



**ST MARY'S UNIVERSITY  
SCHOOL OF GRADUATE STUDIES**

**ASSESSMENT OF INVENTORY MANAGEMENT AND  
CONTROL SYSTEM: THE CASE OF AL-SAM PLC**

**BY**

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**JUNE, 2020**

**ADDIS ABABA, ETHIOPIA**

# **ASSESSMENT OF INVENTORY MANAGEMENT AND CONTROL SYSTEM: THE CASE OF AL-SAM PLC**

**THESIS SUBMITTED TO SCHOOLS OF GRADUATE STUDIES OF ST.MARY'S  
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DEGREE OF MASTERS OF ART IN ACCOUNTING AND FINANCE**

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**JUNE, 2020  
ADDIS ABABA, ETHIOPIA**

## **DECLARATION**

I the undersigned declare that this thesis entitled “Assessment of inventory management and control system: the case of AL-SAM Plc.” Is my original work and has not been submitted to St. Mary’s University or any other institution of higher learning as a thesis and all sources of information have been duly acknowledged.

I have carried out the research independently under the supervision of the research advisor, Asmamaw G.

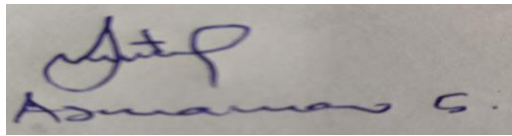
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Selam G/medhin

June 2020  
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## **ENDORSEMENT**

This is to confirm the thesis entitled “Assessment of inventory management and control system: the case of AL-SAM Plc.” is conducted by Mrs.Selam G/medhin was under my supervision. The work is original in nature and is appropriate for submission for the award of the masers of art in accounting and finance

A rectangular box containing a handwritten signature in blue ink. The signature is cursive and appears to read 'Asimamaw G.'.

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**Asimamaw G. (Ass. Professor)**

**June 2020**

**Addis Ababa, Ethiopia**

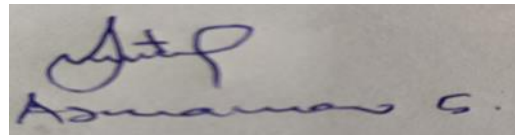
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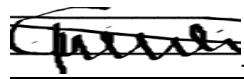
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## **ACRONYMS**

<b>A.B.C</b>	Always Better Control
<b>EOQ</b>	Economic Order Quantity
<b>ERP</b>	Enterprise Resource Planning
<b>FIFO</b>	First in First Out
<b>GPS</b>	Global Positioning System
<b>LIFO</b>	Last In First Out
<b>L.T</b>	Lead Time
<b>MRP</b>	Materials Requirement Planning
<b>RFID</b>	Radio-Frequency Identification
<b>SAP</b>	Systems Applications and Products
<b>SME</b>	Small and Micro Enterprise
<b>SOP</b>	Standard Operating Procedure
<b>SPSS</b>	Statistical Package for Social Sciences

## **Abstract**

*The purpose of this study is to assess the inventory management and control system in the case of AL-SAM PLC. The research targets the staffs that have direct dealings with inventory management and controlling systems in various departments of the organization. To obtain representative samples, in selecting the research respondents, purposive sampling method is applied; this sampling method helps to get respondents who have good insight of inventory. Therefore the study takes 96 respondents as target respondents. Both primary and secondary data were collected and The SPSS version 24 for windows is used. The study utilized both quantitative and qualitative data analysis techniques. To answer the research questions, descriptive statistics such as mean values, percentage and frequency tables are used. The finding of the study indicates that the internal controls over inventory were implementing in a good ways and there has to be an area which needs correction like ensuring compliance with company policies and accurate and reliable operating data and accounting reports. the study also finds that the company has being doing well in many aspects but still there are a problems which needs urgent response like regarding procurement processes, human capital development, discarding used and unnecessary materials and in managing customers demand. The researcher recommends that there is need for AL-SAM management to emphasize applying Optimized Inventory Management Techniques, Implementing Integrated and Automated Inventory Management System, Recruiting adequate and qualified staffs, Developing Employees Capacity, Implementing Proper Disposal System, Developing Up-to-date Inventory Management Policies & Procedures.*

**Keywords:** *inventory, inventory management, inventory control, and internal control*

# **CHAPTER ONE**

## **INTRODUCTION**

### **1.1 Back ground of the study**

Inventory Management is defined as a framework employed in firms in controlling its interest in inventory. It includes the recording and observing of stock level, estimating future request, and settling on when and how to arrange. On the other hand, Inventory management is a method that companies use to organize, store, and replace inventory, to keep an adequate supply of goods at the same time minimizing cost. Choi (2012) indicates that effective inventory management is essential in the operation of any business. Thus, keeping stock is used as an important strategy by companies to meet customers' needs without taking the risk of frequent shortages while maintaining high service level.

Companies use different inventory management and control system, from manual counting to barcode and Radio- frequency identification (RFID) depending upon the nature of their operations. Barcodes assign special numbers to each and every item you are trying to track, all with integrated system of date. Upon scanning your inventory's barcodes, they automatically get decoded and entered into a date base, which then allows you to track and maintain inventory quantities pricing and any other date you want to save. In addition to their increase in speed and accuracy, these systems give managers continuous information on inventories, reduce the need for periodic inventories and order size determinations (Stevenson, 2009).

As stated by Mohammad et.al (2016), every organization has their own inventory where each of the organization manages the inventory by various ways of managing system. However, the purpose of the inventory is the same, where the inventory must always ready to be used and the inventory cost must be low. Inventory management refers to all the activities involved in developing and managing the inventory levels either the inventory is raw materials, semi-finished material or finished goods, so the adequate supplies must be always available and the form must make sure the cost of over or under stocks are always low.

Inventory management & controlling can be interpreted as the avoidance of over investment or under investment in inventories, as an essential step in improving overall operational efficiency.

Determination at the right level of investment in inventories, consistent with production operation schedules & prompt services, is the core of inventory management & controlling systems (Sharma, 2006).

In general inventory management enables to defining policies to guide the inventory control programs, determining the most appropriate organization structure, determining economic order quantity, determination of stock out, determination of safety stock, determination of safety stock, determining lead time, determination of inventory stats, minimizing of handling & storing cost, effective running of stress (Altekar, 2005).

## **1.2 Back ground of the Organization**

AL-SAM PLC was established in 1999. Early in the year 1982 E.C that kick started the journey to the destination started by the merchandise valued at birr 17000 which was the birth of SAM International PLC, which was established in the year 1994 E.C & was engaged in the import & wholesale business. SAM International PLC was an eye -opener to the import business and offered exposure to the manufacturing and supplying companies beyond the national border. The name SAM international PLC later changed to AL-SAM PLC.

AL-SAM PLC which gave birth to all other affiliate companies such as ; Lina PLC in 1999 E.C & Repi Soap & Detergent S.C in 2006 E.C. Following the establishment of AL-SAM PLC, the company got the agencies for distributorship from big companies such as PT. Sinar Antijol (B-29 Brand product), Sara Lee (Kiwi Brand Owner), HACO (Bic Brand owner), & other multi-national companies including Energizer Incorp.(Eveready dry -cell batteries), weyth pharmaceuticals (S-26, Promil & Progress infant formula Brands), Asia pulp & Paper (Golden plus- Copy paper) & wilmar international (palm olein sania & Viking Brands), Arcelik A.S. (Beko Brand consumer electronics & home appliances) & many more. Moreover, the company also ventured into real estate development, which resulted in twin luxury apartment buildings in the key location around Millennium Hall near the Bole International Airport. The achievement of the company then followed by the establishment of the joint- investment company with Wilmar International PLC in 2014 to form a multi-billion-birr integrated industrial cluster at Dimma district in the Oromia National Regional State.

Over the two decades, AL-SAM Group Holdings has established business partnerships with some of the World's most dependable brands including SC Johnson & Son, Colgate Palmolive, Energizer incorporated, Haco Industrial (Bic pen), Orkide Industrial, Bako Electronics, & Hayat Hygienic Products, to mention but a few (Company Profile).

AL-SAM PLC currently has 60 employees who are assigned at the head office under Top Management, Finance Department, Suppliers & ware house Department, Sales & Marketing Department & Purchasing Department in Addis Ababa at Piassa. These major activities can be achieved through effective & efficient inventory management & controlling system. So under this study inventory management and controlling system in the case of AL-SAM PLC can support the company to improve the inventory items managing and controlling system in all aspects.

### **1.3 Statement of the problem**

According to (Adeyemi & Salami, 2012), the principal goal of inventory management involves having to balance the conflicting economics of not ready to hold too much stock. Thereby having to tie up capital so as to guard against the incurring of costs such as storage, spoilage, pilferage and obsolescence and, the desire to make items or goods available when and where required (quality and quantity wise) so as to avert the cost of not meeting such requirement. Inventory problems of too great or too small quantities on hand can cause business failures. If an item is not stocked when the customer thinks it should be the retailer loses a customer not only on that item but also on many other items in the future. The conclusion one might draw is that effective inventory management can make a significant contribution to a business profit as well as increase its return on total assets. It is thus the management of this economics of stockholding, that is appropriately being referred to as inventory management. The reason for greater attention to inventory management is that this figure, for many firms, is the largest item appearing on the asset side of the balance sheet. Essentially, inventory management, within the context of the foregoing features involves planning and control.

Inventory management is a complex aspect of Supply Chain Management that is frequently discussed and debated due to the fact that it has a high impact on customer satisfaction as well as

financial performance. Inventory management has become necessary in modern businesses in order to achieve excellent customer service, Cost reduction, Enhancing supply chain competitiveness and performance, Gaining market share, growth and expansion of businesses as well as Profitability (De Leeuw et al., 2011; Rao and Rao, 2009). Stevenson (2009) on the other hand indicated that, Poor inventory management hampers operations, diminishes customer satisfaction and increases operating costs. Inventory management is primarily about specifying the size and placement of stocked goods. In their study, Stock et al. (2001) observed that corporate profitability can be improved by increasing sales volume or cutting down inventory costs.

According to (Coyle et al., 2003) there is always the challenge of managing inventory to balance supply with demand in order to satisfy customers. Firms would ideally want to have enough inventories to satisfy the demands of its customers, and ensure no lost sales due to inventory stock outs. At the same time they want to avoid too much inventory on hand because of the cost of carrying inventory; the trade-off is always difficult to manage. Enough but not too much is the ultimate objective In actual practice many companies suffer from lower customer service, high costs and excess stocks than are necessary. Delays in lead time due to variability in demand of products have resulted in substantial stock outs and backorders thereby causing the inability of suppliers to satisfy customer needs.

Organizations need to manage efficiently inventories in order to prevent all types of wastage including over stocking, pilferage, expiry and stock outs. Factors contributing to those stock outs on one hand and over stocking on the other hand are not very clear, logistics skills level is poor and inventories are not well managed. Personnel dealing with supply chain activities need to be trained in procurement and inventory management as inventories are not well managed and most of the personnel did not know the method specifically to be used in controlling inventory (Kagashe, *et al.* 2012).

Annual physical inventory count report of AL-SAM PLC on September 2018 at Kality one and kality two stores revealed that some items are over stocked, leading to high inventory carrying cost and some critical items were out of stock, leading to urgent buying because of low stock

levels. The annual stock taking report also asserted that the problem might have been attributed to poor procurement planning procedure. The report also revealed the cases of inaccurate recording or poor entering of some data information, which was a good indication of poor inventory control. Materials are laid down traditionally and not properly placed to make simple count, issue and control easily. In addition to this the unidentified items, aged storage\shades and disorganize stock items were the main short coming observed. In addition to this as per the primary physical survey and observation undertaken at AL-SAM (Atena tera) store, there are materials which are found in excess amount and too much amount of obsolete, damaged, scrap and slow moving items were observed in the warehouse.

The existence of those gaps implies that there is a gap on inventory controlling system, purchasing practice and adequate handling and disposal system as well as lack of knowledge and skill in human resource. The identified problems may lead to critical problems in inventory management practice and finally affect logistics performance. However, the indicated information is not enough to show all the gaps and the whole inventory management practice and what effects it has on the company should be assessed in order to reach on the proper conclusion and forward possible recommendation based on tangible evidence. So, this study tried to fill the identified gaps in inventory management practice based on the annual report of ALSAM by focusing on three main inventory management practice determinants which are purchasing, inventory control and handling & disposal of inventory items which were be the focusing areas for the identified gaps.

Therefore, more understanding of the gap in the inventory management & controlling systems in a company is important for AL-SAM PLC. Thus, by taking the above discussions & similar facts into consideration the research is focus on the assessment of the inventory management & controlling systems in the case of AL-SAM PLC. It provide relevant information & to find out problems regarding with the company's inventory management & control system, to assess the major factors that influence the inventory handling system, to assess difficulty in dealing with obsolete stock, to find out the level of understanding of inventory management at the AL-SAM PLC ware house.



## **1.4 Research Questions**

This Study focused on seeking answer to the following research questions to address the stated problems.

1. What are the inventory management techniques that are practiced in AL-SAM PLC?
2. How does inventory record and documentation practice of company looks like?
3. How AL-SAM PLC does manages obsolete and slow moving inventories?
4. How internal control plays role in the inventory management practices of AL-SAM PLC?
5. What are the major challenges in the inventory management practice in AL-SAM PLC?

## **1.5 Objectives of the Study**

### **1.5.1 General objective**

The main objective of the study is to assess the inventory management and control system in the case of AL-SAM PLC

### **1.5.2 Specific objectives**

In order to achieve this general objective, the following specific objectives need to be met:

- To assess the current inventory management techniques used by AL-SAM PLC
- To assess the current inventory records and documentation practice of the company
- To study the practice in managing of obsolete and slow moving materials of the organization
- To examine the internal controls in the inventory management practices in AL-SAM PLC
- To examine the main challenges in the inventory management practice in AL-SAM PLC

## **1.6 Significance of the study**

Any research plays a significant role to contribute for the intended target. Hence, this study is vital to assess the inventory management & control system in the case of AL-SAM PLC. Therefore, the aim of this study is to provide relevant information and to find out problems

regarding with the company's inventory management and control system, to inform various inventory managers in understanding how inventory management and controlling if properly done can immeasurably reduce organizational costs and improves the overall organizational operational performance and is help to achieve strategic objectives. In additions it provide additional findings on the issue and also useful for further research in related to similar topics in the future.

### **1.7 Scope of the study**

The study is focus on the assessment of inventory management & controlling system of AL-SAM PLC. Since the subject inventory management & controls is broad in its nature and to cope with the available time and resource constraints, the research project was intended to look into the assessment of the practice inventory management and sees the challenges. The company has 4 stores and 8 shops around the country. However, due to remoteness of the area, employees and stores 4 shops which are located outside Addis Ababa are not the target population. The study is focus on the company's warehouse, purchase department, sales, marketing department, and finance department.

### **1.8 Limitation of the study**

The main limitations of this study were constraints of time and due to the COVID-19 outbreak detail in-person observations of the company, face-to-face interviews, fieldwork and other data collection was a bit challenging for much of the time. But the researcher tries to use different techniques to overcome this. The research is conduct only on the inventory management & controlling systems of AL-SAM PLC. Some of the restrictions that the researcher is challenge to find out the inventory management & controlling system of the company are the availability of scanty previous literatures, unwillingness of some informants to respond to the questioner as fast as possible and time constraints are the major challenges of this study.

### **1.9 Organization Of the research study**

This study is composed five chapters. The first chapter serves as introductory, background of the study in terms of its objectives, back ground of the organization, statement of the problem, basic research questions, objective of the study, significance of the study, and scope of the study &

limitation of the study. While chapter two focuses on the literature review covering the practical implementation of the inventory management & controlling systems. This chapter looks at the academic discourse drawing lessons from the raging debate. It is done with the aim of learning from other scholars, sharing their ideas & ultimately adopting new strategies in order to improve the work environment & enhance effective improve the work environment & enhance effective implementation. Chapter three deals with research design & methodology, with particular focus on the sources of data, data collection instruments is employ the procedure of data collection & methods of data analysis is employ. The fourth chapter is present the major findings of the research, on the basis of data obtained. Finally, chapter five is the summary, conclusions & recommendation of the study.

## **CHAPTER TWO**

### **REVIEW OF RELATED LITERATURE**

#### **2.1 Theoretical Review**

##### **2.1.1 Definition of Inventory**

The institute of Chartered Accountants of India defines inventory as “Tangible property held for sale in the ordinary course of business or in the process of production for sale or consumption in the production of goods or services for sale, including maintenance supplies and consumables and other machinery spares”. S. Anil kumar and N. Suresh (2009) in their book of operations management on page 176 defined inventories as: materials in stock. It is an idle recourse of an enterprise. Inventories represent those items which are either stocked for sale or they are in the process of manufacturing or they are in the form of materials, which are yet to be utilized. The interval between receiving the purchased parts and transforming them into final products varies from industries to industries depending upon the cycle time of manufacture. It is, therefore, necessary to hold inventories of various kinds to act as a buffer between supply and demand for efficient operation of the system. Thus, an effective control on inventory is a must for smooth and efficient running of the production cycle with least interruptions.

Inventory is one of the largest & most tangible investments of any manufacturing organization. The aim of inventory management is to hold inventory at lowest possible cost & objectively ensures uninterrupted supplies for- day – to day operations. When making inventory decisions, management has to compromise between the various cost resulting from sufficient inventories (Peterson & Silver, 1998; Zipkin, 2000). According to Miller (2010), inventory control is the activity which organizes the availability of items to the customers. It coordinates the acquiring, manufacturing & distribution functions to meet the marketing needs. Rosenblatt (1977) indicated that: “The cost of maintaining inventory is included in the final price paid by the customer; Good in inventory represent a cost to their owner; the manufacturer has the expense of materials & labor; the wholesaler also has funds tied up”.

##### **2.1.2 Concept of inventory management**

Inventory control involves the procurement, care & disposition of materials. Managers of every company are concerned with three kinds of inventory, namely raw materials; in-process or semi-processed goods & finished goods. Effective control of these kinds of inventory can improve production control, protect against obsolescence, deterioration &/or theft in stock. Inventory control helps in balancing the stock as to value, color, and style & price line in proportion to demand or sales trends. Effective inventory management plays a vital role in improving the operation of supply chains for manufactured goods (Simchi-Levi, Kaminsky, & Simchi- Levi, 2004). Inventory management is the integrated functioning of an organization dealing with supply of materials & associated activities in order to maximize coordination & optimum expenditure on materials. Tom, Akhilesh & Sijo (2013) explained inventory control as the most important function of inventory management & that it forms part of the nerve center in any inventory management organization.

The inventory management system encompasses a monitoring arrangement at a manufacturing site & control that interacts with the monitoring arrangement. The control also interacts with inventory price sources, shipping information sources, manufacturing schedules of vendor, & an inventory tracking device, such as, but not limited to, a global positioning system (GPS). The inventory management system also relies on appropriately developed inventory policy models to determine when the most appropriate time is to order inventory for the benefit of another inventory management system (Salvo, Mackenzie, Bennett, Relyea & Thomas, 2002).

It is a principal necessity for any organization to have a proper inventory control system. Miller (2010) explained inventory system as a set of policies that controls & a monitor inventory level & determines what level should be maintained, how many orders should be made & when stock should be replenished. Miller (2010) furthermore explained inventory control as the supervision of the storage, supply & accessibility of items to ensure an adequate supply without oversupply. Coleman (2000) & Jay & Barry (2006) defined inventory management as a science-based art of ensuring that just enough inventory stock is held by an organization to meet its demand. Systems in inventory management are developed with the aim of reducing costs associated with the entire process on inventory management & are however described as complex systems to develop (Jones & Riley, 1985). Emmett (2005) defined inventory management as an approach to manage

the flow of production in a supply chain, to achieve the required service level at an acceptable cost.

Lyson (2006) stated that inventory serves as an insurance policy against the unexpected breakthrough, delays, strikes & other disturbance that could disrupt ongoing activities. Abuhilal et al. (2006) indicated that inventory is one of the key cost contributors in any supply chain. The statement by Abuhilal et al. (2006) is supported by Ganeshan & Harrison (2004) who stated that inventory cost can be between 20%-40% of revenue. Heizer et al. (2004) indicated that inventory is one of the most expensive assets of many companies & can represent about 50% of total invested capital. Chase (2010) stated that the purpose of inventory is to maintain independence of operations, to satisfy demand, to allow flexibility in production scheduling, to provide a safeguard for variability in supplier lead-times & to take advantage of economic order sizes. Kennedy et al. (2002) & Chase (2010) stated that the basic purpose of inventory management is to answer the following four questions: Firstly, when should an order be placed? Secondly, how many units should be ordered when an order is placed? Thirdly, what is the objective of the inventory policy? Lastly, is the objective to reduce costs or to increase availability or service levels?

According to Hillier & Lieberman (2001), organizations should follow the following steps in order to have an effective inventory management system: Firstly, the need to develop a mathematical model which describes the behavior of inventory; Secondly, the need to design & adopt an optimal inventory policy with respect to the firm's mathematical model; Thirdly, the need to develop a computerized information processing system that is provide information on the current inventory levels; & Lastly, the need to use the current inventory levels information to apply the optimal inventory policy to replenish existing inventory levels.

Ghosh & Kumar (2003) indicated that the scope of inventory management also “ concerns the fine lines between replenishment lead times, carrying costs of inventory, asset management, inventory forecasting, inventory valuation, inventory visibility, future inventory price forecasting, physical inventory, available physical space for inventory, quality management, replenishment, returns & defective goods & demand forecasting”. Balancing the preceding competing requirements leads to optimal levels of inventory (Ghosh & Kumar, 2003). Therefore,

the basic goal of the manufacturers is to maintain a level of inventory that is provide optimum stock at lowest cost.

Narain & Subramanian (2008) indicated that a good inventory management system provides information to effectively manage the flow of materials, effectively utilize people & equipment, coordinate internal activity & communicate with customers. They further indicated that inventory management does not make decisions or manage operations, but provides information to managers to enable them to make more accurate & timely decisions to manage their operations. Ellram (1996) stated that inventory management is an important function that helps to insure the success of manufacturing & distribution companies. The effectiveness of inventory management systems is directly measurable by how successful a company is in providing high levels of customer service, low inventory investment, maximum throughput & low costs. Inventory management entails holding an appropriate amount of inventory. Too much inventory consumes physical space, creates a financial burden, & increases the possibility of damage, spoilage & loss. On the other hand, too little inventory often disrupts business operations, & increases the likelihood of poor customer service (Dimitrios, 2008).

Inventory management cycle involves the following areas: planning, ordering & scheduling of the materials used in the manufacturing process. Inventory management exercises management over three types of inventories that is raw materials, Work in progress & finished goods. Purchasing is primarily concerned with management over the raw materials inventory, which includes; raw materials or semi-processed materials, fabricated parts & MRO items (Maintenance, Repair & Operations) (Garry, 1997). However, Lau & Snell (2006) argued that inventory management is primarily about specifying the size & placement of stocked goods.

Ogbo (2011) postulated that the main objective of inventory management & control is to inform managers how much goods should be replenished, when they should be ordered, how frequently orders should be placed & what the appropriate safety stock is, for minimizing stock-outs. Therefore, the overall goal on inventory is to have what is needed, & to minimize the number of times one is out of stock. Morris (1995) indicated that inventory management in its broadest perspective is to keep the most economical amount of one kind of asset in order to facilitate an increase in the total value of all assets of the organization's human & material resources.

Lysons & Gillingham (2003) stated three main aims of inventory management as: to provide both internal & external customers with the required service levels in terms of quantity & order rate fill, to ascertain present & future requirements for all types of inventory to avoid both overstocking & bottlenecks in production, & to keep costs to minimum by variety reduction, economical lot sizes & analysis of costs incurred in obtaining & carrying inventories.

Graville & Emmett (2007) stated that a flawed or unrealistic business plan leads to failure in forecasting how well a firm may do in the future. This has an impact on inventory management because if a company forecasts more growth than they actually experience, it can lead to an overstock of inventory. The opposite is true if forecasters do not predict enough growth & are left with not enough inventories. Failure to identify shortages ahead of time leads to a lack of enough products in stock to meet customer demands which spoil customer relations. The staff in charge of inventory management should look over their inventory on a regular basis to make sure enough products are in stock (Granville & Emmett, 2007).

Meng (2006) stated that inventory costs are important for three major reasons. Firstly inventory costs represent a significant component of total logistics costs in many companies. Secondly, the inventory levels that a firm maintains at points in its logistics system is affect the level of service the firm can provide to its customers. Thirdly, cost trade-off decisions in logistics frequently depend upon & ultimately affect inventory caring costs.

According to Sharma (2006) inventory management can be described as the protection of over investment & under investment in inventories, by improving on the main necessary operational activities. Determination of the right level of investment in inventories, consistent with production operations schedules & prompt services, is the activities, of inventory management. Mohamed et al. (2016) Inventory management refers as the total activities in each operation stage may be in raw material, semi-finished materials or finished goods, so make sure the availability of stock & the over or under stocks always must be low. Brutus (2015) explains that inventory materials represent an important asset. It is the largest single item & it has accost in every organization. Material management is the important aspects of any organization to function handling & acquisition of stock, assigning line management, storage, & material



transport. Material management & control components role are very similar in order to make organization effective efficient.

### **2.1.3 The Role of Inventory Management**

The role of inventory management is to determine the level of inventory items to produce the specific items, the system of planning & controlling of inventory items are based on the product, customer needs & the operation activities is based on the available inventory. In addition, inventory is importance for balance sheet that used as an increase the asset group on the company balance sheet, because many firms play a role to reduce their investment in fixed asset, plants, warehouses, office buildings equipment & machinery by increasing their inventory (Mohamed, et.al 2016). Inventory management system is essential to approve the quality of control in stock handling & the area of consumer goods. A good inventory system is lead the company easily to know the time to be order. Inventory management system is also an essential means of tracing large shipment with in short time. /an automated inventory system enables to minimize the risk of error & helps by providing up to date information of the stock items in the warehouse (Ackah & Ghansh 2016).

### **2.1.4 Inventory control**

Inventory control is the management activities that attempt to maintain the uphold stocks at their estimated levels. It is practiced by planning necessary stock sizes at usual intervals, by taking two stocks then counting and valuing it at the same interval comparing the two sets of feedback margining of variances (Sharma, 2006). Inventory is a major asset that should be the sources of returns on capital investment. The marginal profit on sales got from return on inventory investment according, this would not occur without inventory. Accounting experts stated that to accepting corporate profit-and-loos, without measuring the true cost and a benefit of inventory is difficult. Because lack of measurement clarity it makes complex to evaluate the trade-offs between service levels, operational activeness, and inventory maximum or minimum level, while the cumulative of inventory levels have decreased, the inventory carry of much enterprise still it is greater than their basic requirement (Bowersox,2002).

The maintain accountability & responsibility of inventories asset is the inventory management. Inventory management, before decision they must be checked plan budget & also must know

how to order & when to be order. Therefore, without any problem the stock is available easily in store at an optimum (Costsmaros, 2003). Hence, inventory management must practice on the activities of planning system through the operation of the service points & distribution.

#### **2.1.4.1 Inventory records management**

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

Inventory accuracy defines how well the inventory records, specifically the quantities on hand, match the actual quantities in the storeroom. Accurate records are a prerequisite to effective inventory management. Susan & Michael (2000) accuracy if inventory records is necessary to provide satisfactory customer service, determine replenishment of individual items; ensure that material availability meets repair or project demand, analyze inventory levels & dispose of excess inventory.

#### **2.1.4.2 Inventory Decision**

Decision-making is central to supply chain management. Managers of every organisation are faced with decisions regarding levels of stock & inventory requirements on a daily basis. Inventory management decisions, like most other decisions in business, are ultimately evaluated according to their financial bearing. Hence, it is significant to understand the different costs relating to inventory management. According to Chase (2010), inventory costs can be split into the following categories: holding cost, set-up cost, ordering cost & shortage cost.

According to Do Rego & de Mesquite (2011), it is useful to sub-divide the inventory control problem according to the lifecycles of materials in to four categories. The first is the decision to stock an item or not, the second is placing an initial order, the third is inventory control during

the continuous operating period & the fourth is final orders & obsolescence. Do Rego & Mesquita (2011) further stated that the first question of whether to stock an item or not is an important initial consideration for managing inventory. It is seldom the case of not keeping any stock but it is essential to critically evaluate whether it is worth bearing the cost of stocking even one item versus ordering upon demand.

### **2.1.5 Warehouse Management**

Sustainable material management is management of raw materials & services from supplier to manufacturer or service renders to customer & return with improvement of social & environmental advantage also considered. It is improved technology by decreasing the manual practices. Sustainable material management has allowed businesses & supply chain to distribute wide area, & increase the future needs sustainable. These practices include organizing & managing warehouse also includes the settlement. Benefits of sustainable supply chain management include increased the good is to the business. Having a sustainable supply chain would also improve clarity, visibility & can responding quickly in any change. (Tan, Ahmed & Sundaram,2009).

### **2.1.6 Handling of Inventory**

According to Heraga (2009), even if, material handling system designs hasn't a definite followed rule. However, the college – industry council on Handing Education CIC- MHE) in collaboration with the Material Handing Institute (MHI), represents the sanitization /cleansing/ of many years experience & knowledge, they complied ten principles of material handling. **Planning Principle**, all material handling necessarily planed according to the required objectives. **Standardization Principle**, Material handing method that to be standardize, fixable equipment & software, keeping the modularity to the organization to achieve its setting goals. **Work Principle**, Material handing works it defines by the material movement without stacking the activity of the organization keeping the level of inventory. **Ergonomic Principle**, Balancing the human capabilities & limitations must be included in designing & also material handling tasks & equipment must ensure on operation. **Unit Load Principle**, the material flow & inventory objectives in each operation activity must be insured & must be cheeked the availability of materials by supply management. **Space Utilization Principle**, Effective & efficient use must be

equally available on every stage & place. **System Principle**, every material movement on operation & storage all activity integrated to form a coordinated, operational system which spans receiving, inspection, storage, production, assembly, packaging, unitizing, order selection, shipping & transportation & the handling of returns. **Automation principle**, Material handling should be in every place must be systemized or using computer system to improve the operational activity & efficiency, decrease operating costs & also minimize the using unsafe manual labour. **Environmental Principle**, at the time of designing & selecting the alternative equipment, material handling system must be in to consideration., And **Life Cycle Cost Principle**, on material handling life cycle the economic analysis should be considered. ( Herage, 2009).

Herage (2009) describe that material handling system is a continuous management of a function of resource movement from one location to another. It is more ordinary in manufacturing & also in-service systems. Material movement occurs everywhere & every time as required in Standard accounting practice is to value inventory at purchase or standard manufacturing cost rather than at selling price” (Bowersox, 2002, Page, 288).

#### **2.1.6.1 Obsolete inventory**

According to Gronds, Kott & Stzelczyk (2014) on processes of warehouse management to control the excess & obsolete inventory, it needs sum controlling management mechanism to indicate the inventory material condition & the level. To manage properly the excess & obsolete inventory management it needs some first indicator to separate non-moving stock, identify the level of slow moving stock in warehouse, which may be treated as excess or obsolete inventory, including excess & obsolete then made analysis allowing to show the reason of the occurrence of utilization of the inventory. The indicator can be showing the difference between the current & the previous inventory & the amount of resource coming from last deliveries until zero value obtained after that multiplying it by the number of days that passed since the delivery. FIFO method is the best option to get the actual slow-moving stock. This indicator is calculated as:

$$ZM = \sum d. I$$

Where:

d- Number of days of slow- moving resource by FIFO,

Value or amount of slow- moving resources in a warehouse

Obsolescence cost results from deterioration of product during storage. A Prime example of obsolescence is product that ages beyond recommended distribution date, such as pharmaceuticals and clothes. Obsolescence also includes financial loss when a product becomes obsolete in terms of fashion or model design. Obsolescence costs are typically estimated based on past experience concerning markdowns, and quantity destroyed. This expense is the percent of average inventory value declared obsolete each year (Bowersox, 2002). According to Grondys, Kott & Strzelczyk (2014), on processes of warehouse management to control the excess and obsolete inventory; it needs sum controlling management mechanism to indicate the inventory material condition and the level. To manage properly the excess and obsolete inventory items, it needs some first indicator to separate nonmoving stock, identify the level of slow moving stock in warehouse, which may be treated as excess or obsolete inventory, including excess and obsolete then made analysis allowing to show the reason of the occurrence of utilization of the inventory.

*Excesses vs. Obsolescence-* Excesses arise from obsolescence of equipment and supplies. When the amount of obsolete items increase in relation to changes in design, color, and other aspects of improvements of the products then they become excess.

*Residual stocks* - The excess stocks that result from the introduction of new items must be disposed of as promptly as possible to free storage space and reduce the costs of preservation and storage.

*The Cost of carrying excess stocks*

Kott & Strzelczyk (2014) further stated that the excess stocks that arise from the several factors already described must be eliminated from the system. Excess stocks take up warehouse space that may be required for needed items, add unnecessarily to the costs of manpower and materials required for care and preservation and lessen recoverable value as a result of both deterioration and obsolescence. Failure to dispose of excesses can result in the use of unprotected outside storage for needed items and the inside storage of excesses. Even though items may not

deteriorate physically, they deteriorate in usefulness through the passage of time as obsolescence takes its toll. The substantial costs associated with stocks that are excess to needs makes disposal action a necessity.

#### **2.1.6.2 Disposal of Obsolete Inventory Items**

Department of Army Field Manual (1958) stated that when the material is clearly become obsolete, excess or surplus to needs, it should be disposed of to conserve ware-house space and reduce operating costs. Several types of disposal actions are available. In many cases, the type of material controls the type of disposition. For example, scrap and salvage narcotics and distinctive articles of uniform must be disposed of differently from civilian type items. Military-type items such as guns, tanks, and flamethrowers must be demilitarized before passing into civilian control. Classified material must be destroyed or so converted as to be unrecognizable before disposal. As further explained by Department of Army Field Manual (1958), some of the alternative disposal actions are discussed in the paragraphs which follow.

#### **Disposal by Transfer to other Government Agencies**

Excesses in one technical service, one military department or one Government agency should not, in general, be disposed of if the material is required elsewhere in the Government service, unless the cost of repairs plus the cost of transportation to the place where needed exceeds the cost of procurement.

#### **Disposal by Donation**

Surplus property may be donated to service schools, educational and public health institutions, veterans' organizations, museums, state and local governments, and certain other organizations. The intent of the Congress in this regard was to donate government surplus property to state educational and public health institutions in preference to sale of the property at some fraction of its original cost. Such institutions have been rather active in acquiring property under the law, particularly with respect to the more desirable small quantities of property in good condition.

#### **Disposal by Sale**

Items for which there is wide civilian demand are disposed of rapidly with a high rate of return to the Government. The object of property disposal is not just to dispose of property no longer

needed but to dispose of this property for as high a return as possible. Grouping of items into salable lots is the first step in disposal by sale. Various questions need to be considered. Should all the accumulated items be sold as a single miscellaneous lot? Or should the items be grouped in to more than one lot? and, if so, upon what basis? If the lots are small, a large number of small bidders may be attracted and the return to the Government may be higher. But the costs of sorting the items and preparing invitations to bid, abstracts of bids and sales documents would also be higher and would tend to offset the higher prices obtained. Conversely, if the lots are too large and consist of widely different kinds of material, fewer bidders may be interested and prices obtained may be lower. Vehicles, typewriters, office machines, and other such items that are attractive to smaller buyers can generally be sold to the advantage of the Government under terms whereby the bidder must bid separately on each item. It is difficult to establish one set of rules to cover the many kinds of surplus property sold to local markets. The local disposal officer must carefully analyze the results of various sales to determine what kinds of lots bring the best return to the government in this geographical area.

### **Abandonment, Destruction and Demilitarization**

When the cost of removal of property to place where it may be sold is prohibitive and sale in place cannot be made, the most economical method of disposal may be abandonment. Of course, if the property is dangerous to public safety and health, destruction is the only recourse. Dangerous military-type items that may fall into the hands of the enemy or the unscrupulous must first be demilitarized or rendered useless as weapons of war. Components, assembly's accessories, and parts of such items can be removed, demilitarized and sold separately when the probable recovery by sale will exceed the cost of disassembly.

### **2.1.7 Inventory Management Techniques**

Farasyn et al. (2011) indicated that inventory policy is an operating framework or a standard operating procedure (SOP) in implementing an inventory model & a company should introduce policies to reduce lead time, regulate usage & thus minimize safety status. It is very important for the policy to highlight areas of need & concern with regards to the safety status. Inventory control policies are commonly used to assist in inventory management. They are used to answer two main questions: "when to place an order & how much to order. Different philosophies &

models can be used to manage inventory. The choice of inventory model is dependent on factors such as demand pattern, lead time, uncertainty & variability in the inventory management process & availability of information” (du Toit, 2014).

Inventory management practices can be defined as an activity that organizes the availability of goods to the customers from sales items to consumables and spare parts. According to Lysons(2000), the concept of inventory management practices basically focuses on the techniques used to ensure that stock of raw materials or other supplies, work-in-progress and finished goods are kept at levels which provide maximum service levels at minimum costs. Inventory management practices helps businesses to optimize their stock levels, a critical aspect for any organization trying to adapt ever-changing consumer’s demands. This practice enabled companies that adopted to succeed boost their operational efficiency, offering their customers exactly what they need, when they need it. Inventory management practices involve the use of many techniques of managing inventories in an organization. Some of these techniques are ABC analysis, EOQ method, JIT, establishing annual stocking policies, preparation of inventory budgets, optimized purchasing procedures.

#### **2.1.7.1. ABC Analysis**

Bloomberg, Lemay and Hanna (2002) noted that ABC analysis categorizes products based on importance. Importance may come from cash flows, lead time, stock outs, and stock out costs, sales volume, or profitability. Once the ranking factor is chosen, break points are chosen for classes A, B, C and so on. 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 items, the next 30 percent B items, and the remainder C items. Each category of items could be distributed differently. For example, an 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.) with lower total stocking levels than for the A items. B items would have an intermediate distribution strategy where few regional warehouses are used, Ballou (2004).

#### **2.1.7.2. Economic Order Quantity (EOQ)**



Plasecki (2001) defines economic order quantity as an accounting formula that determines the point at which the combination of order costs and inventory costs are the least. Lysons and Gillingham (2003) also states economic order quantity as the optimal ordering quantity for an item of stock that minimizes cost. Economic order quantity approaches have proven to be effective inventory management technique when the demand and lead time are relatively stable, as well as when significant variability and uncertainty exist. This theory is relevant to this study in that it suggests that the appropriate or optimum level of stock or inventory that an organization should keep or store must help to reduce the cost of doing business.

#### **2.1.7.3. Just -In -Time System (JIT)**

According to Lysons and Gillingham (2003) definition JIT system as an inventory control philosophy whose goal is to maintain first enough material in just the right place at just the right time to make just the right amount of product. It is a lean production system used mainly in repetitive manufacturing. The JIT system suggests the inventories should be available when an organization needs them, not any earlier, nor any later. Stock and Lambert (2001) also defined JIT system as a program which seeks to eliminate non-value-added activities from any operation with objectives of producing high-quality products, high productivity levels, lower levels of inventory, and developing long-term relationships with channel members. He further explained that in JIT System, anything over the minimum amount necessary for a task is considered wasteful. Thus, JIT attempts to minimize inventories through the elimination of safety stock. This theory is relevant to this study because it focuses on the identification and elimination of manufacturing system. This therefore helps to eliminate unnecessary inventory and reduce cost throughout the entire supply chain system.

#### **2.1.7.4. Establishing Annual Stocking Policies**

Management just decides the maximum and minimum level of stocks and supplies that need to be kept in the warehouse or across the network of warehouse locations. Management must also set optimized re-order levels, safety stock levels (below which supply must not be allowed to fall) and an average inventory level to ensure costs are contained.

#### **2.1.7.5. Establishment of Optimized Purchasing Procedures**

In order to ensure that inventory is under adequate control, management must adopt purchasing procedures that align with actual sales history and demand pattern data. All inventory items that have not had an inventory turnover or have not been sold within an accounting period, typically 12 months, should be classified as obsolete stock and should be liquidated from inventory to eliminate unnecessary carrying costs. Any item with a declining customer demand should be flagged in the system and its safety stock level thresholds and re-order point counts should be downwardly adjusted to mitigate risk of obsolescence and cost.

#### **2.1.7.6. Preparation of Inventory Budgets**

Many organizations have an annual inventory budgets and they are usually prepared well in advance before inventory is procured. Budgets should include the total cost of ownership to keep inventory on hand during that years account period. This includes materials cost, fixed operational costs, carrying costs, logistic costs, redistribution costs and additional miscellaneous costs that contribute to the total costs of ownership.

#### **2.1.7.7. Inventory Control Practice**

Anil Kumar and N. Suresh(2009) page 176 defined inventory control as a planned approach of determining what to order, when to order and how much to order and how much to stock so that costs associated with buying and storing are optimal without interrupting production and sales.

The scientific inventory control system strikes the balance between the loss due to non-availability of an item and cost of carrying the stock of an item. Scientific inventory control aims at maintaining optimum level of stock of goods required by the company at minimum cost to the company.

According to Arora (2000), the factors to be considered in inventory control include; procurement costs, inventory carrying costs, cost of spoilage and obsolescence, cost of running-out of stock and set-up cost. A good inventory control system minimize the possibility of delays in production that are used by lack of materials, permits a company to exercise economics in purchasing, essential for an efficient accounting system is deterrent to people who might steal materials from factory, expedite the production of financial statement, allows for possible increase in output, creates buffer between input and output, insures against scarcity of materials in the market and avoid inventory build-up , Carter ( 2002).

The purpose of the inventory control function is supporting the business activities are to optimize the three targets which is customer service, inventory costs and operating costs, Tony Wild (2002). Kumar & Suresh (2008) also argue that effective control on inventory is a must for smooth and efficient running of the production cycle with last interruption. They proceed with their argument that this is warranted by varying intervals between receiving the purchased parts and transforming them in to final products. They further argue that inventory control would ensure adequate supply of products to customers and avoid shortages and ensure timely action for replenishment. Inventory control systems may ensures smooth production and hence no stock-out.

Poor inventory control has the following symptoms: high rate of order cancellation, excessive machine downtime due to material storage, large scale inventories written down because of price decline, distress sales, widely varying rate of inventory losses, large writing down at the time of physical inventory taking, continuous growing inventory qualities, liabilities to meet delivery schedules and even production rate, Menon (2006)

### **2.1. 7.8. Stock Levels**

The stock level deals with quantitative models for materials planning and control. There are four pre-determined critical levels for each item of material in the store. These are maximum level, minimum level; and re-order level and re-order quantity.

(a) Maximum level: The maximum stock level is that level above which stock should not normally be allowed to rise. It is set by:

- i. The rate of consumption of material.
- ii. Lead-time or time necessary to obtain new deliveries.
- iii. Re-order level of the material.
- iv. Re-order quantity of the material.
- v. The capital available and the opportunity to acquire items at low price.
- vi. The cost of storage and the availability of storage space.

vii. Insurance costs.

(b) **Minimum Level:** This refers to the ordering point or flag point at which a new order should be placed to replenish used stock. The minimum stock level of an item is set so that stock is not be depleted during the lead-time required for the new order to be processed in manufacturing on with a vendor, as the case may be. When the minimum is reached, sufficient materials are generally ordered to bring the stock up to a maximum stock level. The minimum and maximum are usually stated in terms of number of units, as a minimum of 30 pieces and a maximum of 100 pieces.

(c) **Re-order Level:** This is the stock-level at which new order for materials should be placed. It lies between the minimum level and the maximum level. It is set after considering:

i. Carrying costs of the material, which include interest on capital, used cost of deterioration and risk, insurance cost and cost of storage.

ii. Ordering costs of preparing purchase order, cost of preparing purchase order, cost of receiving and inspecting materials and postage cost.

(d) **Re-order Quantity:** Re-order quantity is the quantity of material that is purchase each time. This is also termed as order size. The re-order quantity is also termed as economic order quantity if it can be acquired at the minimum cost. The re-order quantity can be calculated as under. Re-order quantity = maximum stock level-re-order level+ minimum consumption\* minimum re-order period.

### **2.1.8 Challenges Faced in managing inventory**

Pandey ( 2002 ) indicated that inventory management Can be affected by general economic factors, Company Factors , Uncertainty risks and ambitions .The level of economic conditions affects inventory management in that things like inflation , high taxes affect management decisions on spending since they affect the anticipated profits by increasing cost of production and also affecting the budgeted expenses that increases .

Inventory management challenges can interfere with a company's profits and customer service. These challenges can cost a business more money and can lead to an excess of inventory

overstock that is difficult to move. Most of these of these problems are usually due to poor inventory processes and Out-Of-date Systems (Gourdin, 2001).

Stock and Lamber (2001) mention a number of challenges in inventory management which include: unqualified employees in charge of inventory, using a measure of performance for their business that is too narrow, a flawed or unrealistic business plan for a business for the future and not identifying shortages ahead of time. If the company employs unqualified people in charge of inventory without adequate training, experience or who neglect the job this is lead to inventory problems that is result in poor Organizational performance. The above may also influence the use of a measure of performance for business that is too narrow. This is a situation where the performance measure is not wide enough and do not encompass all the aspects of the organization. Many areas get overlooked and can lead to either inventory shortages or inventory stockpiling.

Lacey (2005) postulated that excessive level of stock is undesirable because they increase the risks of inventory becoming obsolete, stock loss through damage and theft, increased storage cost like rent, insurance and unnecessary tie up of the firm's funds. In general, the stock flow process ought to be followed to avoid inventory becoming obsolete. He further stated 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.

## **2.2 Empirical Review**

Many researchers have analyzed different inventory management practices and performance and these studies have amassed an enormous knowledge related to inventory management and organizational performance. Maria and Jones (2003) argue that purchasing function has a direct link with inventory level control and cost management since implementation of proper inventory management practice involves providing high-quality products at relatively less cost. They further point out that it is essential to establish a daily ordering and frequent calculation of inventory turns. On the other hand, Ballon (2000) argues that inventory cost should be considered while taking inventory decisions. He found that inventory carrying costs typically

range from 20% to 40% of inventory value. Selection of right inventory management practice is a must for a company's inventory management performance.

Ackah & Ghansha (2016) by their study, on the title of Assessment of Inventory Management, the researchers assessed the Performance of the Production and service Sector to find out how the management of inventory within work would be effective and bring a lot of cost savings for the organization to increase organizational performance. In order to reduce the cost of holding and to ensure the continuity of supply at the same time shows how the management of inventory within operational works would be effective and bring a lot of cost savings to the organization.

Musau, Namusonge & Makokha (2017) who conducted a research on the title of "The Effect of Inventory Management Organizational performance" argue that inventory management has a significant effect on organizational performance in terms of lean practices and keeping constant availability of inventory items with the right quantity and quality. They further argue that inventory leanness is the best inventory control tool.

Agus & Noor (2006) examined the relationship between the inventory management & financial performance of the business & they found that inventory management practice has a significant relationship with profitability & return on sales. Lwiki et al. (2013) indicated that inventory management is a "crucial part of a firm because mismanagement of inventory threatens a firm's viability such as too much inventory consumes physical space, creates financial burden, & increases the possibility of damage, spoilage & loss". Eroglu & Hofer (2011) examined the relationship between inventory management & financial performance of a firm. Their results revealed that there is a significant positive relationship between the two variables. Sahari, Tinggi & kadri (2012) empirically examined the relationship between inventory management, firm performance & capital intensity on a sample of 82 construction firms in Malaysia & they their study revealed that there is a positive correlation between inventory management & financial performance, & that also these is a positive relationship between inventory management & capital intensity.

According to Reid & Sanders (2007) inventory management mostly serves two main purposes. First, all responsible inventory management takes responsibility for availability of stock material.

The availability of inventory is important for the smooth running of operation. The second goal is by performing the required activity; efficient service level can be achieved by minimizing the optimal costs.

Gill, Biger, and Mathur (2010) argue that excess and obsolete inventory is an operational liability, because it uses valuable storage space and increases inventory costs. Raw material ordering frequency is identified as an important factor contributing to inventory cost. Frequent ordering in small quantity is considered as an important strategy. Their purchase requirement quantity of material is normally less to enable them to get these benefits. Hence for SMEs, frequent purchasing is appreciated.

Mohamed et al. (2016) said that every company manages its inventory items by using different ways of their own managing system. However, the usage of inventory is similar, & also where the inventory is stored or is ready to be used & the cost must expect to below.

To summarize different researchers conducted their studies on inventory management from different perspective such as the effect of inventory management on firm's performance, the effect of inventory management on financial performance, the effect of inventory management on organizational performance and assessment of inventory management practice. This show that how inventory managing is the key part of the management functions to perform in effective and efficient manner for any organization. There are a lot of researches done on inventory management in different problem areas but most of them were done in business firms focusing on organizational performance and financial performance. There is no research concerning on logistics performance on nonprofit organization especially Ethiopian Defense force. As explained by Headquarters department of the army (1985), the management of inventories is central to Army logistics management. Army operations depend on supplies; the flow of these supplies depends upon the effectiveness of the management of inventories for many months prior to the issue of the supplies. The objective of inventory management is effective, efficient, and economical supply of the combat soldier. Most researchers suggested that inventory management has a significant effect on organizational performance and financial performance. However, there is no study that has been comprehensively done on the effect of inventory management on logistics performance in the case of Ethiopian defense force and hence the study intended to fill that gap.

## **CHAPTER THREE**

### **RESEARCH METHODOLOGY**

This chapter deals with Research methodology of the study, including Research design and approach, the type of data collected, sampling method used and techniques adopted for data analysis.

#### **3.1 Description of the Study Area**

The study is titled as “The assessment of Inventory management and control system”. The key organization to collect data for this study was AL-SAM PLC. The organization’s main department was located in Addis Ababa. The company has 4 stores and eight shops around Ethiopia. The stores (kality 1, kality 2, First indo, and Atena Tera) are located in Addis Ababa. The shops are located around the country i.e Merkato , Chelelek , Woliso , Butajira , Ambo , Wolkite , Worabe, and Bako.

#### **3.2 Research Approach and Design**

Research design is the blueprint for fulfilling research objectives and answering research questions. It ensures that the study would be relevant to the problem and that it uses economical procedures (John et al, 2007:20-84). A choice of research design reflects decisions about the priority being given to a range of dimensions of the research process (Bryman & Bell, 2007:40), and this, of course, is have considerable influence on lower-level methodological procedures such as sampling and statistical packages. Therefore, it is a blueprint that enables researchers to find answers to the questions being studied for any research project. Together with the clear research plan it provides, constraints and ethical issues that a study is, inevitably, encounter must be taken into account (Saunders et al., 2003). In this study descriptive research design is appropriate. The descriptive design is meant to explain and discuss the practice of inventory management and control system. And to meet the research objective properly, both qualitative and quantitative approaches were used. Qualitative approach included the use of interview to strength the quantitative data while quantitative approaches were involved the use of descriptive statistics generated with frequency tables, percentage, mean and standard deviation. In terms of



time frame, the study adopted cross-sectional research in which data from the subjects is collected in the year 2020.

### **3.4 Target Population**

Population is defined as a cluster of statistically equivalent individuals or a collection of individuals who are genetically exchangeable (Lawson, 2012). The target population to be used for this study included all warehouse employees, top and middle level managers, employees in finance directorate department, purchasing department and all internal control auditors of AL-SAM PLC. The research targets the staffs that have direct dealings with inventory management and controlling systems.

### **3.5 Sampling Technique and sample size**

The study uses purposive sample technique the research select employees in different departments by using purposive sampling techniques because they have direct involvement in inventory management. And the research use census Method because of the fact there is only 96 employees in the units and they are too few to be sampled from, and hence all are include in the sample , this compromises of :-

<b>Departments</b>	<b>Number of employee</b>
<b>Ware house employees</b>	<b>58</b>
<b>Top and middle mangers</b>	<b>9</b>
<b>Finance department</b>	<b>11</b>
<b>Purchasing Department</b>	<b>13</b>
<b>Internal control</b>	<b>5</b>
<b>Total</b>	<b>96</b>

Source: HRM Department

All items in any field of inquiry constitute a 'Universe' or 'Population.' A complete enumeration of all items in the 'population' is known as a census inquiry. It can be presumed that in such an inquiry, when all items are covered, no element of chance is left and highest accuracy is obtained Kothari (2005).Hence, the total number of target population for the study is 96 employees. Therefore, the researcher used census data since the population size is reasonable to conduct census.

### **3.6 Data Source**

Both primary and secondary source of data is use for the study. The primary data is collect from the selected staffs of AL-SAM PLC directly; using a set of interviews administered questionnaires and observation. The participants are choosing depending on their position, main responsibilities and experience in inventory management and controls and other related activities. The secondary data is collect from company profile, other documents, and reference books related with the subject matter studies and library publications.

### **3.7 Data Collection technique**

The form of questionnaires that is used in the study is a closed and, open questions that uses as major methods of data collection in the study of inventory management and controlling system is the case of AL-SAM PLC. The questionnaires are distributed to 96 respondents out of the total population of 60.

In closed ended from of questionnaires, the respondents is choose one of the given alternatives as possible answers. The study incorporates the questions in which all of them is measured on a 5-point Likert-Scale, with "1" stands for "Strongly Agree" and "5" stands for "Strongly Disagree". Therefore, mean is used as a measure of central tendency. Furthermore, the data were encoded, processed and analyzed using SPSS 24.

### **3.8 Methods of Data Analysis**

The data that is collect from closed ended questionnaires is analyzed quantitatively. A descriptive statistic is conducted, analyzed and Calculated with frequencies and percentages. This is conducted by using Descriptive analysis method percentages and the analyze data is interpret in tables.

### **3.9 Ethical Consideration**

In this research study, issues relating to the ethical conduct of research are informed. For example, consent, confidentiality, privacy and anonymity is sustain. According to Sauders et.al; (2009), ethics is the model or standards of behavior that lead moral choices about our behavior and our relationships with others. Participants and respondents is give full information on the purpose and objectives of the study in order for them to make informed decisions as to whether to participate or not.

Relegated data for the study is collect by issuing an official letter to AL-SAM PLC; the target respondents is fully informed about the purpose, methods & intended possible uses of the research. The confidentiality of information to be supplied & the anonymity of the respondent is respected.

## CHAPTER FOUR

### RESULT AND DISCUSSION

#### 4.1 INTRODUCTION

This chapter deals with data presentation, interpretation and analysis of the study. It has two main parts: the first part is demography of the respondents; the second part consists of data collected from the respondents through questionnaires. In order to address the research questions, 96 questionnaires were prepared and distributed to AL-SAM PLC employees, out of these questionnaires 96 were filled and returned, no questionnaires were discarded due to missing data.

#### 4.2 DEMOGRAPHIC CHARACTERISTICS OF THE RESPONDENTS

**Table 4.1: Demographic profile**

	<b>Demographic Character</b>	<b>Frequency</b>	<b>Percent</b>
<b>Gender</b>	Male	67	69.8
	Female	29	30.2
	<b>Total</b>	<b>96</b>	<b>100.0</b>
<b>Age Group</b>	Below 25 years	6	6.3
	26-35 years	44	45.8
	36-45 years	22	22.9
	46 years and above	24	25.0
	<b>Total</b>	<b>96</b>	<b>100.0</b>

(Source: own survey, 2020)

From the total respondents, the male respondents constituted the highest percentage (69.8%) while their female counterparts only constituted (30.2%) of the total respondents. This implies that the majority of the employees are male. As per table 4.1 above, 45.8% of the respondents were from the age group of 26-35 constituting the largest percentage. This group was followed by 46 and above by 25.0%. The age group of 36-45 years had 22.9% representation from the total number of respondents. The other age groups below 25 accounted for 6.3%. This shows that the majority of the respondents are younger.

**Table 4.2 Education and experience of respondents**

		<b>Frequency</b>	<b>Percent</b>
<b>Education status</b>	Below diploma	6	6.3
	Diploma	13	13.5
	BA/BSC	57	59.4
	Masters and above	20	20.8
	<b>Total</b>	<b>96</b>	<b>100.0</b>
<b>Experience</b>	Less than 5 years	17	17.7
	6-10	29	30.2
	11-15	23	24.0
	16 and above	27	28.1
	<b>Total</b>	<b>96</b>	<b>100.0</b>

(Source: own survey, 2020)

From the result we can see that considering their educational status the proportion of BA/BSC are higher than the rest. The result in the above table 4.1 from the data set of the survey is found that respondents who are below diploma educational level were 6 (13.5%), those who have a diploma are 13(13.5%), those respondents have BA/BSC had a proportion of 57(59.4%) and those who had a masters degree and above are 20(20.8%). This implies majority of the respondent are degree holders and followed by master's holders which emphasize they have a good knowledge and understanding about the inventory management activities. This also shows that most of the respondents had adequate knowledge regarding the inventory management practices practiced in the organization; it is arguable that this level of knowledge enabled them to respond to the research questions in a more sufficient way.

The above table 4.2 shows, 17(17.7%) respondents were who works for less than 5 year, 29(30.2%) participant were who works 6-10 years in the organization, 23(24.0%) are work for 11-15 years in the organization , and 27(28.1%) respondents were who works for 16 and above years. From the result we can observe that majority of the employees has worked from 6 to 10 years. The employees who work more than 16 years followed next. This indicates that, the work

experience of the respondents had adequate exposure to the work area and had a potential of responding reliable responses. It is believed that respondents with high service years assumed that they know the organization process of inventory management practices, policies and procedures, and internal control system of AL-SAM.

### **4.3 DESCRIPTIVE ANALYSIS**

#### **4.3.1 Method Used to Evaluate Inventory**

The study on the respondents (staff) response on the method used to evaluate inventory (How is the inventory priced to ensure efficiency?) revealed that all the staff said that First In First Out (FIFO) method is used to evaluate/price inventory in the organization which implies that the earlier the material received in store the first the material is issued from store, this situation or fact had been proved by the vocational instructors as their training materials request in accordance with what type of materials are needed first for the teaching module before the next module to start. By so doing this signifies that the first materials purchased are the first materials to be issued from store for use. This method of First in First out (FIFO) has been discussed by Arnold, *et al.* 2008 which is based on the principle that the oldest (first) item in stock is issued first and vice versa.

In the analyzing of the data, standard deviation was preferable to use. Small standard deviations show that data are close to the mean whereas a large standard deviation (compared to the mean) indicates that the data points are distant from the mean. The mean is a poor fit of the data. Standard deviation is a measure of how well the mean represents the data. The variables were measured using a five-point Likert scale where 1 stands for strongly disagree and 5 stands for strongly Agree. Therefore, the interpretation made using the mean of each variable, as a matter of fact the mean falls between the two ranges, hence if the mean approaches to 1 the interpretation would be the respondents disagree on the variable and if it approaches to 5 the reverse would be true.

#### **4.3.2 Inventory management practice**

<b>Table 4.3 Inventory management practice</b>
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	N	Mean	Std. Deviation
the company is effective in practicing inventory management techniques	96	3.9688	.70267
The company is effective In establishing optimized purchasing procedure	96	4.5000	4.10904
There is Effective inventory control system that optimizes customer service, inventory costs in the company	96	1.9375	1.10322
There is holding of too much inventory but unable to provide better customer service	96	4.1146	.73799
Inventory managers have established optimized stock level techniques that need to be kept in the warehouse	96	4.0208	.91742
The company has Computerized all inventory mgt system	96	2.6354	1.30682
Depending on the type of materials, the company follows proper inventory valuation practices	96	4.0729	.58480
Customer dissatisfaction is directly related with the poor inventory management techniques	96	4.5000	4.11160
The company adheres strictly to its inventory management policies and procedures to protect materials against theft, damage and loss	96	1.9063	1.16147
There is insurance coverage to all items of the utility	96	4.1458	.68023
There is an Up to date inventory revaluation methods for fixed assets that shows correct balance sheet and income statement report	96	3.8854	1.12268
There is a Proper quality control check whether received are according to the	96	2.1771	1.18761

specification ordered, required quantity and quality standards			
Valid N (listwise)	96		

**Source: Author's Computation based on the field survey 2020**

According to table 4.3 above the respondents agree on the company techniques on the effective inventory management practice by a mean 3.9 with 0.70 standard deviation value. This shows that overall the company techniques used to manage inventory is effective. The company is effective in establishing optimized purchasing procedures has a mean 4.5 and a standard deviation of 4.1. This implies the company is very effective in optimizing and conducts effective purchasing procedure. The result also revealed there is lack of effective inventory control system that optimizes customer service, inventory costs in the company (mean=1.9 and SD=1.10). The respondents strongly disagree on the practice of effective control system to optimize customer service and control inventory costs. AL-SAM holds of too much inventory but unable to provide better customer service (mean=4.1 and SD=0.73), this implies there is failure in communication across different departments and the stores. The respondents agree on the inventory managers establishing optimized stock level techniques that need to be kept in the warehouse by a mean 4.0 and standard deviation of 0.91. This indicates the inventory managers use effective stock level optimization techniques. The respondents disagree on the company computerizing all inventory management system by (mean=2.6 and SD=1.30). This result shows AL-SAM has lacks using latest software's for recoding and managing their inventory. Similar research finding of Lilian Tundura, Daniel Wanyoike (2016), found that the study investigated the influence of Computerized Inventory Management System on Inventory Records Accuracy. From analysis, finding revealed that Computerized Inventory Management System has significant positive influence on Inventory Records Accuracy. From these findings, the study concluded that Computerized Inventory Management System is significant determinant of Inventory Records Accuracy.

Depending on the type of materials the company follows proper inventory valuation practices (mean=4.0 and SD=0.58) the employees agree on the proper inventory valuation practice of the company. The employee's strongly agree on the reason that customer dissatisfaction is directly related with the poor inventory management techniques (mean = 4.5 and SD=4.11). This result



indicates the company customer complaints are more related with the inventory management factors. The respondents disagree on the point that the company adheres strictly to its inventory management policies and procedures to protect materials against theft, damage and loss (mean=1.9 and SD=1.16), this entails that there is a problem in divergence or fail to go in line with the company inventory procedures and policies over the protection of store materials. AL-SAM has insurance coverage to all items of the utility and the respondents agree on this by a mean 4.1 and standard deviation of 0.68. There is an Up to date inventory revaluation methods for fixed assets that shows correct balance sheet and income statement report has a mean score of 3.8 with a 1.12 standard deviation value. The result in the above table 4.3 also shows there is problem on a Proper quality control check whether received are according to the specification ordered, required quantity and quality standards in the company the respondents disagree by a mean 2.1 and 1.18 standard deviation. This implies in the company there is a problem on inventory quality checking while they receive materials.

Similar studies indicates like Wanjiku G. (2015) noted that delivery of the right product to the right customer at the right time to the right place with the right quantity and quality is one of the major performance indicators of logistics. Logistics must ensure that a recipient is supplied from a point of origin in accordance with his requirements with the correct product (in quantity and variety), in the right condition, at the right time and in the right place at minimum cost. Therefore, the absence of real time inventory information on customer demands can result to inaccurate forecast hence translate to late, insufficient and inconsistent deliveries of goods and eventually causes customer dissatisfaction.

#### 4.3.3 Obsolete, damage, scrapped and slow moving items

<b>Table 4.3 Obsolete, damage, scrapped and slow moving items</b>			
	N	Mean	Std. Deviation
There are many breakage's/ damaged, obsolete, scrap, unidentified and slow moving items mixed with other inventory items in central store	96	1.8229	.84598
There is proper recording, handling and controlling system for returned materials from different projects	96	1.7083	.72427

Disposal of obsolete and scrap items at store are effectively done with authorization and records	96	4.0104	.76081
There is clear procedure for adequate provisions of obsolete and inactive inventories	96	4.1458	.85814
All disposed items are updated in the inventory records/register/database for the purpose of proper management and control	96	4.0312	.68753
Valid N (listwise)	96		

**Source: Author's Computation based on the field survey 2020**

According to Drury (2004) obsolescence cost is one of the main inventory carrying costs that highly affect an organizations financial performance. Gill, Biger, and Mathur (2010) argue that excess and obsolete inventory is an operational liability, because it uses valuable storage space and increases inventory costs.

The result in the above table 4.3 describes that the respondents disagree on the point there are many breakages or damaged, obsolete, scrap, unidentified and slow moving items mixed with other inventory items in central store by (mean= 1.8 and SD= 0.84). This explain that at AL-SAM there is an efficient inventory management for separating the obsolete, damage, scraped , and slow moving items from the good ones. An inventory stock record is accurate when the information on the stock record is in agreement with the actual physical situation, Schrady (2006).The respondents also disagree with a mean of 1.7 and standard deviation of 0.72 that there is lack of proper recording, handling and controlling system for returned materials from different projects and sales returns.

The study finding agrees with Susan & Michael(2000) finding that accuracy of inventory records is necessary to provide satisfactory customer service, determining replenishment of individual items; ensures that material availability meets repair or project demanded, analyze inventory levels and dispose of excess inventory. Susan & Michael (2000) also stated that stock records provide the management with the information which is used to ensure accountability through stocking taking and stock audit exercise.

The respondents agree by a mean score of 4.1 and with standard deviation of 0.85 on the presence of clear procedure for adequate provisions of obsolete and inactive inventories and accordingly AL-SAM inventory management monitors and approve the write-offs for these inventories. The result further indicates the company's all disposed items are updated in the inventory records/register/database for the purpose of proper management and control, which is agreed by the respondents by a mean 4.0 and standard deviation of 0.68. This tells that there is a good practice in recording of disposed items or materials.

The above finding supported by Goldsby and Martichenko (2005) that as obsolescence reflects real possibility that inventory value may decline in the course of being kept. Thus a decline in inventory value increases carrying cost and finally affects the performance and service delivery of the organization.

#### 4.3.4 Inventory records and documentation practice

<b>Table 4.4 Inventory records and documentation practice</b>			
	N	Mean	Std. Deviation
Central store proper documentation and up to date records of stock are effectively practiced from the stage of receipt, storage and issues of materials	96	1.7604	1.09299
There are Discrepancies between the stock record and the result of physical verification	96	4.3021	.68241
The current inventory recording system of the company is satisfactory	96	3.1146	1.32084
Bin card, stock controlling card and inventory audit report documents reflect correct inventory level and materials	96	2.2083	1.6475
Receiving, issuing, accounting and storing responsibilities are properly segregated in the company central warehouse	96	1.9583	1.11371
There are Inventory items which do not counted	96	2.0521	1.40203

annually at the company central store			
The company inventory management periodically checks inventory reports/ records and make immediate decision based on the reports	96	4.1562	.75850
Valid N (listwise)	96		

**Source: Author's Computation based on the field survey 2020**

The above table tries to discuss and answer the question of how the AL-SAM PLC were recording and documenting the inventory.

Central store proper documentation and up to date records of stock are effectively practiced from the stage of receipt, storage and issues of materials (Mean 1.7604 and standard deviation 1.09299) . this result implies responders were disagree on the above statement since in the company (AL-SAM PLC) they were not effectively practicing up to date and central store of proper documentation of stocks.

There are Discrepancies between the stock record and the results of physical verification (mean 4.3021 and standard deviation .68241) were agreed that there are inconsistencies between the record and overall physical appearance of the stock. In the organization as the respondents agreed that to provide high quality products and services that exceed the expectations the customer it needs consistence in both aspects.

The current inventory recording system of the company is satisfactory (Mean 3.1146 and standard deviation 1.32084) the result shows the mean values were lay on neutral. This result clearly indicated that there were doubts on the inventory recording system effectiveness in the perspective of the employees.

Bin card, stock controlling card and inventory audit report documents reflect correct inventory level and materials (Mean 2.2083 and Standard deviations 1.6475) it shows the research participants (96) were disagreed on the above statement. The systems were not helped to show the balance between what were required to serve the customer and efficient financial practice.

Receiving, issuing, accounting and storing responsibilities are properly segregated in the company central warehouse (Mean 1.9583 and standard deviation 1.11371) this reflects the respondents were disagreed on the statement. This result shows there were critical problems in managing the overall inventory controlling activities separately.

There are Inventory items which do not counted annually at the company central store (Mean 2.0521 and standard deviation 1.40203) they were disagreed since inventory items were counted in different time interval.

The company inventory management periodically checks inventory reports/ records and make immediate decision based on the reports ( Mean4.1562 and standard deviations .75850) this implies AL-SAM PLC has been checking the overall stocks and making timely decision when ever needed.

Overall inventory records and documentation were not implemented properly to meet the immediate needs of customer and to manage the fiancé of the organizations. The software was valuable resource that was being overlooked or underutilized.

Similar finding Zimbabwe, (Lisa *et al.*, 2003) on their study revealed that inventory management, storage and distribution of goods to users is efficiently done for distributing in an efficient manner because qualified people are employed with right qualifications and experience in materials related functions and the entire system of inventory management is computerized to ensure good performance.

#### 4.3.5 Internal control over inventory

<b>Table 4.5 Internal control over inventory</b>			
	N	Mean	Std. Deviation
Order is placed only when inventory reaches a predetermined level	96	3.6354	.79630
A fixed order is placed anytime the inventory reaches that predetermined level	96	3.8542	.76749

There is Perpetual inventory system	96	1.7708	.67245
Inventory is monitored continuously	96	2.2917	1.4794
Software is used to monitor inventory levels	96	3.9479	.71627
Inventory is automatically updated after an invoice is raised or a transaction is made	96	2.0938	.87152
frequent senior management involvement in inventory practices	96	4.1146	.55951
Checks inventory at fixed time interval	96	3.7292	.64038
Orders are placed at specific time interval	96	2.3854	.78633
Replacement quantities change from one order to another	96	4.0313	.78744
Inventory reviews are necessary for effective inventory management	96	4.0417	.78024
The order size is not constant but enough to reach the fixed target inventory	96	1.6354	.65083
Some items are only ordered based on a request or at the time of the demand	96	4.4271	.69198
Company reduce inventory by providing a situation that makes its processes much simpler	96	3.9271	.71443
Higher inventory level or larger safety stock is required in periodic review system	96	4.0937	.56341
Policies and procedures clearly stated and systematically	96	2.0313	.94538
Valid N (listwise)	96		

**Source: Author's Computation based on the field survey 2020**

These results were clearly shows and answer the question of how internal control system enables to manage the inventory of AL-SAM PLC. Order is placed only when inventory reaches predetermined level (mean 3.6354 and standard deviation .79630) respondents were agreed on

the statement. This result implies before orders managed stocks should pass through predetermined level.

A fixed order is placed anytime the inventory reaches that predetermined level (Mean 3.8542 and standard deviation .76749) were agreed a fixed order implemented to maintain required quantity of finished goods for smooth sales operation and efficient customer service. In this system, whenever the stock on hand reaches the reorder point, a fixed quantity of materials is ordered.

There is perpetual inventory system at the company (mean 1.7708 and standard deviation of .67245) the mean value tells the respondents were disagreed. This result implies the internal control over inventory has been practiced not continuously (it were not long lasting). In this system, complete data records are kept on each item of merchandise and additions or subtractions are made with each transaction.

Inventory is monitored continuously (mean 2.2917 and standard deviation 1.4794) this mean value lays on disagreed level. This result shows in the organizations (AL-SAM PLC) inventory were not managed or monitored in continues manner. Software is used to monitor inventory levels (Mean3.9479 and standard deviation .71627) it was agreed by the respondents since the inventory management software were helpful in overall follow upping the stocks.

Inventory is automatically updated after an invoice is raised or a transaction is made (mean 2.0938 and standard deviation .87152) they were disagreed since the mean value lays on disagreed. This shows goods were not invoiced to the customer for the goods they bought. Each step involves a document, such as a sales order or A/R invoice. Relevant information from one document to the next in the document flow was helpful in internal control.

Frequent senior management involvement in inventory practices (Mean 4.1146 and standard deviation of .55951) this shows research participants were agreed that there is a timely involvement of senior higher level staffs to oversee the operational activities and make quick decisions.

Checks inventory at fixed time interval (Mean 3.7292 and standard deviations .64038) the result were indicated that inventory or stocks were checked in a fixed and continuous manner to verify the status of the stocks. Orders are placed at specific time interval (Mean 2.3854 and standard deviations .78633) which indicated there were problems in properly managing the orders that has been placed at fixed time interval. Replacement quantities change from one order to another (Mean 4.0313 and standard deviations .78744) which shows whenever replacement quantities needed the inventory system consider this scenario in AL-SAM PLC. Inventory reviews are necessary for effective inventory management (Mean 4.0417 and standard deviation .78024) this result shows in the organizations reviewing the overall inventory or stocks were an important steps in managing the stocks.

The order size is not constant but enough to reach the fixed target inventory (Mean 1.6354 and standard deviation .65083) the result shows the system demands the establishment of rather inflexible order quantities in the interest of administrative efficiency.

Some items are only ordered based on a request or at the time of the demand (Mean 4.4271 and standard deviations .69198) it implies usually goods were distributed to immediate customer needs based on ordered request. Company reduce inventory by providing a situation that makes its processes much simpler (mean 3.9271 and standard deviation .71443) this result shows when the inventory were not appropriate and difficult to manage the organization were reduce to make the inventory management easy.

Higher inventory level or larger safety stock is required in periodic review system (Mean 4.0937 and standard deviation .56341) this implies periodic review system investigate when manufacturing service levels fall below a predetermined service level, safety stock must be increased in order to adjust to the competitive environment. Policies and procedures clearly stated and systematically (mean 2.0313 and standard deviation .94538) they were disagreed on the statement listed under internal control over inventory. This result implies policies and working procedures were not stated and employee has limited shallow understanding of the measurement and impact of various service level policies. Overall the internal controls over inventory were implementing in a good ways and there has to be an area which needs correction



like Ensuring compliance with company policies and accurate and reliable operating data and accounting reports.

Similar findings Adzimah, (2016) found that Most of the practices of Internal Controls Practices of Inventory Management at Weir Minerals were relatively good. Management takes the appropriate steps to safeguard goods against risk of loss by theft (e.g. Goods kept in locked buildings, access to which is granted only to authorized personnel), ‘Goods released from stores only on the basis of requisitions which are approved by a responsible official or on the basis of invoices raised’, and ‘Management consistently reviews the reconciliation of physical inventory counts and the inventory records’ this shows that they are of high importance to the organization.

#### 4.3.6 Challenges in inventory management practice

<b>Table 4.6 challenges in inventory management practice</b>			
	N	Mean	Std. Deviation
Problems in availability of the required materials with the right quantity, Quality and at the right time	96	4.4792	.79444
Use of outdated storage facilities, aged storage shades	96	2.0417	1.18692
long bureaucratic procurement process at the company	96	4.7708	.28538
inventories which are overstocked or under stocked at central store	96	1.9271	1.03867
lack of pre/post employment training	96	4.5000	.72548
poor warehouse management and weak inventory control	96	2.6979	1.27420
Lack of integrated and automated system	96	1.7083	.66359
Poor coordination among departments of the company	96	2.4167	.95880
No proper and up to date fixed asset revaluation method	96	2.1771	1.10496

Excessive amount of used, scrap, obsolete and slow moving materials at central store	96	4.1667	.67538
large number of waiting customers for new connection	96	4.1771	.54280
Valid N (listwise)	96		

**Source: Author's Computation based on the field survey 2020**

Respondents were asked to rate the challenges of inventory management practices in the case of AL-SAM PLC.

Problems in availability of the required materials with the right quantity, Quality and at the right time (mean 4.4792 and standard deviation .79444). This result shows in the study organization there were clear problems in accessibility of goods in terms of quality and quantity whenever it needed.

Use of outdated storage facilities, aged storage shades (Mean 2.0417 and standard deviation 1.18692) this result indicated that the AL-SAM PLC were not using outdated storage facilities and shades. The warehouse has been using modern facilities to manage the stocks.

There is long bureaucratic procurement process at the company (Mean 4.7708 and standard deviations .28538) this shows there were a routine and boring procurement processes were undertaken in the study organizations.

Inventories which are overstocked or under stocked at central store (mean 1.9271 and standard deviation 1.03867) this result implies respondents were not agreed as the ware house overstocked or under stocked :This means the maintained inventory management system is that it allows management to be able to know how much inventory it has at any given time.

Lacks of pre/post employment training (Mean 4.5000 and standard deviation .72548) it mean that there were clear problems regarding human capital development. Employee should be given intensive training for safeguarding an asset must maintain the accounting records for that asset. Poor warehouse management and weak inventory control (Mean 2.6979 and standard deviation 1.27420) the mean value lays on neutral. This implies respondents were in doubt whether the organization has been managing the inventory in a proper way.

Lack of integrated and automated system (Mean 1.7083 and Standard deviation .66359) this shows the companies were not agreed. This implies the organizations systematically determine and regulate which items to order, when to order, what should be kept in stock and what quantities of them are stocked.

Poor coordination among departments of the company (Mean 2.4167 and standard deviations .95880) this was not a challenge in the organizations since the overall activities regarding inventory control was running in a good ways. No proper and up to date fixed asset revaluation method ( Mean 2.1771 and standard deviation 1.10496) this clearly indicated the organizations (AL-SAM PLC ) Has been using the latest asset revaluation methods. Excessive amount of used, scrap, obsolete, and slow moving materials at central store (Mean 4.1667 and standard deviations .67538) this were lays on agreed on the statement. This result implies the organizations were not timely discarding used and unnecessary materials that has occupied the warehouse.

Large number of waiting customers for new connection (Mean 4.1771 and standard deviations .54280) this implies there were a critical problems in managing customers and every process were time taking for their clients.

Overall the company has being doing well in many aspects but still there were a problem which needs immediate actions to make the inventory control system more effective. The area which needs urgent response were regarding procurement processes, human capital development, discarding used and unnecessary materials and in managing customers.

Awatey (2014) found that Excessive inventory in stock and unable to move it quickly enough was identified as a problem at some of the branches; Cash-flow comes from moving inventory. Misplacement of stock at the warehouse and occasional cases of employee's pilferage problems identified are usually due to poor inventory processes and out-of-date systems.

## CHAPTER FIVE

### SUMMARY, CONCLUSION AND RECOMMENDATION

#### 5.1 Introduction

This chapter gives a summary of the major findings, conclusion of the study and the recommendations for stakeholders to ensure effective and efficient management of inventory in AL-SAM. These have been discussed in the next sub-sections.

#### 5.2 Summary of major findings

The following summaries of major findings of the study are presented based on the analysis and interpretation of collected data

- Male respondents constituted the highest percentage (69.8%) while their female counterparts only constituted (30.2%) of the total respondents. This implies that the majority of the employee's are male
- Those respondents have BA/BSC had a proportion of 57(59.4%) and those who had a masters degree and above are 20(20.8%). This implies majority of the respondent are degree holders and followed by master's holders
- From the result we can observe that majority of the employees has worked from 6 to 10 years. The employees who work more than 16 years followed next. This indicates that, the work experience of the respondents had adequate exposure to the work area and had a potential of responding reliable responses
- The company is effective in establishing optimized purchasing procedures has a mean 4.5. This implies the company is very effective in optimizing and conducts effective purchasing procedure.
- The result also revealed there is lack of effective inventory control system that optimizes customer service, inventory costs in the company, Respondents disagree on the point there are many breakages or damaged, obsolete, scrap, unidentified and slow moving items mixed with other inventory items in central store.

- There are Discrepancies between the stock record and the results of physical verification (mean 4.3021 and standard deviation .68241) were agreed that there are inconsistencies between the record and overall physical appearance of the stock.

Overall the internal controls over inventory were implementing in a good ways and there has to be an area which needs correction like Ensuring compliance with company policies and accurate and reliable operating data and accounting reports.

The respondents stated that the main problem is that departments do not provide their needs on time and do not even know their actual requirement. Inventory management activities are not properly integrated with procurement activities. As per the respondents, it is common to see the practice that highly demanded items were purchased in smaller portion whereas unnecessary materials were purchased in bulk amount. Additionally, due to poor communication channel, materials that are found in stock were purchased repeatedly. There is lack of integrated and networked inventory management system and as the result of this it is difficult the movement of materials in each warehouse.

### **5.3. Conclusion**

Effective and efficient inventory management practices will always give a competitive advantage to business, regardless of its nature. The researchers established that AL-SAM undertake a lot of inventory management procedures to keep their stock always available to meet customers' demands. They engage in weekly cycle counts, stock taking and also implement the First In, First-Out (FIFO) procedure of inventory management. The researcher also noted that AL-SAM stock parts based on customer needs which basically are determined by considering previous year's consumption of a particular product.

Overall inventory records and documentation were not implemented properly to meet the immediate needs of customer and to manage the fiancé of the organizations. The software was valuable resource that was being overlooked or underutilized.

This result implies policies and working procedures were not stated and employee has limited shallow understanding of the measurement and impact of various service level policies. Overall the internal controls over inventory were implementing in a good ways and there has to be an area which needs correction like Ensuring compliance with company policies and accurate and reliable operating data and accounting reports.

The company has being doing well in many aspects but still there were a problem which needs immediate actions to make the inventory control system more effective. The area which needs urgent response were regarding procurement processes, human capital development, discarding used and unnecessary materials and in managing customers.

The study concludes that that inventory management is a process that is continuous in the organization and therefore there is always need for managing inventory throughout using a certain technique good inventory management can lead to good performance in an organization.

## **5.4 Recommendation**

From the finding originating from this study, the followings are some of the recommendations that AL-SAM has to adhere in order to maximize the benefits of inventory management practices.

- ❖ Up-to-date Inventory Management Policies and Procedure: To safeguard a good inventory management practices, procedures and policies has to be designed and implemented in an organization. AL-SAM should have formally structured inventory management policy and procedures which can create accountability and responsibility up on staffs assigned in the inventory position. These policies and procedures potentially can make inventory staffs effective to implement inventory technique and to solve inventory challenges existed in the utility. Furthermore, these policies and procedures should be effectively communicated across all AL-SAM departments and staffs.
- ❖ The organization should adopt a serious policy to solve the existing problems on handling and disposal of obsolete inventory items. Inventory items which are out of use due to

design change and being outdated need to be disposed in accordance to their importance to other organizations and individuals.

- ❖ It is recommended that procedures be put in place for tasks performed on a regular basis in the warehouse. The responsibility lies with materials management and should not be neglected.
- ❖ The company should adopt on job and of job training programs in order to upgrade the existing knowledge and skill of employees in relation to inventory management practice. Training programs not only develops employees but also help an organization to make best use of their human resources in favor of gaining competitive advantage. Therefore, it seems mandatory for any organization to plan for training programs for its employees to enhance their abilities and competencies that are needed at the workplace (Jie and Roger, 2005).
- ❖ The development and upholding of an effective information system is of the utmost importance. Inventory managers must, therefore, be aware of the different types of products that are required by the customers. In a product distribution company like AL-SAM, the inventory and purchasing information system must accurately report on its activities in terms of history and current data.
- ❖ It is recommended that AL-SAM continues with the cyclical counting of inventory to avoid the need for shutting down operations while stock is counted. This means that a particular section of the warehouse is counted at particular times, rather than counting all inventory at once. While this method may be less accurate than counting the whole, it is much more cost effective. Counting is also important because it is the only way you will know if there is a problem with theft occurring at some point in the supply chain.
- ❖ It is finally recommended that warehouse employees should be educated on the costs of improper inventory management to understand that the lower the profit margin, the more sales must be generated to make up for the lost goods.

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## APPENDIX



St. Mary's University ቅዱስ ማርያም ዩኒቨርሲቲ  
committed to excellence

**ST. MARY'S UNIVERSITY  
SCHOOL OF GRADUATE STUDIES  
FACULTY OF BUSINESS**

**Department of MBA in Accounting and Finance**

Dear participants,

I am conducting a study on “**THE ASSESSMENT OF INVENTORY MANAGEMENT AND CONTROL SYSTEM: THE CASE OF AL-SAM PLC**”. This research is conducted in partial

fulfillment of the masters of Degree in Accounting and Finance at St, Mary's university school of graduate. This questionnaire is therefore designed to request your independent views. Because you are the one who can give me a correct picture of the impact of inventory management practices of AL-SAM, I kindly request your full cooperation to fill this questionnaire frankly and honestly. All information provided shall be treated with utmost confidentiality and used strictly for academic purpose. Please be free to answer questions without indicating your name.

**Thank you in advance for your participation.**

**Email:** [Zafu129@gmail.com](mailto:Zafu129@gmail.com)

**Phone:** 0911- 122168(Selam G/medhin).

**Part One: General Information - Please put '√' in the box**

1. Gender

Male

female

2. Age Group:

≤ 25

26 – 35

36 – 40

41 and above

3. Educational Status:

Below Diploma

Diploma

BA/BSC

Masters & Above

4. Experience:

≤ 5

6 – 10

11 – 15

16 and Above

5. working position

Daily worker

supervisor

junior management

Middle management

senior management

6. What method does the organization use to evaluate inventory?

- A. First in first out (FIFO)
- B. Last in first out (LIFO)
- C. Average cost (A C)
- D. Standard cost (S C)
- E. Others please specify

**PART TWO: Questionnaires regarding inventory management practice**

Please read each statements in the first column carefully and show the extent of your agreement on the statements by putting (√) the in the next column using the following rating scale (Likert Scale). The rate are - 1 = Strongly Disagree (SD), 2 = Disagree (D); 3 = Neutral (N), 4 = Agree (A), 5 = Strongly Agree (SA)

**1. How do you rate the Inventory Management Techniques**

Statement	1	2	3	4	5
The company is effective in practicing inventory management techniques such as ABC, EOQ,JIT					
The company is effective in establishing optimized purchasing procedure					
There is effective inventory control system that optimizes customer service, inventory costs and operating costs in the company					
There is holding of too much inventory but unable to provide better customer service					
Inventory managers have established optimized stock level techniques that need to be kept in the warehouse (i.e. Maximum, Minimum, and safety stock levels)					
The company has computerized all inventory management systems that provide information regarding each type of stock movement.					

Depending on the type of materials, the company follows proper inventory valuation practices such as FIFO, LIFO or weighted average methods					
customer dissatisfaction is directly related with the poor inventory management techniques					
The company adheres strictly to its inventory management policies and procedures to protect materials against theft, damage and loss					
There is insurance coverage to all items of the utility.					
There is an up to date inventory revaluation methods for fixed assets that show correct balance sheet and income statement report					
There is a proper quality control check whether the materials received are according to the specification ordered, required quantity and quality standards					

Do you have any additional point to mention regarding inventory management techniques of AL SAM inventory management? \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

## 2. Obsolete, damage, scraped, and slow moving items

Please read each statements in the first column carefully and show the extent of your agreement on the statements by putting (√) the in the next column using the following rating scale (Likert Scale). The rate are - 1 = Strongly Disagree (SD), 2 = Disagree (D); 3 = Neutral (N), 4 = Agree (A), 5 = Strongly Agree (SA)

Statement	1	2	3	4	5
There are many breakage's/damaged, obsolete, scrap, unidentified and slow moving items mixed with other inventory items in central store					
There is proper recording, handling and controlling system for returned materials from different projects					

Disposal of obsolete and scrap items at central store are effectively done on an annual basis with proper authorization and records					
There is clear procedure for adequate provisions of obsolete and inactive inventories and accordingly inventory management monitors and approves the write-offs for these inventories.					
All disposed items are updated in the inventory records/register/database for the purpose of proper management and control.					

Do you have any additional point to mention regarding the utility's obsolete, damage, scraped and slow moving materials inventory? \_\_\_\_\_

\_\_\_\_\_

### 3. Inventory records & documentation practice

Please read each statements in the first column carefully and show the extent of your agreement on the statements by putting (√) the in the next column using the following rating scale (Likert Scale). The rate are - 1 = Strongly Disagree (SD), 2 = Disagree (D); 3 = Neutral (N), 4 = Agree (A), 5 = Strongly Agree (SA)

Statement	1	2	3	4	5
In the company Central Store Proper documentation and up-to-date records of stock are effectively practiced from the stage of, receipt, storage and issue of materials					
There are discrepancies between the stock record and the result of physical verification/count of inventories at central warehouse					
The current inventory recording system of the company is satisfactory.					
Bin card, stock controlling card and inventory audit report documents reflect correct inventory level and materials					
Receiving, issuing, accounting and storing responsibilities are properly segregated in the company central warehouse					

There are inventory items which do not counted annually at the company central store					
The company inventory management periodically checks inventory reports / records and make immediate decisions based on the reports					

Do you have any additional point to mention regarding the warehouse inventory records accuracy & documentation practice?

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#### 4. Internal control over inventory

Please read each statements in the first column carefully and show the extent of your agreement on the statements by putting (√) the in the next column using the following rating scale (Likert Scale). The rate are - 1 = Strongly Disagree (SD), 2 = Disagree (D); 3 = Neutral (N), 4 = Agree (A), 5 = Strongly Agree (SA)

Statement	1	2	3	4	5
An order is placed only when inventory reaches a predetermined level.					
A fixed order or constant quantity is placed anytime the inventory reaches that predetermined level					
There is perpetual inventory system at the company					
Inventory is monitored continuously (Not only sometimes)					
Software is used to monitor inventory levels.					
Inventory is automatically updated after an invoice is raised or a transaction is made.					
There is frequent senior management involvement in your inventory practices					



The company checks inventory at fixed time intervals (e.g. monthly).					
Orders are placed at specific time intervals					
Replacement quantities change from one order to another					
Inventory reviews are necessary for effective inventory management					
The order size is not constant but enough to reach the fixed target inventory.					
Some items are only ordered based on a request or at the time of the demand.					
The company reduce inventory by providing a situation that makes its processes much simpler					
Higher inventory level or larger safety stock is required in periodic review system.					
Policies and procedures clearly stated and systematically communicated.					

### 5. Challenges in inventory management practice

Please read each statements in the first column carefully and show the extent of your agreement on the statements by putting (√) the in the next column using the following rating scale (Likert Scale). The rate are - 1 = Strongly Disagree (SD), 2 = Disagree (D); 3 = Neutral (N), 4 = Agree (A), 5 = Strongly Agree (SA)

Statement	1	2	3	4	5
There is a problem in availability of the required materials with the right quantity, quality and at the right time					
There are use of outdated storage facilities, aged storage\shades					

There is long bureaucratic procurement process at the company					
There are inventories which are overstocked or under stocked at Central store					
There is lack of pre/post employment training.					
There is poor warehouse management and weak inventory control					
There is lack of integrated and automated system					
There is poor coordination among departments of the company					
There is a proper and up-to-date fixed asset revaluation method.					
Excessive amount of used, scrap, obsolete and slow moving materials at central store.					
There are a large number of waiting customers for new connection					

Do you have any additional point to mention regarding the challenges in the company?

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