2-t_1) = (t_4-t_3) = (t_6-t_5)]$
- The maximum demand within that lead time (should be forecasted than A3-C3 insufficient inventory could very well be available).
- The system is fairly simple to control and the EOQ is ordered is ordered on every occasion.

b) Cyclical ordering system

According to (6) the cyclical ordering system's most prominent characteristic is that the level of all inventory items are received at fixed, predetermined times to determine whether sufficient inventory is available. The review cycles vary according to the nature of the inventory, but longer review cycles require higher maximum (as well as average) inventory levels. Shorter review cycles however mean more orders and higher replenishment costs.

An important characteristic to remember for the cyclical ordering system is minimum inventory level has to be calculated for every item according to the lead time and length of review cycle (in days or week).

c) Just-In-Time approach

Just-in-time systems focus on reducing inefficiency and unproductive time in the production process to continuously improve the process and the quality of the product or service. Employee involvement and inventory reduction are essential to JIT operations. Just-in-time systems are known by many different names, including zero inventory, lean production, stockless production (17), material as needed (7) and continuous flow manufacturing (IBM) [8]. Details regarding JIT have been given in the point 2.2.7 of this study or dissertation.

d) Materials Requirement Planning (MRP) system.

The availability of cost-efficient computer systems has allowed firms to make great progress controlling dependent-demand inventory. A widely used system that controls dependent-demand inventory is the material requirements planning (MRP) system. This system relies on production schedules developed for final part numbers in the master production schedule (MPS) to determine the timing and quantities of materials required for components or subassemblies (16).

(8) explains that MRP deals specifically with supplying materials and component parts whose demand depends upon the demand for a specific end product. Essentially, MRP begins by determining how much of the final product customers desire, and when they need it. Then MRP breaks down the timing and need for components (all of which could have different lead times) based upon that scheduled end-product need. A MRP system consists of a set of logically related procedures, decision rules and records designed both to translate a master production schedule into time-phased net inventory requirements and to delineate how those requirements will be satisfied.

Emphasising on the pertinence of the use of MRP in business organisations, (19) underline that without a MRP model, it is impractical and tedious to plan requirements of component parts and assemblies needed to assemble the final product in the quantities required during future time horizons.

I. Efficient inventory management improvement

(9) has identified six (6) activities in order to improve efficient inventory management. These activities will be explained in order to provide some background information on the efficient improvement of inventory management in business organisations.

- a. Top management commitment. Because lower inventories have impact on many different parts of the logistics systems, senior leadership must ensure that all those activities are working together to meet customer needs without the luxury of excess stock.
- b. ABC analysis of all inventory items. Management must first understand that goods in inventory are the most important in times of their contribution to the objectives of the organisation. These few items that generate the most profits, for example, or are deemed mission-essential by the firm's most important customers would be designated "A" items and perhaps maintained at virtually 100 percent availability. The bulk of the goods in inventory would be denoted "B" items that might be supported at, for instance, 80 percent levels. Finally, there could be some low-demand items classified as "C" which are maintained at very low levels or possibly not stocked at all.
- c. Improved performance of the other logistics activities. Managers should ensure that the rest of the logistics system is functioning efficiently. It may be that inventory policies have evolved as a way to obscure other problems that should be dealt with directly. By reviewing transportation, order processing, and warehousing functions, for example, management may find that order-cycle variability can be reduced by improving those activities that would lower the need for inventory.
- d. Improved demand forecasting. Demand forecasting is also a way of reducing variability, this time in terms of expected versus actual sales. Better forecasting techniques can be utilised to more accurately predict actual sales.
- e. Inventory management software. Software is currently available for virtual any type of inventory management situation and allows managers to track sales by item, costs length of time in inventory and other vector as well. Many of the more comprehensive packages are structured around some variation of material requirements planning (MRP) or distribution requirements planning (DRP) depending on the nature of the inventory concerned. Briefly, MRP manages material and in-progress inventory for production while DRP deals with finished product inventory. Together DRP and MRP provide precise control over material flow through the logistics system from supplier to customer.
- f. Postponement involves modifying or customizing products after the main manufacturing process is complete. Final configuration of products can be delayed until the distribution cycle, or even performed after delivery.

(9), leaning on their research done on the multi-attribute classification method for spare parts inventory management have found that any improvement in the management of this type of inventory is desirable and useful in practice, leading to both improved factory performance and reduced investment in inventories.

i. Efficient inventory policies

(8) have identified four policies in view of the sane inventory management. These policies will be discussed in order to provide solid information on the inventory management.

- a. Inventory control is the managerial procedure for implementing an inventory policy. The accountability aspect of control measures units on hand at a specific location and tracks additions and deletions. Accountability and tracking can be performed on a manual or computerized basis. Inventory control defines how often inventory levels are determined when and how much to order. It is performed on either a perpetual or a periodic basis. (9) adds that the control system allows you to determine mistakes that have been made or identify areas that need your immediate attention. To be most effective, the inventory control system must also provide information in a timely manner to allow you to make decisions while problems can still be corrected. (8) based on the benefit of demand visibility in production and inventory control, note that controlling the manufacture's production and inventory using the customer's sell-through data, must be done instead of using order or delivery data.

Two models are usually used to control inventories:

- *Perpetual review*

A perpetual inventory control process reviews inventory status daily to determine inventory replenishment needs. To utilize perpetual review, accurate tracking of all Stock-Keeping Units is necessary. Perpetual review is implemented through a re-order point and order quantity. The formula for calculating the perpetual review re-orders point is:

$$ROP = DXT + SS$$

Where:

ROP= Re-order point in units

D= Average daily demand in units

T= Average performance cycle length in days; and

SS= Safety or buffer stock in units.

- *Periodic review*

Periodic inventory control reviews the inventory status of an item at regular time intervals such as weekly or monthly. For periodic review, the basic re-order point must be adjusted to consider the extended intervals between reviews. The formula for calculating the periodic review re-orders point is:

$$ROP = D (T + P/2) + SS$$

Where:

ROP= Re-order point

D= Average daily demand

T= Average performance cycle length in days;

P= Review period in days, and

SS= Safety or buffer stock in units.

- b. Reactive methods**

The reactive or pull inventory system, as the name implies, responds to a channel member's inventory needs by drawing the product through the distribution channel. Replenishment shipments are initiated when available warehouse stock levels fall below a predetermined minimum or order point. The amount ordered is usually based on some lot-sizing formulation, although it may be some variable quantity that is a function of current stock levels and a predetermined maximum level.

Classical reactive inventory logic is rooted in the following assumptions. Firstly, the system is founded on the basic assumption that all customers, market areas and products contribute equally to profits.

Secondly, a reactive system assumes infinite capacity at the source. This assumption implies that products can be manufactured as desired and stored at the production facility until required throughout the supply chain.

Thirdly, reactive decision rules assume that performance cycle time can be predicted and that cycle lengths are independent. This means that each performance cycle is a random even and that extended cycles do not generally occur for subsequent replenishment orders. Although reactive logic assumes no control over cycle times, many managers are unable to influence performance cycle length through expediting and alternative sourcing strategies.

Fourthly, reactive inventory logic operates best when customer demand patterns are relatively stable and consistent. Ideally, demand patterns should be stable over the relevant planning cycle for statistically developed inventory parameters to operate correctly.

- c. Planning methods**

Inventory planning methods use a common information base to coordinate inventory requirements across multiple locations or stages in the supply chain. Planning activities may occur at the plant warehouse level to coordinate inventory allocations and delivery to multiple destinations. Planning may also occur to coordinate inventory requirements across multiple channel partners such as manufacturers and retailers.

- i. Fair share allocation**

Fair share allocation is a simplified inventory management planning method that provides each facility with an equitable or "fair share" of available inventory from a common source such as a plant warehouse. Using fair share allocation, the inventory planner determines the amount of inventory that can be allocated to each warehouse from the available inventory at the plant.

- ii. Distribution Requirement Planning (DRP)**

DRP is a more sophisticated planning approach that considers multiple distribution stages and their unique characteristics. It may also be regarded as a multi-echelon environment. DRP is the logical extension of manufacturing requirement planning (MRP), although there is one fundamental difference between the two techniques. MRP is driven by a production schedule that is defined and controlled by management policy. On the other hand, DRP is driven by customer demand. So, while MRP generally operates in a dependent demand situation, DRP operates in an independent demand environment where uncertain customer demand drives inventory management.

- iii. Adaptive logic**

A combined inventory management system may be used to overcome some of the problems inherent in rising either a reactive or a planning method. The factors that might make a reactive system better in one situation may change over time to favour the use of an inventory planning system. Thus, the ideal approach is an adaptive inventory management system that incorporates elements of both types of logic and allows different strategies to be used with specific customer or product segments.

J. Inventory planning

Every organization that is engaged in production, sale or trading of Products holds inventory in one or the other form. While production and manufacturing organizations hold raw material inventories, finished goods and spare parts inventories, trading companies might hold only finished goods inventories depending upon the business model.

When in case of raw material inventory management function is essentially dealing with two major functions. First function deals with inventory planning and the second being inventory tracking. As inventory planners, their main job consists in analyzing demand and deciding when to order and how much to order new inventories. Traditional inventory management approach consists of two models namely:

- EOQ - Economic Order Quantity
- Continuous Ordering
- Periodic Ordering

1. **EOQ:** Economic Order Quantity method determines the optimal order quantity that will minimize the total inventory cost. EOQ is a basic model and further models developed based on this model include production Quantity Model and Quantity Discount Model.
2. **Continuous Order Model:** works on fixed order quantity basis where a trigger for fixed quantity replenishment is released whenever the inventory level reaches predetermined safety level and triggers re ordering.
3. **Periodic System Model:** This model works on the basis of placing order after a fixed period of time.

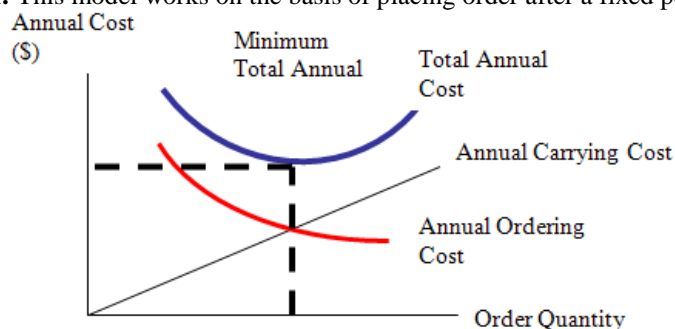


Figure 2.2 EOQ Model

Example: Biotech’s produces chemicals to sell to wholesalers. One of the raw materials it buys is sodium nitrate which is purchased at the rate of \$22.50 per ton. Biotech’s forecasts show an estimated requirement of 5, 75,000 tons of sodium nitrate for the coming year. The annual total carrying cost for this material is 40% of acquisition cost and the ordering cost is \$595. What is the Most Economical Order Quantity?

$$EOQ = \sqrt{2DS/C}$$

D = Annual Demand

C = Carrying Cost

S = Ordering Cost

D = 5,75,000 tons

C = 0.40(22.50) = \$9.00/Ton/Year

S = \$595/Order

$$EOQ = \sqrt{2(5,750,000)(595)/9.00}$$

$$= 27,573.135 \text{ tons per Order}$$

This model pre supposes certain assumptions as under:

- No safety Stocks available in inventory.
- No Shortages allowed in order delivery.
- Demand is at uniform rate and does not fluctuate
- Lead Time for order delivery is constant
- One order = One delivery no shortages allowed.
- This model does not take into account other costs of inventory such as stock out cost, acquisition cost etc to calculate EOQ.

In this model, the demand increases for production the inventory gets depleted. When the inventory drops to a critical point the re order process gets triggered. New order is always place for fixed quantities. On receipt of the delivery against the order the inventory level goes up.

Using this model, further data extrapolation is possible to determine other factors like how many orders are to be placed in a year and what is the time lapse between orders etc.

K. Inventory management practice

Good inventory Management practices in the company help by adding value in terms of having control over and maintaining lean inventory. Inventory should not be too much or too less. Both the situations are bad for the company. However often we see that inventory is not focused upon by the management and hence lot of inefficiencies build up over a period of time without the knowledge of the management. It is only when we start a cost reduction drive that the inventory goofs up and skeletons come out of the cupboard and results in revamping the entire operations.

However those companies, which have always focused on inventory as a principle function and recognized that the inventory effects their sales, as well as the books of accounts and profits, have managed to introduce and improve inventory management processes. Many business models work on lean inventory principle or JIT inventory along with other models like VMI etc. Inventory management to a large extent is dependent upon the supply chain efficiency as well as operations.

Inventory management is a management cum operations function. It requires operational processes to be followed and maintained on the floor and in inventory management systems. Coupled with operations, it entails continuous study; analysis and decision making to control and manage inventory levels.

We have covered below briefly few of the points which when followed, can go a long way in ensuring that the inventory is lean and clean.

i. Review Inventory periodically and revise stocking patterns and norms

Inventory is dependent upon the demand as well as the supply chain delivery time. Often companies follow one stocking policy for all items. For example, all A, B & C categories may be stocking inventory of 15 days, which may not be the right thing that is required. While some items may have a longer lead-time thus affecting the inventory holding, the demand pattern and the hit frequency in terms of past data may show up differently for each of the inventory items. Therefore one standard norm does not suit all and can lead to over stocking of inventory as well as in efficiencies in the system.

ii. Get into detailed inventory planning - One size does not fit all

Understand the inventory types and the specific characteristics of the items you are carrying. Then build the inventory stocking parameters taking into account the unique characteristics of the particular inventory.

From amongst your inventory list, you will find that all types of materials are not of the same value. Some might be very expensive and need to be carried in stock for a longer period, while another item might have a shorter lead-time and may be fast moving. Quite a few items often have shelf life and hence require separate norms and focus to manage such items.

Getting into the detailed understanding will help you identify the inventory-stocking norm required to manage these characteristics to ensure optimum efficiency. The solution quite often may not be to carry stocks; rather it may involve setting up the customer service standard for such items and specifying a delivery time depending upon the frequency of demand. Quite a few items often have shelf life and hence require separate norms and focus to manage such items.

iii. Study demand pattern, movement patterns and cycles to build suitable inventory norms for different categories of inventory

Companies which are into retail segments and dealing with huge inventories in terms of number of parts as well as value will necessarily need to ensure they practice review of inventory list and cleanup operations on ongoing basis.

Popularly known as catalogue management, inventory norms review should be carried out based on detailed study of the sales data, demand pattern, sales cycles etc. Understanding of the business and sales cycles specific to the product category helps one manage inventories better. For example, in case of retail garments, with every season certain skills become redundant no matter how their demand was in the previous months. This helps identify those stocks which are required to be managed at a micro level and identify the high value and fast moving items that need to be always on the radar to avoid stock outs.

It does not help for example to carry standard stocks of all items including low value items as well as high value items. If the low value items are locally available and the lead-time is less, one can cut down on the inventory and change the buying pattern. Similarly high value items too can be managed by cutting down the delivery lead times and in turn reducing inventory.

It helps to periodically study the past data and extrapolate the same to identify slow moving and obsolete items. The dead stocks should be flushed out and active catalogue items should be made available.

L. Stock taking

According to, (11), stock taking as 'the complete process of verifying the quantity balance of the entire range of items held in stock'. The list of items held in stock and the quantity on hand for each item can be copied from records or obtained by checking the contract of the stores. It is copied from records; a physical check is still needed to produce the records and right.

i. Purpose of stocktaking

According to Jessop D. and Morrison A. (1994, 6th edition, page 145-174) these are the purpose of stock taking.

- To verify the accuracy of the stock records
- To support the value of stocks shown on the balance sheet
- To disclose the possibilities of fraud, theft or loss.
- To reveal any weakness in the system for the custody and control of stock.

The size and number of surplus and deficiencies revealed by stocktaking is a good criterion of the efficiency of storekeeping methods, control and procedure generally.

ii. Method of stocktaking

There are two main methods of stocktaking according to Jessop D. and Morrison A. (1994 6th edition, page 145-174) these are periodic and continuous stocktaking.

iii. Periodic stocktaking

By the system it refers to a system where stocktaking is usually done periodically, say once or twice a year. This system has certain inherent short comings which tend to detract from usefulness of the physical verification. The main short comings of the system are.

Since the verification of all items has to be completed within a given a number of days, either the production department or user department has to be shut down during this period to enable verification to be done effectively.

There is the problem of finding properly turned persons to do the work.

The elements of surprise are very essential for effective control; but it is absent in the case of periodic verification and therefore there is the possibility of greater fraud, discrepancies and others.

Since the discrepancy, fraud, etc. are revealed only after the stock counting at the end of a certain period, there is little scope of taking preventive action.

iv. Advantages of periodic stocktaking

- Greater chance of elimination of obsolete terms due to periodic review of stock
- The purchasing load may be spread more evenly with possible economies in placing orders.
- Large quantity discounts may be negotiated when a range of stock items are ordered from the same supplier to the same time.
- Production economies due to more efficient production planning and lower set up costs may result from orders always being in the same sequences.

v. Disadvantages of stocktaking

- On the average, large stocks are required than with order point systems since recorder quantities must provide for the period between reviews as well as between lead times.
- Re-order quantities are not based on EOQs.
- If usage rate changes shortly after a review period, a stock out may occur before the next review date.
- Difficulties in determining appropriate review periods unless demands are reasonably constants.

M. Continuous stock-taking

This system consists of counting and verifying a number of items daily throughout the year so that during the year all items of the store are verified. Continuous stocktaking is absolutely essential when an organization uses what is known as perpetual inventory system. This is a stock recording whereby the stock balance is shown on the record after every stock movement; either issues a dispatch or receipt.

With this system the balance on the stock record represent the stock on hand and balances would be used in monthly and annual accounts as the closing stock. Continuous stocktaking is functioning correctly and that minor stock discrepancies are corrected. The methods of physical checks are the same as those employed for periodic stocktaking, but the significant differences in other respect as follows. There is no need to close down the stores or the works whiles stocking is in progress.

The normal posting of receipts and issue on the check records can continue without interruption. The work can be done by specially appointed, experienced and trained stock takers, completely independent of the storekeeping staff. Assuming that continuous program of stocktaking to plan; the balance and the block control accounts can be accepted for balance sheet purpose without any special year end accounts as far as stock is concerned.

i. Factors and procedures to be considered in stocktaking.

- For a satisfactory stocking, a good deal of preparation is necessary.
- First of all, a program should be draw up and agreed with all concern including the financial department and the auditors.
- Secondly, stocking sheets or cards have to be prepared in advance.
- Thirdly, all personnel connected must be instructed in their duties – the arrangements made should deal with all aspects of the job and in particular the following points.

While stocking is in progress do not have the storehouse opened for normal business.

Appoint one person to control the whole operation. After the end of working day before the operation begins, no more issues should be made and no receipt record until the stocking is complete.

Take all normal stock including packages, residues, scrap, items on loan and goods under inspection.

Have stocktaking sheets under the control of one individual consecutively numbered and number duplicate should be allowed and at the end of the job, all stocktaking sheets must be accounted for.

Record separately damaged deteriorated and used items. Return to stock all items issued 'on loan' either internally or externally before stocktaking begins. List separately any goods which have been received but not yet taken on charge (leg. Still under inspection)

N. Inventory control systems

An inventory control system is a set of hardware and software based tools that automate the process of tracking inventory. The kinds of inventory tracked with an inventory control system can include almost any type of quantifiable goods, including food, clothing, books, equipment and any other item that consumers, retailers or wholesalers may purchase. Modern inventory control systems are almost exclusively based on barcode technology. Though barcodes were initially developed to automate the process of grocery store checkout, their ability to encode a wide variety of alphabetic and numeric symbols makes them ideal for encoding merchandise for inventory applications. Inventory control systems work in real-time using wireless technology to transmit information to a central computer system as transactions occur.

O. Summary

Inventory management is one of the important key activities of business logistics. Because of its role in organisations, (16) adds that inventory is one of the most important instruments of logistics planning and control. While inventory on work in process is linked to the production process, physical inventory on stock or in buffer storage is unnecessary from the standpoint of added value and is considered as waste of time and money (tied-up capital).

(8) are of the opinion that inventory typically represents the second largest component of logistics cost next to transportation. The risks associated with holding inventory increase as products move down the supply chain closer to the customer because the potential of having the product in the wrong place or form increases and costs have been incurred to move the product down the channel. In addition to the risk of lost sales due to stockouts because adequate inventory is not available, other risks include obsolescence, pilferage and damage.

According to (6), inventory is a significant asset in cost organisations. Its efficient management, therefore, is a key task within the auspices of operations. But controlling inventory is far from easy. It involves a complex set of decisions due to the result of functional policies within an organisation as well as short and long term decisions in purchasing, operations and sales.

The optimal management of inventories is a primary objective for all the firms manufacturing make to stock finished goods. As a matter of fact, inventories have important implications for both the financial and economic performance of the company; therefore it is widely acknowledge that an optimal inventory management policy allows companies to achieve higher profitability levels. In general items, inventory management policies should be aimed at lowering the holding cost through higher inventory rotation, but without triggering substantial stockouts and backorders, caused by demand peaks and /or lead time delays (3).

As all organisations are concerned with inventory management, a particular accent has to be put to it. A sane inventory management implies the coordination of strategic functions (production, finance and marketing) of the organisation in order to reach objectives. The achievement of any organisation's objectives is linked to the relationship of functional goals. That's the reason why strategic policies related to inventory management have to be arrested or conceived in order to achieve the organizational goals. Because, failure to that, an organization will grind to a halt.

III. RESEARCH METHODOLOGY

A. Introduction

This chapter presents methods and procedures that the researchers used when assessing the findings of the study and also presented the important information (data) and specific fields of the survey that has being carried out in KORLE BU TEACHING HOSPITAL

B. Study area

The study was conducted at KORLE BU HOSPITAL the purpose of the study was to access the impact of inventory management in a company

C. Research design

The research was designed in such a manner, which enabled the researchers to meet the objectives of the study; the researchers therefore used both qualitative and quantitative research designs, which were descriptive and analytical in nature. The descriptive aspect of the research design was used in establishing the company performance and the analytical research design was also used to establish relationship between inventory control and performance.

D. Population

The survey populations employed were staff members of KORLE BU TEACHING HOSPITAL comprising of purchasing officers, store keeper, accountant, Records officers, National health insurance officers, and the general manager of KORLE BU TEACHING HOSPIOTAL on behalf of the hospitals in Ghana.

E. Sampling procedure

The researchers used purposive sampling to select the samples from the population. Simple random sampling was used to limit on the biasness of purposive sampling. Numbers were allocated, written on small pieces of paper, shuffled and were randomly picked by respondents until all the required respondents are over.

F. Data collection

The data collection strategy consists of structured self-administered questionnaire which give improved insight of the project work and also enhance an effective communication with the population under study.

G. Source of data

The data used were both primary and secondary. Primary data was collected by the use of questionnaires and secondary data were obtained from reports, journals, and internet.

H. Data processing and analysis

The quantitative data that was collected by the questionnaire was first coded. In the coding process, a coding sheet was constructed. A number then assigned to each answer in the questionnaire with a corresponding number on the

coding sheet. Then the same questionnaire was constructed on the computer using excel. Frequency tables, and graphs were worked out based on the data that was entered into excel. In these frequency tables, graphs analysis was done with a corresponding percentage.

I. Historical Background of Korle Bu Teaching Hospital – Accra

Korle Bu Teaching Hospital was established on October 9th, 1923. Under Sir Gordon Guggisbergs administration By the Governor of the Gold Coast. Guggisberg expanded Korle Bu to include Medical School. Korle Bu Teaching Hospital is the third largest Hospital in Africa and the leading

i. National Referral Centre in Ghana – Accra

Korle Bu means the value of the Lagoon, it has a structures such as the Maternity, Medical, Surgical and Child Health Block. Korle Bu gained Teaching Hospital status in 1962, when the University of Ghana Medical School (UGMS) was established for the training of Medical Doctors locally rather than abroad University Of Medical School (UGMS) however, undertake their clinical training and research in the Hospital.

Korle Bu have clinical and diagnostic department which includes; Clinical Health, Obstetrics And Gynecology, Pathology, Laboratories, Radiology, Anesthesia, Surgery, Accident Centre And The Surgical/Medical Emergency as well as Pharmacy Other Department Includes; Finance, Engineers, General Administration etc.

The Hospital also provides sophisticated and scientific investigative procedures and specialization in various fields such as Neuron-Surgery, Dentistry, Eye, Noise and Throat (ENT) Renal, Orthopedics, Oncology, Dermatology, Cardiothoracic, Radiotherapy, Radio Diagnosis, Pediatric Surgery and Reconstructive Plastic Surgery and Burns.

The Reconstructive Plastic Surgery and Burn Centre, The National Centre and the National Centre for Radiotherapy and Nuclear Medicine in particular also dram a sizeable number of their clientele from neighboring countries such as Nigeria, Togo, and Burkina Faso. Korle Bu Teaching Hospital provides service to patient from various Hospitals and clinics across the Nation (Ghana).

Korle Bu Teaching Hospital is one of the few Hospitals in Africa where Deoxyribonucleic Acid (DNA) investigation are carried out. Others specialized services the Hospital provide includes; Brachytherapy Intervention for the treatment of Prostate Cancer and Key Hole Surgeries.

Korle Bu Teaching Hospital is well positioned to help provide services to patient across the length and breadth of the country and has provided service to numerous patients across the Nation. Korle Bu is the Nation premier Hospital in Ghana

IV. FINDINGS AND DISCUSSION

Data were collected through the use of designed questionnaire. The researcher analyzed the responses acquired from the twelve (12) questionnaires constructed by the use of charts, graphs and tables. In all 12 questionnaires was receive from both management and staff of KORLE BU TEACHING HOSPITAL.

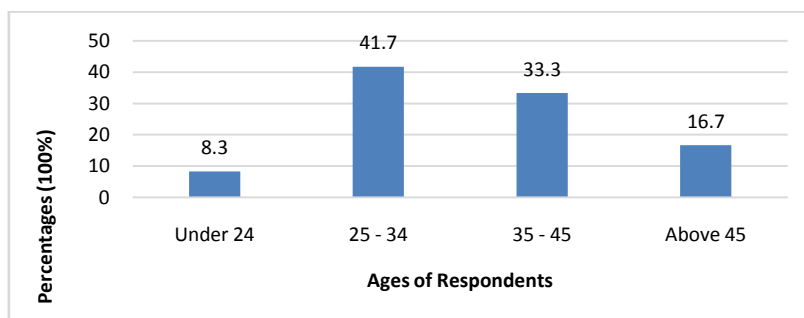
A. General Information

AGE DISTRIBUTION:

Table 4.1 Represents the Age of the Workers at KBTH

Ages of Respondents	Frequency	Percentage (%)
Under 24	1	8.3
25 – 34	5	41.7
35 – 45	4	33.3
Above 45	2	16.7
Total	12	100

Source: Field Data July 2014.



Source: Field Data July 2014.

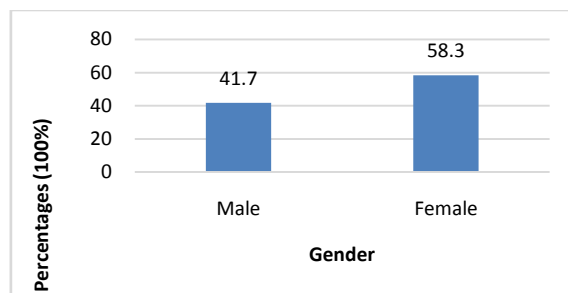
Figure 4.1 Represents the Age of the Workers at KBTH

Figure 4.1 shows that, out of 12 respondents, 8.3% of the respondents was under 24years of age, 41.7% was between 25 to 34years, 33.3% were between 35 to 45 years, and 16.7% were above 45years. This implies that most respondents were youth.

Table 4.2 Gender

Response	Frequency	Percent
Male	5	41.7
Female	7	58.3
Total	12	100

Source: Field Data July 2014.



Source: Field Data July 2014.

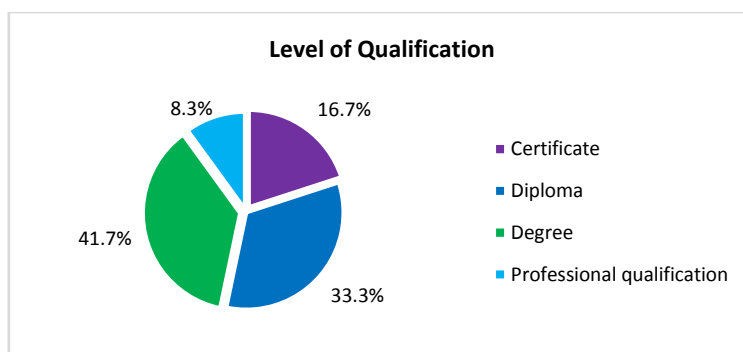
Figure 4.2: Gender

Table 4.2 shows that 41.7% were male and 58.3% female. This indicates that females were more than male in the study.

Table 4.3 Highest Level of Education Attained

Qualification	Frequency	Percentage 100%)
Certificate	2	16.7
Diploma	4	33.3
Degree	5	41.7
Professional Qualification	1	8.3
TOTALS	12	100

Source: Field Data July 2014.



Source: Field Data July 2014

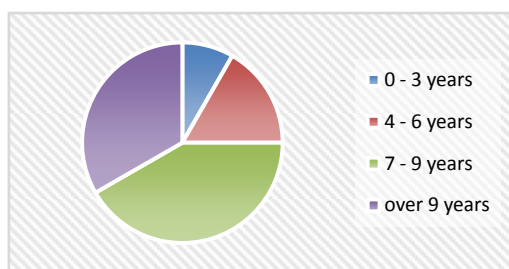
Figure 4.3 Highest Level of Education Attained

Figure 4.3 shows that 16.7% of the respondents were certificate holders, 33.3% diploma holders, 41.7% degree holders, and 8.3% had professional qualifications.

Table 4.4. Period Spent Working with Korle Bu Teaching Hospital

Response	Frequency	Percent
0-3years	1	8.3
4-6years	2	16.7
7-9years	5	41.7
Over 9years	4	33.3
Total	12	100

Source: Field Data July 2014.



Source: Field Data July 2014.

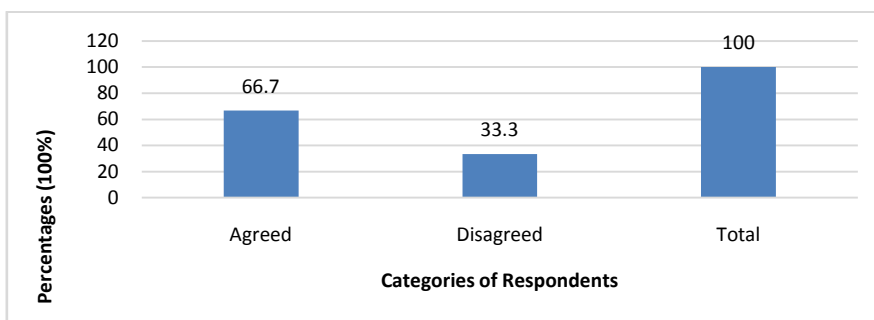
Figure 4.4 Period Spent Working with Korle Bu Teaching Hospital

Table 4.4 shows that 8.3% of the respondents had spent between 0 to 3years working the organization, 16.7% between 4 to 6years, 41.7% between 7 to 9years and 33.3% over 9years. This implies that respondents had experience with the study.

Table 4.5: Categories Of Respondents Dealing with the Firm’s Inventory Management Policies

Categories of Respondents	Frequency	Percentage (%)
Yes	8	66.7
No	4	33.3
Total	12	100

Source: Field Data July 2014.



Source: Field Data July 2014.

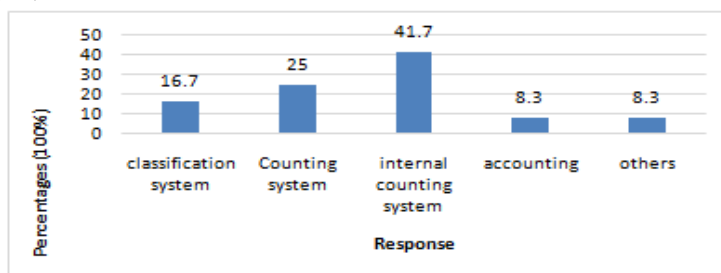
Figure 4.5: Categories Of Respondents Dealing with the Firm’s Inventory Management Policies

FIGURE 4.5 highlights the two (2) categories of respondents dealing with the firm’s inventory or stock management policies. According to the 12 respondents, 8 of them agreed that the organization have management policies whiles 4 of them disagreed. The distribution of percentage according to the activity area is 66.7% for Yes and 33.7% for No.

Table 4.5.1 Depicts Responses Derived From Inventory / Stock Management System Being Practiced I\in the Firm.

Response	Frequency	Percent
Classification systems	2	16.7
Counting system	3	25
Internal control system	5	41.7
Accounting system	1	8.3
Others	1	8.3
Total	12	100

Source: Field Data July 2014.



Source: Field Data July 2014.

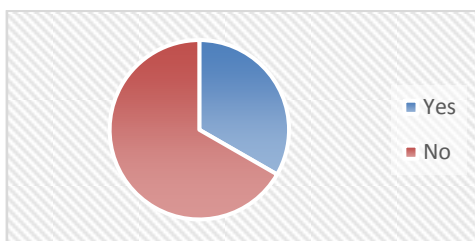
Figure 4.5.1 Depicts responses derived from inventory / stock management system being practiced in the firm.

Table 4.5.1 reveals that, out 12 respondent representing 100%. 16.7% stated that the company use classification system,25% uses counting system,41.7% uses internal control syste,8.3% uses accounting system also 8.3% said others. This implies KORLE BU TEACHING HOSPITAL has a responsible supervisor for their control systems.

Table 4.5.2: Maximum Attention Paid to Inventories whose Value is Highest

Response	Frequency	Percent
Yes	4	33.3
No	8	66.7
Total	12	100

Source: Field Data July 2014.



Source: Field Data July 2014.

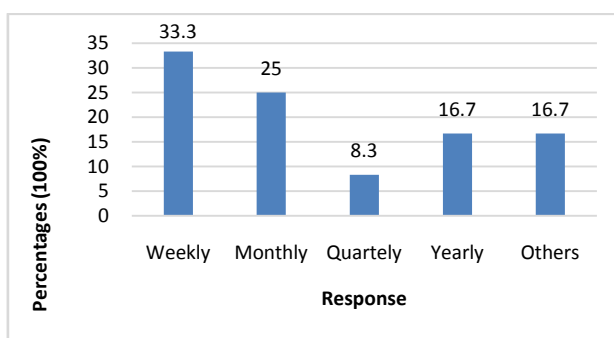
Figure 4.5.2: Maximum Attention Paid to Inventories Whose Value is Highest

Table 4.5.2 reveals that 33.3% were Yes and 66.7% No. This implies that staff members of KORLE BU TEACHING HOSPITAL do not pay maximum attention to those inventories whose value is highest.

Table 4.5.3: How often Korle Bu Hospital Experiences Under Stocks Situations.

Response	Frequency	Percent
Weekly	4	33.3
Monthly	3	25
Quarterly	1	8.3
Yearly	2	16.7
Other	2	16.7
Total	12	100

Source: Field Data July 2014.



Source: Field Data July 2014.

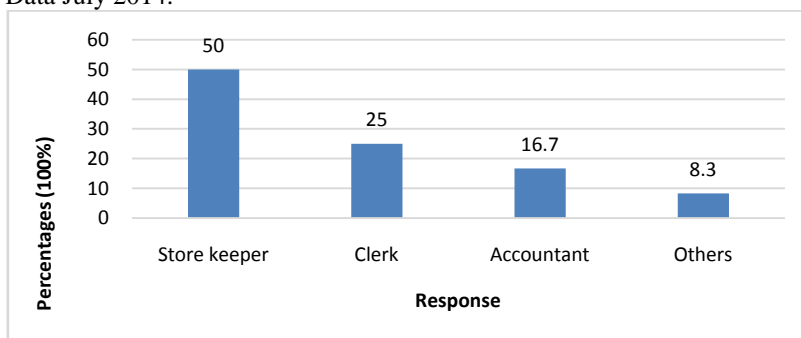
Figure 4.5.3: How often Korle Bu Hospital Experiences Under Stocks Situations.

Table 4.5.3 shows that 33.3% ticked that KORLE BU TEACHING HOSPITAL experiences under stocks situations on weekly basis, 25% agreed on monthly basis, 8.3% ticked quarterly, 16.7% stated yearly, and 16.7% stated other ways in which the organization experience under stocks. This implies that the organization experiences under stocks situations.

Table 4.5.4: Authorization of Purchase.

Response	Frequency	Percent
Store keeper	6	50
Clerk	3	25
Accountant	2	16.7
Other	1	8.3
Total	12	100

Source: Field Data July 2014.



Source: Field Data July 2014.

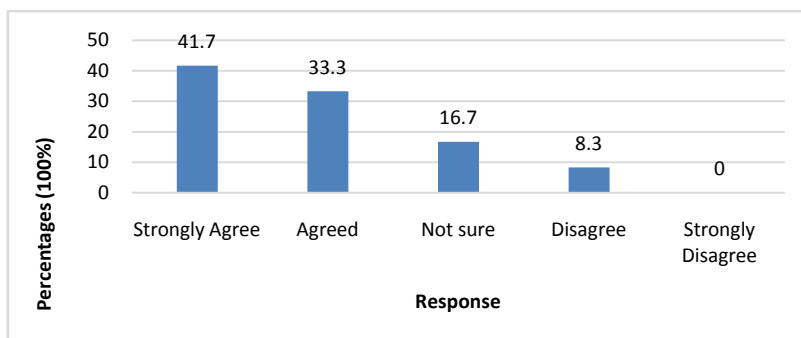
Figure 4.5.4: Authorization of Purchase.

Table 4.5.4 shows that 50% of the respondents stated that a store keeper authorizes purchase, 25% clerk, 16.7% accountant, and 8.3% other. This implies that the firm does not have a responsible official who authorizes purchase.

Table 4.5.5: Challenges Concerning Transportation And Freight Costs

Response	Frequency	Percent
Strongly agreed	5	41.7
Agreed	4	33.3
Not sure	2	16.7
Disagree	1	8.3
Strongly Disagree	0	0
Total	12	100

Source: Field Data July 2014.



Source: Field Data July 2014.

Figure 4.5.5: Challenges Concerning Transportation and Freight Costs

Table 4.5.5 shows that five strongly agreed that KORLE BU TEACHING HOSPITAL is faced with transportation and freight costs depicting 41.7%, four agreed representing 33.3%, two were not sure depicting 16.7%, one disagreed representing 8.3%, and none strongly disagreed depicting 0%. This shows that the organization is faced with transportation and freight costs.

B. Findings and observations

From the above information, it can be concluded that there is poor or inefficient inventory management at KORLE BU TEACHING HOSPITAL. Thus, the control systems used are not managed properly, which leads to under stocking and increased cost of inventory. Also, the organization does not pay close attention to its high value inventories

V. SUMMARY OF FINDING, CONCLUSIONS AND RECOMMENDATIONS

This chapter involves the summary of the findings in relation to the study objectives, conclusion based on the problem statement and recommendations based on the conclusion.

A. Summary of findings

Findings revealed that there isn't a responsible official who authorizes purchase, staff members of KORLE BU TEACHING HOSPITAL do not pay maximum attention to those inventories whose value is highest, stocks are not being stored at the appropriate warehouses, KORLE BU TEACHING HOSPITAL experiences under stocks situations, and gets damaged goods from its stored.

B. Conclusions

Findings revealed that Goods are not inspected on receipt, staff members of KORLE BU HOSPITAL do not pay maximum attention to those inventories whose value is highest, all store staffs of KORLE BU TEACHING HOSPITAL are not highly skilled, the firm experiences under stocks situations, and gets damaged goods from its storage facilities. Besides that KORLE BU TEACHING HOSPITAL is faced with costs of checking on orders and maintaining records of the entire process, handling costs.

C. Recommendations

KORLE BU TEACHING HOSPITAL should on how to manage inventories well to avoid under stock and reduce damage of inventory.

The company should also fix the stock levels that is, maximum, minimum, and reorder levels for all items in stock in order to avoid inadequate stocks or stock outs suffered by the company.

KORLE BU TEACHING HOSPITAL should put into consideration inventory management when planning for better profits in the coming years and should also minimize the cost of production as lowest as possible.

The top management executive should embark on the various mechanisms that determine how efficient inventory can be managed.

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