ST.MARY'S UNIVERSITY
SCHOOL OF GRADUATE STUDIES

AN ASSESSMENT OF INVENTORY MANAGEMENT SYSTEM: THE CASE OF ETHIOPIAN ELECTRIC UTILITY

BY

SHITAYE WODAJO LEMMA

JUNE, 2017

ADDIS ABABA, ETHIOPIA

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A THESIS SUBMITTED TO ST.MARY'S UNIVERSITY, SCHOOL OF GRADUATE STUDIES IN PARTIAL FULFILLMEN OF THE REQUIRMENTS FOR THE DEGREE OF MASTERS OF BUSINESS ADMINISTRATION IN ACCOUNTING AND FINANCE

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DECLARATION

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

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ENDORSMENT

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

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LIST OF ABBREVIATIONS AND ACRONYMS

EEU	Ethiopian Electric Utility
EEP	Ethiopian Electric Power
EEPCO	Ethiopian Electric Power Corporation
EOQ	Economic Order Quantity
JIT	Just in Time
SPSS	Statistical Package for Social Sciences
SRV	Store Received Voucher
SIV	Store Issue Voucher
ROP	Re-order Point

LIST OF TABLE

Abstract

The purpose of this study was to assess an inventory management system on the case of Ethiopian Electric Utility. Inventory is a crucial part of an asset in any business firm, organization, large or small industry and public service. Because without inventory items, there is no production or service. Therefore managing the inventory is the essential part of the management part. Generally, effective inventory management is the high success of any company. So, this study concern to assess the inventory management that may be enables that the only electric supply provider company to improve the quality service rendering to its customer. The study was employed descriptive research design method. It contained a qualitative and quantities component that enables the researcher to assess the study easily. The study encompasses the main root of the company inventory management areas of departments including Addis Ababa regions finance and key customer accounts. The sampling technique method of the study was purposive targeted population method. The target of the population was 7 department 52 staff members, 8 of 52 population management staff members selected for interview and the remaining 44 members for questioners. According to the objectives of the study the key findings of the study revealed that there is a gap on purchasing department with the company central warehouse that is may be the reason of excess, idle, obsolete inventory items. There is a gap in receiving activity in the central store purchasing department that the dissimilarity of sample purchases and the receiving document lateness. There is a gap in between finance department with central store in recording and document delyance, lack of computer technology to control and manage inventory system; lack of skilled manpower; the impact of unavailability of inventory items that affect the customer service render which is the reason of waiting the customer on list to wait the material to get electric services. The researcher recommended for those problems to improve the inventory management system to serve customer with the quality service rendering activities.

Key words – inventory, inventory management, and inventory control

CHPTER ONE: INTRODUCTION

1.1. Background of the Study

Inventory is stock materials which can be stocked as raw materials, work-in-process goods, finished goods and spare parts. Those are considered to be the portion of a business's assets that are ready or will be ready for sale or for service. Inventory represents one of the most important assets that the businesses possess, because the turnover of inventory represents one of the primary sources of revenue generation and subsequent earnings for any organization. Inventory is also an asset owned by a business that has the express purpose of being sold to a customer or to render services (Ackah & Ghansah, 2016).

Every company has their own inventory where each of the company 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 (Mohammad et.al., 2016).

Inventories help to maximize customer service by protecting against uncertainty, if we could forecast exactly what customer's want and when, we could plan to meet demand with no uncertainty. In broad terms, customer service is the ability of a company to satisfy the needs of customers. In inventory management, the term is used to describe availability of items when needed and is a measure of inventory management effectiveness. However, demand and the lead time to get an item are often uncertain, possibly resulting in stock outs and customer dissatisfaction (Chapman, 2010).

Inventory management can be interpreted as the avoidance of over investment or under investment in inventories, as an essential step in improving overall operational efficiency. Determination of the right level of investment in inventories, consistent with production operation schedules and prompt services, is the core of inventory management (Sharma, 2006).

The goal of inventory management is to balance supply and demand in order to keep customers satisfaction to drive profits. The activities of effective and efficient inventory management are critical to any successful business. Inventory management enables to give the right decisions about what to buy how much to buy and when to buy within the capital limits. These are "value decisions." Excessive inventory investments can tie up capital that may be put to better use within other areas of the business. On the other hand, insufficient inventory investment can lead to inventory shortages and a failure to satisfy customer demand. A balance must be struck and maintained. Generally, it can conclude that inventory management plays a role of coordinating and managing the activities of all business segments (Naliaka & Namusonge, 2015).

Inventory management capability directly determines the inventory levels required to achieve desired service levels. More effective inventory management can also result in increased sales revenue. For many organizations, inventory represents their largest single asset, so improved inventory performance can result in efficient service render to customer satisfaction, significant cash flow and profitability improvements. To attain improved performance, inventory managers must make more accurate and timely decisions regarding when and how much to order (Bowersox, 2003).

Inventory control can minimizing the idling of men and machines which may arise due to shortage of raw materials, supplies and spare parts by stocking them. It can still avoiding heavy costs occurring due to capital lockup or investment, Expenses involved in storing and handling as well as ordering inventory. 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, determining lead time, determination of inventory stats, minimizing of handling and storing cost, effective running of stress (Altekar, 2005) .

Therefore, Ethiopian Electric Utility is the only electric service render company to the public in the country. Accordingly, the company purchases a huge amount of inventory items by a large amount of money to give the electric service to public. On the company report of year (2015) stock summary catalogue, the total organized warehouses over all the companies were reported 319 in number that has a value of birr 4,088,065,760.66. The number of warehouses indicates

that the company handles wide inventory materials. Thus, the research study of inventory management system can support the company to improve inventory management system and its customer service.

1.2. Background of the Study Setting

The Ethiopian Electric Power Corporation (EEPCO) was named in 2005 after serving in the name of Ethiopian Electric Light and Power Authority which was established in 1964. At the time of establishment, the authorized capital of the Corporation was 6.1 billion birr of which 2.67 billion birr was paid up in cash and in kind. Currently, EEPCO reorganized on year 2014 in to two companies on named Ethiopian Electric Utility /EEU/ (Service Render Company) and Ethiopian Electric Power/EEP/ (Dum and Electric Power Transmission Construction Company) by regulation no. 303 & 302/2013.

The Ethiopian Electric Utility (EEU) as public utility enterprise was established for indefinite duration by regulation No. 18/2005, and conferred with the powers and duties of the previous Ethiopian Electric Utility. The purpose of the company is to engage in the business of distributing and selling electrical energy in accordance with economic and social development policies and priorities of the government and to carry out any other related activities that would enable it achieve its purpose.

The Ethiopian Electric Power main function is constructing of Dams, constructing of substation and the higher transmission lines up to substation to sell the generated electric energy to EEU. EEU takes the electric energy from substation through transformer distributing the energy along the line to deliver to each individual customer over all in the country rendering the service for the whole consumers. Currently, the number of customers served by the company is over 2.5 million. It has been increasing the number of customers by more than 33% annually (EEPCO, 2007, EEU, 2017)

Ethiopian Electric Utility (EEU) has a vision of energizing Ethiopia's sustainable growth and enabling it to be power hub of Africa. Also, the company has a mission to be a world-class utility and contribute towards nation building by ensuring delivery of cost- effective, safe, reliable and high quality power and to enable interconnections across the African continent for exporting

surplus power. EEU shall strive towards achieving international standards of customer care through sustained capacity building, operational and financial excellence, state-of-the-art technologies while ensuring highest standards of corporate governance and Ethics (EEU, 2017).

Basically, EEU plays a big role to country economic development by giving electric access on urban and rural areas, for foreign and local investors, households, public service sectors, commercial, factories, originations and industries. According to company vision and mission to realize rendering quality service to local and abroad, the updated availability of inventory materials, well organized purchasing system, and systematically organized inventory handling system must be the most essential parts of the company activities. Since the quality services to become from quality electric equipment and spare parts, quality inventory handling, time based quality inventory purchasing system and use systematic disposing obsolete inventory materials system. All those most important activities can support to manage and to control the company cash flow, idle and excess inventory, inventory cost and idle man power.

Therefore, if a company strongly manages and controls its inventory system, it can be improve the quality of rendering service and expanding its service from country level to continent level to meet its targeted objectives. So the research study on the title of inventory management system the case of Ethiopian Electric Utility can support the company to improve the inventory materials managing and internal controlling system.

1.3. Statement of the Problem

Inventory is one of the main part of the major business's physical assets that is ready to use or will be ready for sale. It can be the raw materials, work in progress, good and finished goods Ackah & Ghansah, 2016). It is necessary to have physical stock in the system to take care of the anticipated demand because non availability of materials when needed will lead to delays in production or projects or services delivered. However, keeping inventory is not free because there are opportunity costs of "carrying" or "holding" inventory in the organization. Thus, the paradox is that we need inventory, but it is not desirable to have inventory. It is this paradoxical situation that makes inventory management a challenging problem area in materials management P. Vrat (2014).

Inventory management is the key to any successful business distribution. Inventory management provides everything that everyone needs to know about the receipt and movement of goods, the sale, removal or other disposition of goods, and the precise valuation and status of goods remaining in inventory at any time. And also, effective inventory management allows a distributer to meet or exceed his /her customer's expectations of materials availability with the amount of each item that will maximize the distributer's net profit (Altekar , 2005).

Inventory control management is an important mechanism of achieving organizational performance. Because inventory is a very critical component in every organization, it requires serious managerial consideration since it ties up a lot of firms' capital. However, inventories are essential to satisfy customer demand and to maximize customer service (Chapman, 2010). So, for any organization, managing and controlling inventories is directed to the success of profit making by inventory cost minimization, to insuring cash flow and to rendering quality service to customer.

The company under study, Ethiopian Electric Utility (EEU) is the only monopolist power rendering company in Ethiopia. It requires bulky purchases of electric distribution materials centrally, to meet its obligation. Those materials purchased to stock in the warehouses include distribution transformer, electric cables, electric wire, electric poles, electro meters and different electric equipment spare parts from abroad and local market to store in the company main warehouse at Gofa. The company also purchases different types of lubricant oil, benzene, and gas oil to deposit at its fuel stations for operational work. According to EEU's Financial Report (2015), the company's total inventories amount was birr 4,088,065,760.66. This amount is 12.07 % of the company's total asset birr 33,860,956,776.99 EEU (2015). It is a significant amount to the company and the inventory amount shows that EEU manages various inventory items.

The audit report of the company for 2015 shows a total birr 5, 830,591.84 abnormal credit balance in inventory account .Also there is a difference between in inventory catalogue that the detail stock item recording in IBM data base system total amount and the total amount that recorded in the organization computerized accounting /AGRESSO financial computer system/ on birr 1,939,007,033.52. In addition to this the number of customers registered in the waiting list

due to lack of materials show 140,587 customers which were reported in the year of 2015. On the other hand, in the company's main warehouse fence, there are excess equipment, wires, cables, spare parts, and electrical instruments that are exposed to damage and theft being kept outside the store without any shelter EEU (2015).

However, there is a research study done by Girma (2016) on the title of Assessment of Inventory Management and Stock Control Practices in the case of EEU .On his study assesses practices of inventory management and controlling practices, evaluate the inventory and stock control handling tools and evaluating warehouse policy and procedure. The researcher study encompasses only four Addis Ababa region and central warehouses. But on his study Purchasing inventory processes and gap on inventory management may be that could be the main root of the causes of the problem of excesses and obsolete inventory is not included; the impact of unavailability of inventory materials on customer services department not included; holding inventory items, inventory revaluation practice and disposal of inventory items impacts on financial report is not assessed and also the controlling system of inventory items on finance department recording system area not encompassed. In addition other researchers studies related to the title, Demisse (2015), Nganga (2013) and Nzuza (2015)on their studies, assessed factors affecting the effectiveness of inventory control, on problem area of long purchasing processes system and factors affecting inventory control problem on lack of knowledge and training of employees.

Hence, This research is focused on ''Assessment of Inventory Management System the Case of Ethiopian Electric Utility'' study encompasses problems which other researchers are not assessed, in addition , EEU is the only company to render electric service to public over all the country. Therefore, more understanding of the gap in inventory management system in a company is the major solution for EEU to improve rendering the quality and efficient service to public.

1.4. Basic Research Quotations

In light of the problem discussed above the research aims to answer the following research questions:

- What is the company practice on purchasing inventory items?

- What are the company practices on inventory receiving and handling system?

- How does the company control the inventory system?

- How is the company inventory items used?

- What are the company practices on inventory revaluation and disposal of obsolete items?

1.5. Objectives of the Study

The objectives of the study may be classified in to general & specific objectives.

1.6. General Objective

The general objective of the study is to assess the existing situation of Inventory management and internal control system in case of Ethiopian Electric Utility.

1.7. Specific Objective

In addition to the above general objective the study aims to:

- assess the practice of purchasing inventory items;

- assess the inventories receiving and handling system;

- assess the inventories controlling system;

- assess the inventory items usage; and

- assess the stock revaluation and disposal system of obsolete inventory items

1.8. Significance of the Study

Every research is expected to contribute in some ways to various parties. The study is important to assess inventory management system the case of EEU. Because, the inventory materials have an impact on company services render for its large number of customers. So the study's findings and recommendations are highly important to Ethiopian Electric Utility management for making the right decision to rendering quality customer service by improving their inventory

management controlling system. The study is also important to top level management and policy makers of EEU in understanding of the study finding and recommendation to improve their inventory system. In addition to these, the study will serve as information for those who are interested to conduct further study on related topics.

1.9. Scope of the Study

It is impossible to encompass all aspects of inventory management system of the company considered in this study. The study is thus limited to the assessment of inventory management control system of EEU's Purchasing Department, Retail Business and Finance Department Head Office at Piassa, Central warehouse at Gofa, North Addis Ababa Region, South Addis Ababa Region, East Addis Ababa Region, West Addis Ababa Region, Finance Department, Addis Ababa Regions Customer key Accounts and Warehouses. The reasons to encompasses the only these selected target department is EEU is a large and huge, the only electric service render company in a country thus to asses overall the company inventory management is difficult in case of capacity time and money constraint.

1.10. Limitation of the Study

Most of the time, every researchers passed through different limitation but the degree of limitation depends on the situation that the researcher involved to conduct the research study. The researcher faced different problems that make hard to conduct the study properly, such as; the time scheduled to conduct the study is very short, the respondents were not returned the questioner on time; due to the interviewees appointed according to their program, it takes long time to conduct the interview desiccation,. Because of the interviewee and questionnaire respondent staffs are from different department, the researcher traveled a long distance to collect the data.

1.11. Organization of the Research Study

The study is composed of five chapters. The first chapter comprises introductory background of the study, statement of the problem, basic research question, and objective of the study, significance of the study, scope of the study and limitation of the study. While chapter two

dwells on the review of related literature. The third chapter deals with research design and methodology, with particular focus on the sources of data, data collection instruments employed the procedure of data collection and the methods of data analysis used. The fourth chapter is present the major of findings of the study, on the basis of data obtained. The last chapter contains the summary, conclusions, and recommendations.

CHAPTER TWO: REVIEW OF RELATED LITERATURE

This chapter projects to review theoretical and empirical theories related to the study to reveal knowledge for more understanding of inventory management that supports the study analysis of this thesis.

2.1. Theoretical Review

Theories are analytical instruments to understand the study, to elaborate and make assumption about the subject matter. It can also help us to compare the conceptual framework are evaluate and comment on the research gap of the given study (Mwangi & Nyambura, 2015).

2.1.1. Concept of Inventory

Inventories are materials or resources of any kind having some economic value. It is also a major asset that should provide return for capital invested and either awaiting conversion or use in future. Apart from these, there are many indirect materials such as maintenance materials, fuels and lubricants, and other materials which are used in a manufacturing or service rendering organizations. They are also classified as inventories of materials for future use. But they differ only in their use and classification from raw and other direct materials. All required items are stocked in to warehouse to be used when the needs arise (Datta, 2003).

Inventory is one of the main part of the major business's assets that is ready to use or will be ready for sale. It can be the raw materials, work in progress, good and finished goods. Inventory turnover represents one of the primary sources that enable businesses to generate revenue and continuous earnings to the company's stakeholders. Inventory is an asset and owned by a business that has an advantage of being sold to a customer. It includes items sold to end customer or retailers (Ackah & Ghansah, 2016).

According to Godana, & Ngugi (2014), inventory is essential to organization for production activities, maintenance of plant and machinery as well as other operational requirements. This results in tying up of money or capital which could have been used more productively. The management of an organization becomes very concerned in inventory stocks are high. Inventory is part of the company assets and is always reflected in the company's balance sheet.

Types of inventory

Most of inventory items are categorized as the following.

(a) Raw materials inventory as input to manufacturing system.

(b) Bought-out-parts (BOP) inventory which directly go to the assembly of product as it is.

(c) Work-in-progress (WIP) or work-in-process inventory or pipeline inventory.

(d) Finished goods inventory for supporting the distribution to the customers.

(e) Maintenance, repair, and operating (MRO) supplies. These include spare parts, indirect materials, and all other sundry items required for production/service systems

(Varta, 2014, page 23).

Inventory Systems

Periodic Inventory System- under a periodic system, a company determines the inventory balance and cost of goods sold at the end of the accounting period. That is, firms or any business organization can determined its inventory on perpetual system. The firm or business organization's the beginning balance sheet includes the opening balance of inventory. Purchases made during the period increase inventory available for sale. At the time of operation purchase discount and return can be occurred that recorded on temporary account and closed at the end of period. The beginning inventory balance plus the net purchases is the cost of goods available for

sale that is, the total amount of inventory that will either be sold during the period or remain in ending inventory. The ending inventory balance is taken based on a physical count of the inventory (Mosich, 6th Ed 1989).

 Perpetual Inventory System- in practice, technological advances have made the periodic system obsolete and provided the computer software for firms to use a perpetual system. Under a perpetual system, firms or business organization continually update inventory accounts for each purchase and each sale. A perpetual system is superior to a periodic system because it always provides current information about inventory levels; costs of goods sold, and gross profit (Mosich, 6th Ed 1989).

2.1.2. The Usage of Inventory

Inventories are the stock of an organization that the company keeps on store for future usage (Pandy, 2003). Inventory helps the organization to make important decision that is tangible at all levels of activities, distribution and sales, being a main part of total current assets of many organizations (Moore, Lee and Taylor, 2003).

It is essential to keep on hand a physical stock in the system to protect the uncertainty because non availability of material may lead to dlayance in production or project or service delivered. Keeping inventory also has an opportunity cost of "carrying "or "storage" inventory to the organization. So, the contradiction is though we want inventory, it is not easy to have inventory. These conditions make inventory management a difficult problem area in materials management. It also makes high inventory turnover ratio which can be the indicator of enviable performance (Vrat, 2014).

Effective inventory management gives the chance to make continues competitive advantage and improvement of the competitive position of the companies. This leads reduction in cost of storing stock by replenishing just sufficient inventories, the right place, right time and cost. High levels of inventory affect the organization cash flow, reduce efficiency and adversely affect the procurement performance out of the capital. The inventory system helps the operating policies and organizational work flow for replenishing and controlling materials in store. Capable

management of inventory system requires an appropriate system of making the decisions to keeping track of items in inventory and how much and when the order is applied. In every organization the decision on inventory is based on the facts about the balance of inventory on hand, forecasting demand information, lead time and time variation, stock cost, ordering cost and shortage cost (**Naliaka** & Namusonge 2015).

2.1.3. Inventory Management

According to Sharma (2006) inventory management can be described as the protection of over investment and under investment in inventories, by improving on the main necessary operational activities. Determination of the right level of investment in inventories, consistent with production operation schedules and prompt services, is the activities of inventory management. Mohamad 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 and the over or under stocks always must be low. Brutus (2015) explains that inventory materials represents an important asset .it is the largest single item and it has accost in every organization. Material management is the important aspects of any organization to function handling and acquisition of stock, assigning line management, storage, and material transport. Material management and control components role are very similar in order to make organization effective efficient.

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.

Mohamad 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, and also where the inventory is stored or is ready to be used and the cost must expect to be low.

Lau , and Snell,(2006) notes that The inventory management scope is concerned with the replenishment and lead time, carrying costs of inventory, asset management inventory forecasting, inventory valuation,

inventory visibility, future inventory price forecasting, available physical space for inventory, quality management, returns and defective goods and damage forecasting. Godana & Ngugi (2014) stated that inventory management is more concerned on controlling of each stapes of inventory activities. This is practiced by involving the system of storekeeping and stock control activities efficiently and economically in the store. Most of the time the efficiency of inventory management procedures and practices are under question for management because many times the result of a procedure of managing inventory have a problem of shortage leading different weakness may be a losses that happens a result of over stock level ,under stock level, expiry inventory, failure to achieve the set goal.

Banjoko (2000) explained that the basic objectives of Inventory management is making sure the right item is offered at the right time, stored at a right place and minimizing the cost of stock. Wild (1998) described that the function of Inventory management is organizing the works and responsibility together for determining the materials required for scheduling, storing and disposing the obsolete inventory items.

Ziukov (2015) stated that stock is created for keeping the reserve inventory in to store for using when the need is arise in operation or at maintenance time. It needs proper determination to control the level and to allow significant amount asset, frozen in the form of stocks which increase ultimately competence of resource use. **Brutus (2015**) stated that, the classical material management is acquisition of materials and services of the required quantity, at the right price, from the right source and at the right time. Even though there are factually many of different types of products produced in our society, there are only two major decisions firstly making in controlling activity. The question of   how large should an inventory replenishment to be order? And when should an inventory replenishment order be placed? Must be got the answer before any decision consider the main objective of management frequently minimizing the problem, if it is more profitable by fast movement to get more profitable but more expensive or make slow to cheaper the cost. Such type of strategy will be optimal inventory control   that can be minimize the sum of many stock costs that included to production or services , storage and inventory shortage per unit of times a specific amount of time(Ziukov, 2015).

Generally, inventory needs a serious managerial attention since it ties up a lot of organization capital. However, Inventory keeping in store is very necessary for the activities of continuous production or to sustainably render services to customer (Samuel & Ondiek, 2014).

2.1.4. 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 and controlling of inventory items are based on the product, customer needs and 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 and machinery by increasing their inventory (Mohamed, et.al 2016). Inventory management system is essential to approve the quality of control in stock handling and the area of customers served by consumer goods. A good inventory system will 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 and helps by providing up to date information of the stock items in the warehouse (Ackah & Ghansh 2016).

The role of inventory management is arranging and organizing over all operation of the organization maintaining the transactions of sales appropriately keeping the level of stock to satisfy customer's needs. The achievement of inventory management is satisfying customer and driving profit by keeping the required inventory items, balancing the right order as customer needs. The activities and controls of effective inventory management are very necessary for any businesses successes. Since all business has a limited working capital, inventory management responsible to make decisions what type of materials by, the quantity bought, by how much or within the capital limits. These are the important decisions. Bulky inventory keeping can tie up capital that may be used for other investment to generate income is locked up without nothing. On other way less keeping inventory items can be a weaker to satisfy customer need and the organization can't achieve its setting goal (Naliaka.& Namusonge. 2015).

Poor inventory management had become an issue of great concern since performance is regarded as the main stream for development of organizations. A truly effective inventory management system minimizes the complexities involved in planning, executing and controlling a supply chain network which is critical to business success. The opportunities available by improving a company's inventory management can significantly improve bottom line business performance (Ackah & Ghansh 2016). Therefore, Inventory management is plays a very critical role for all types of organization. It is a vital for profit making and service rendering organization for their successes.

2.1.5. 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 accordingly, this would not occur without inventory. Accounting experts stated that to accepting corporate profit-and-loss, 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).

Sharma (1997), stated that the inventory control is a very important activities of inventory management and it plays an essential role for managing economic operation. "To achieve higher operational efficiency and profitability of an organization, it is very vital to reduce the amount of capital locked up in inventories. this will not only help in achieving return on investment by minimizing tied-up working capital, but will also improve the liquidity position of the concern. And also Benedict and margeridis (1999) described that inventory control means any time and any where the required availability of materials in stock. The sum total of those activities of an organization is important to procurement, storage, sales, disposal or usage of materials can be identified by material management. Inventory management is ready when required and utilize

available storage space and the items are in balance. The maintain accountability and responsibility of inventories asset is the inventory management. Inventory management, before decision they must be checked plan budget and also must know how to order and 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 and distribution.

Inventory records management

Inventory control rescored is important to make decision to bay and sell. Some company control their stock by taking physical inventories at regular intervals, monthly or quarterly. Others use a dollar inventory rescored that what the inventory gives a rough idea of what the inventory may be from day to day in terms of dollars. If the stock is made up of thousands of items, as it is for a convenience type store, dollar control may be more practical than physical control (Amold, 1998).

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 of 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 and dispose of excess inventory.

Stock Verification and Accounting

To reconcile the stock records and documents for their accuracy and usefulness, to identify areas which require more disciplined documents control, and to back up the balance sheet stock figures, a provision for independent central stock verification team instead of departmental committees be made to verify the stocks annually. A policy of centralized stock verification is likely to result in better reconciliation of the assets as per the balance sheet and the actual assets in the stock (Sharif , 2015).

2.1.6. Model of Inventory control Management

Planning Inventory Order

"Key parameters and procedures, namely, when to order, how much to order, and inventory control, guide inventory planning. When to order is determined by the demand and performance average and variation. The how much to order is determined by the order quantity. Inventory control determines the process for monitoring inventory status."(Bowersox, 2002, page, 291).

Inventory Control System- Degree of Involvement

The effects of inventory control systems on organizational performance and effects of lead time on organizational performance. Inventory control systems are the most important function of materials management and it forms the nerve centre in any organization (Ramakrishna, 2005). An inventory control system is a system that encompasses all aspects of managing a company's inventories; purchasing, shipping, receiving, tracking, warehousing and storage, turnover, and reordering. Using that definition, the respondents were required to respond to the statements as it implied to the organization (Keitany, Wanyoike & Richu,2014).

2.1.7. Inventory Purchasing and Dissection

Procurement is the processes of determining the order quantity purchase of items, work processing, store requisitions, issue of enquiries, and evaluation of quotations, supplier appraisal, negotiations, placing of contracts, progressing of deliveries and clarifying payments(Brutus, **2015).Su**ccessful inventory management involves creating a purchasing plan and design that will ensure that items are available when they are needed but that neither too much nor too little is purchased and keeping track of existing inventory and its use (Berling, 2011).

 In every organization there are two types of common inventory management strategies are the just-in-time method direct purchase for direct to use, where establishments plan to receive items as they are needed rather than maintaining high inventory levels, and materials requirement planning, which schedules materials deliveries based on sales forecasts. Proper inventory management requires an organization to undertake stocking and use appropriate method to value stock so as not to under or over state profits (Kotabo, 2002). The inventory purchasing management approach of accurate response is an excellent mechanism that helps businesses

manages their inventory; especially to Public Service Company it enables to give a quality and proper services.

Inventory Decision

The main objective of inventory management is identifying the effects of cost that having items in stock and not having items in stock and compute the cost of holding and ordering the inventory. In order to attain a balance between inventory availability and cost must be addressed the main target inventory management volume that How much to order and when to be order (Porter, 2011). Therefore, since inventories a key to any organization, inventory management must be pay attention when decision making. There are different techniques and modeless can help inventory management control systems.

Economic Order Quantity Modal

Economic order quantity is the technique of determining the optimum quantity which can be minimizes the total of inventory order and carrying costs. There are two types of major costs included with inventory. Those are procurement costs which is vary with the number of orders in annual procurement and carrying costs. This affects by raising the procurement costs, if the inventory items purchased in small quantity. The annual purchasing of inventory costs directly equivalent to the quantity in stock. If the quantity order in each order is small, the carrying cost of stock is decreased. The procurement cost and the carrying costs are completely different. The right quantity is obtained as opposite to as "Economic Order Quantity" (EOQ) (Jose &, Jayakumar, 2013)

$$EOQ = \sqrt{\frac{2 * \text{Demand} * \text{Re-order Cost}}{\text{Carrying Cost}}}$$

(Jose V*, Jayakumar*, M. T* 2013 , page1)

The Re-order Point (ROP) model

The EOQ model thought us the quantity size to order, but not the time to order. The reorder model finds out the time to order when the stock level go down to a predetermined amount, this generalize a quantity of stock to cover for the lateness between order delivery or the time gap of

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delivery and this activities that can reduce the risk of running stock out when the quantity level low (Porter ,2011).

Determining When to Order

When Inventory items replenished, a reorder point can be specified in terms of units or days' supply. Consequently, it can be reordered reorder points under conditions of demand and performance cycle certainty.

The basic reorder point formula is:

R=D*T

R = Reorder point in units;

D = Average daily demand in units; and

T = Average performance cycle length in days.

The use of reorder point formulations implies that the replenishment shipment will arrive as scheduled. When uncertainty exists in demand or performance cycle length, safety stock is required. When safety stock is necessary to accommodate uncertainty, the reorder point formula is:

R=D*T+SS

R = Reorder point in units;

D = Average daily demand in units;

T = Average performance cycle length in days; and

SS = Safety stock in units (Bowersox, 2002, page292)

Just In Time (JIT) model

According to Canel, et al., (2000), JIT aims is to reduce time waiting during production process. Therefore, the cost of inventories not only can be minimized but also the time for the production also shortens. JIT concept is not saying about the standardization or the way of managing but it really focusing on the zero inventories. This system builds a good relationship and trust suppliers and based on willing of suppliers.

2.1.8. Warehouse Management

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

2.1.9. Handling of Inventory

Zijm (1999) defined as inventory material management is a movement of materials (raw material, scrap, semi-finished, finished products spare parts) in processes of any operation system, and in warehouse storage, in resaving processes and shipping areas. The main material handling is concerned material flow with warehousing. There is some materials typical support the material flows like forklifts, automated guided vehicles, shuttles, overhead crane and power and free conveyors. Warehousing uses those materials for flow activities from place to place and also to receiving and shipping areas. Essentially, according to materials usage and type the receivers of inventory material warehouse may be divided as Distribution Warehouse, Production Warehouses and Contract Warehouses.

Design of Material handling system

Inventory material handling system designed is taking into consideration of cost minimization. Material handling approach is most important activities in many conditions since, while material handling can add a value to an organization, it is typically difficult to measure and enumerate the benefits included with material handling. But the material handling cost is much easier to measure the cost (Heragu,2009).

2.1.10. Principles of Material Handling

According to Heragu (2009) , even if, material handling system designee haven't a definite followed rule .However, The College-Industry Council on Handling Education CIC-MHE) in collaboration with the Material Handling Institute (MHI), represents the sanitization /cleansing/ of many years experience and knowledge , they complied ten principles of material handling .

a) Planning Principle. All material handling necessarily planed according to the required objectives.

b) Standardization Principle. Material handling method that to be standardize, fixable equipment and software, keeping the modularity to the organization to achieve its setting goals.

c) Work Principle. Material handling works it defines by the material movement without stacking the activity of the organization keeping the level of inventory.

d) Ergonomic Principle. Balancing the human capabilities and limitations must be included in designing and also material handling tasks and equipment must ensure on operation.

e) Unit Load Principle. The material flow and inventory objectives in each operation activity must be insured and must be cheeked the availability of materials by supply management.

f) Space Utilization Principle. Effective and efficient use must be equally available on every stage and place.

g) System Principle. Every material movement on operation and storage all activity integrated to form a coordinated, operational system which spans receiving, inspection, storage, production, assembly, packaging, unitizing, order selection, shipping, and transportation, and the handling of returns.

h) Automation Principle. Material handling should be in every place must be systemized or using computer system to improve the operational activity and efficiency, decrease operating costs and also minimize the using unsafe manual labor.

i) Environmental Principle. At the time of designing and selecting the alternative equipment, material handling system must be in to consideration.

j) Life Cycle Cost Principle. On material handling life cycle the economic analysis should be considered. (Heragu,2009).

Heragu (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 and also in service systems. Material movement occurs everywhere and every time as required in warehouse or out of warehouse.

Consequently, a minimum handling activity is very essential for any company. Due to the manufactures produced varieties of products to easily satisfy the need of demand. Therefore, highly efficient and effective material handling system is very necessary. Also material design system included that facility layout, product routings, and material flow movement must be considered (Heragu, 2009).

2.1.11. The Impact of Excess inventory

Excess inventory of firm has a cost of holding an inventory and it will be negatively affects the net cash flows of the firm. Those costs could be include capital cost,(interest opportunity) and the storage costs, insurance, taxes, spoilage, losses and other related to storage costs. The amount of other costs is based on firm decision that to take the action to excess inventory. In industry case when the technology changes fast and the product cycle short, the price of products may be festally go down. In any organization the excess inventories, the declining in price is part of the holding excess inventory. In addition to these the cost of providing price protection and product returns is increases in cases of excess inventory (Jijm, 1999).

According to Calloni et.al (2005) in some situations unfortunately a firm or a business might forced to close and again to restart at that time the organization incur a cost. The cost of inventory become to write off, all items that have an economical value like inventory materials value will become less and it must scraped or sold at bargain price. These implies that inventory write offs could incur additional cost of inventory disposal. So, if an excesses inventory a cause of the value under, the profit margin become compacted. In addition, the liquidations that the under value involve to marketing, and incurred distribution and selling costs. In general excesses inventory is increase the total cost and decrease revenue and profit. Also there are many cases that can be affected indirectly the price of inventory items. A firm may have a restricted price control over excesses inventory, by giving the first opportunity to customer. Excess inventory has an influence on flow of sources of funding availability and it is the main obstacle to the business new opportunity of expansion.

2.1.12. Inventory Valuation

The inventory materials hold since it is idle, the price of those materials decrease in many reasons that is a deductible cost. The net asset valuation is one of the simplest forms of company valuation. It is computed to be the difference between the assets and liabilities based on the respective Balance Sheet values. But net asset values are generally lower than market values as many value creating items are not accommodated in the balance sheet for accounting reasons like investments in marketing, education of employees etc. The asset valuation methodology is useful in case of liquidation/closure of the business (Arooq &Agrajan, 2014).

2.1.13. Obsolescence

Obsolescence cost results from deterioration of product during storage. A Prime example of obsolescence is product that ages beyond recommended sale date, such as hold and pharmaceuticals. 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).

Inventory Costs

Inventory is the important asset of any organization. It plays an important role in to performance of any firm for production activities and also essential for service render organization. However, Inventory since it is an idle resources, it incurred on a period of times some costs to organization or business.

"Inventory carrying cost is the expense associated with maintaining inventory. Inventory expense is calculated by multiplying annual inventory carrying cost percent by average inventory value. Standard accounting practice is to value inventory at purchase or standard manufacturing cost rather than at selling price" (Bowersox,2002,page,288).

Storage "Storage cost is facility expense related to product holding rather than product handling. Storage cost must be allocated on the requirements of specific products since it is not related directly to inventory value. In public or contract warehouses, storage "(Bowersox, 2002,page,289).

2.1.14. ABC Analysis

The company purchases different inventory items from different suppliers. There are many types of control system such as ABC, XYZ , FSN, VEN. The concept of ABC is a model that can used to form a rational inventory policy which to minimization of stock cost including storage and wage cost. The purpose of ABC analysis is to organize the inventory materials according to their usage and annual dollar. The amount is used to calculate by multiplying the amount per unit by the annual rate. This analysis follows a simple rule of thumb. (Kumar, 2017)

Table 1   ABC Classification

Descriptions	Number of Items	Number of annual sales revenue
Class A items	About 20%	About 80%
Class B items	About 30%	About 15%
Class C items	About50%	About 5%

(Plinere & Borisov 2015,page 92)

2.1.15. Obsolete Inventory

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 management 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. The indicator can be show the difference between the current and the previous inventory and 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:

$ZM = \Sigma \, d. \, I$

Where:

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

I – Value or amount of slow-moving resources in a warehouse

2.2. Empirical Review

Different studies have been conducted by varies researchers, concerning the practices of inventory management aim to investigating and control both public and private body with the general practices in such companies. More of them have a problem of managing inventory items. Ackah & Ghansha (2016) by their study, on the title of Assessment of Inventory Management, the researchers assessed the Performance of the Production 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 profitability. In order to reduce the cost of holding 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. Therefore increasing organizational profitability since inventory represents the asset account. Despite the growing concern for non-stock procurement policies, inventory continues to play a vital role within organization supply chain (Ackah & Ghansha 2016).

According Girma (2016), studies on title of the assessed the problems of inventory management and stock recorded handling in the warehouse. He stated his finding that the major problems of inventory management are- Lack of attention of store management, lack of assigned qualified employees to the right position on the right time, no planning mechanism to solve problems to improve inventory management and controlling system and lack of work performance evaluation of employees of the warehouse. The warehouse management and employees are working on inventory management and controlling function facing with lack of knowledge or skill to meet the expected performance. The company inventory items kept unsafely, misused of some materials and improper guide lines work manual. The researcher also gave his comment on the company concerning the periodic and perpetual inventory system, company should attention to inventory management, plan and evaluate warehouse employees performance, approve employees who are assigned in warehouse and prepare work related policies and procedures concerning to inventory management and controlling system.

Chan (2015) by her study of she said that, examine the association between inventory management and ineffective internal controls and hypothesize those managers found in firms with inventory-related material weaknesses in internal control are delayed in their inventory management, thus their firms experienced more stock shortages and overages. The company and have a higher possibility and magnitude of inventory impairments. It shown the weak evidence is that inventory turnovers improve when the weaknesses are corrected.

Demisse (2015), Nganga (2013) and Nzuza (2015)on their studies, assessed factors affecting the effectiveness of inventory control, on problem area of long purchasing processes system and factors affecting inventory control problem on lack of knowledge and training of employees and also the practices of inventory audit is negatively affected inventory . Ogbo and Ukpere(2014) studies on the effective inventory control management , according to their finding un effective inventory control system drives high inventory cost and storage cost that decreases the organization profitability . Improving inventory control system has a benefit of cost reduction improvising sales effectiveness , reduction of waste, transparency and accountability, easy storage and high inventory utilization .In order to achieve all these, organization have to maintain flexible inventory services.

Keitany, Wanyoike & Richu (2014) they are stated their study on their findings shows that inventory control systems and lead time in materials management, an organization can achieve the benefits of effective use of labor, providing system flexibility, increasing productivity, decreasing lead times, reduction in wastes, reduction in production costs, increased product quality are achieved. The ratings showed that inventory control systems played a vital role in organizational performance, and as such, organizations must ensure that inventory controlling system are highly involved in material management activities hence achieving higher organizational performance.

According to Mwangi and Nymbura (2015), understanding of the challenges faced by organization on poor performance of inventory controlling system, has an advantage to the organization successes. The results clearly indicate the necessity to provide support to organization if they are to successfully manage inventory. Accordingly, support to overcome the identified barriers of inventory

management need to be recognized. However, most of the businesses are not confident with inventory management as technique of influencing performance of food processing companies.

Naliaka and Namusonge (2015) ,On their study, They conclude that the firm's computers are linked with those of the suppliers in a real time environment although with varied responses. The firm at a lesser extent has computerized all its inventory management systems. The study concludes that Unga Group Limited has attained much through inventory control systems. Inventory control system has enhanced timely deliveries, to reduce production costs, to increase product quality, to decreased production cycle time, to reduced wastages, to reduce stock levels and to increase profitability as shown by a general mean of 4.12. The ratings showed that inventory control systems played a vital role in attaining competitive advantage, and as such, organizations must ensure that inventory control system be highly involved in inventory management activities.

2.3. Summary of Empirical Review and Research Gap

Generally, in all the above studies researchers conducted inventory control management studies by different researchers in different angles, concerning the factors affecting inventory management, the assessment of inventory management , internal control system and the role of inventory control management . These show that how inventory managing is the key part of the management functions to perform in manufacturing, service renders company, any public company, small and large industries.

Inventory management plays a very significant role for any firm and business Ackahand &Ghansh(2016). However, since it holds without service instead of generating income it incurs cost. There are a lot of researches done on inventory control management in different problem areas but most of them done on firm's areas. Like Ethiopian Electric Utility Company, maximum amount of inventory is purchased from abroad with very coasty price. In addition to these, the company role is different from other services because of the electric services are critical for today's life. Those studies described on the above are not assessed the main core areas of gaps of purchasing inventory controlling system, the finance recording controlling system, the impact of unavailability of inventory on customer service department work performance, the revaluation of

inventory items, the disposal of inventory obsolete items, the excess inventory purchase and idle inventory purchases. So the assessments of inventory management study encompass those areas under Ethiopian Electric Utility.

CHAPTER THREE: RESEARCH DESIGN AND METHODOLOGY

This chapter presents the methods used for the study. It explains the research design and gives details about the population, sample and sampling techniques as well as the research instruments used in collecting the data for the study. It also discusses the data collection methods and data analysis plan.

3.1. Research Design

This research employed a descriptive type of research design method. It contained a qualitative and quantitative component that enables the researcher easily to assess the inventory management system in case of Ethiopian Electric Utility.

3.2. Population and Sampling Technique

The sampling technique used to acquire the primary data is the all selected target population purposive type. The reason behind selecting such technique is to enable the researcher to acquire the required information from those respondents who have directly a related work to the topic of the study for a better data collection .This selected total target population technique benefits to the researcher to get more information, because all target population are a participant of

information supplier based on their work.   The researcher based on the above sampling technique, displayed the selected and employed target population size on the following table.

Table, 2

Name of Department	Total Targeted Population /Number of staff in department						
	Department Head	Region Customer key Acc. Head	Finance Officer	purchaser	Store Head	Store clerk	Total
Material and Property Finance Office	1		4				5
Budget Control Office			4				4
Supply Logistic and Warehouse Office	1			8			5
Central Warehouse	1				6	6	13
Region Finance Office			8		4	4	20
Business Retail	1						1

Region key Customer Account Head		4					4
Total	4	4	16	8	10	10	52

Source: survey, 2017

The researcher selected 7 departments which are related to inventory handling, purchasing process, inventory control management and user department. The total population size of selected target department consist 52 staff members.

Table 3,

Methods	Number of Selected Population for interview					
	Material & Property Head/Finance	Logistic and Warehouse Head	Central Warehouse Head	Retail Business Head	Region Customer Key Accounts Head	Total
Interview	1	1	1	1	4	8

Source: survey, 2017

The researcher selected eight /8/ department head staff members from the total targeted department's population for interview. Who are able to provide the most relevant information for the study considering their position, skills and work experience to get the main root of problems; Those selected departments are;

Material and property department - It has a responsibility to control inventory management activities in finance recording over all the company. Therefore, the department is the most important for the study to obtain more detail and necessary information on controlling area.

The logistic and warehouse department -it is the main important parts part for the study. It administered the central warehouse and purchasing department. Those two departments have a big role on inventory purchasing and management system .Thus, the interview of this department is more essential for the study to get the detail information on the problem area of inventory purchase.

The central warehouse – is the significant part for the study to obtain the most relevant information. Because, this department is the central head of the company warehouse that distributes inventory items to the whole fifteen regions of the company. Hence, this department is the basic targeted up on the main root of problems area for the study.

Retail Business department - is a useful department to acquire the supportive information for the study getting how the impact of inventory items affects the work performance of their department. It supports the overall customer management representatives by planning and designing how the company could provide the services to the customers.

Addis Ababa Regions Customers key Accounts - it is the four customer's key accounts of the fifteen regions of the company which provide services to customers classifying in to different four regions. These are named as – North Addis Ababa Region Customers key Accounts Department, South Addis Ababa Region Customers key Accounts Department, East Addis Ababa Region Customers key Accounts Department, West Addis Ababa Region Customers key Accounts Department. These interviews provide useful information to the research to get the solution for the impact occurred up on inventory materials management.

Table 4 ,

Methods	**Number of Selected Population for Questionnaires'**					
	Region Finance Head	Finance Officer on Head office	purchaser	Central Store Head & store Clerk	Region Store head &Store clerk	Total
Questionnaire	8	8	8	12	8	44

Source: survey, 2017

These are the rest 44 of the 52 selected population staff members who are working in the area related to the topic to that of the targeted department are chosen for questionnaires to obtain the necessary information concerning the inventory management problems to find the resolution for it in a simple and an easy ways, making the respondents response being confidentially.

3.3. Procedure of Data Collection

The source questionnaires and interviews were used as major methods of data collection in the study of inventory management system the case of Ethiopian Electric Utility. The questionnaires were distributed to 44 respondents out of the total population of 52. After this interview was conducted which 8 department heads in the company. The information obtained through questionnaires and interview was analyzed using SPSS system.

3.4. Methods of Data Analysis

The data analysis method of the research is a descriptive statistic method that used tables for computation of measures of average by using SPSS system. Therefore, the correct interpretation of the data in descriptive form is made to draw conclusion from the analyzed data and to lead valid conclusion on the study. And also interview responses are analyzed using thematic analysis .It can aid the researcher's authenticated conclusion and recommendations.

3.5. Ethical Consideration

Ethics is there to minimize harm and to ensure that the research participants are subject to any risk or exposure due to any improper methods of protecting privacy. In relation to the research work, EEU was asked its consent with a supporting letter issued by St. Mary me university and the company became volunteers for the research work. Accordingly, the researcher took in to consideration the following ethical issue. Any relegated data for the study was collected by issuing an official letter to EEU; the target respondents were fully informed about the purpose, method, and intended possible uses of the research, what their participation in the research entails and what risks, if any, are involved; the confidentiality of information supplied and the anonymity of respondent is respected.

CHAPTER FOUR: RESULTS AND DISCUSSION

4.1. RESULTS/ FINDINGS OF THE STUDY

This chapter contains the analysis and interpretation of the data collected through questionnaire and interviews, presenting for the assessment of inventory management system in the case of Ethiopian Electric Utility. Its analysis and interpretation of this data was organized in to four different parts. These are named as purchasing department, central warehouse and region, retail business and the four Addis Ababa regions customer key account departments and Finance department. Because of the target population of the study encompasses different departments, the conducted questionnaires and interviews were different for each department. Hence, the general views of all respondents are presented below.

Table 5.   Part I, Questionnaires Respondents Background Information

Variable		Frequency	Percentage
Gender of the respondents	Female	15	34.09
	Male	29	65.91
Education level of employees	Diploma	19	43.18
	1st Degree	25	56.82
	Accounting	39	88.64
Field of Study	Business Administration	1	2.27
	Management	4	9.09
	1-5	2	4.54
	6-10	6	13.63
Employees Work experience	11-20	17	38.64
	Above 21	19	43.19
Total respondent		44	100

Source: Compiled from survey data Dec., 2017

According to the above table, 29(65.91%) out of 44(100%) questionnaires respondents are male when the remaining 15(34.09%) out of 44(100%) respondents are female. The

result shows that the number of female   involvement in the company is lesser than the number of male.

The respondents education level result indicates that 25(56.82%) out of 44(100%) respondents have a first degree the remaining 19(43.18%) out of 44(100%) at diploma level and 36(81.83%) of the total respondents have more than 11 years work experience, that enables them to understand and replay the questionnaires easily.

Table 6.   Part I, Interviewees Background Information.

Variable		Frequency	Percentage
Gender of the respondents	Female	1	12.5
	Male	7	87.5
Education level of employees	1st Degree	7	87.5
	2nd Degree	1	12.5
Field of Study	Accounting	5	62.5
	Management	1	12.5
	Marketing	2	25.0
Employees Work experience	11-20	3	37.8
	Above 21	5	62.5
Total respondent		8	100.0

Source: Compiled from survey data Dec., 2017

The result of the above table shows that the total number of the interviewees participated in the study are 8 in number, out of this participants 7 (87.5%) of the total interviewees are male where as the remained 1(12.5%) of the interviewees was female who is participated in the study. The result illustrates that the number of female participant in interview is lesser than the number of male. At the education level 1(12.5%) of the total interviewees is at the 2nd degree level when others 7(87.5%) of the total interviewees are found at 1st degree level. Beside this, the total interviewees have more than 11 years work experience, that enables them to understand and discusses the interviews as required.

4.2. The Purchasing Practices of EEU

Purchasing department is a key to any organization by supplying the required stock materials to sustain their performance. According to the company activity, their purchasing department plays a big role to supply the required electric equipment and spare parts. Thus, the researcher believes that this area is important for the study of inventory management of EEU. Because purchasing system on inventory control management has an impact in every company activities. Consequently, the researcher assesses the company purchasing practices raising some interview discussions and questionnaires to logistic and warehouse department head and purchasers. The department responses are shown in the following tables with interpretation.

Table 7.   Part II, Inventory Purchasing Practices – Responses of Purchasing Department

Electric equipment purchased for stock items from local market	Frequency	Percentage
1. We can got	6	75.0
2. Some materials are not available easily	2	25.0
3. Most of the time it is difficult	0	0
Total	8	100
Purchasing department sends purchase order request to suppliers, and the suppliers response to purchasing department	Frequency	Percentage
1. Always match to our request	2	25.0
2. Mostly match to our request	5	62.5
3. Match to our request	1	12.5
4. Not match to our request	0	0
Total	8	100

Source: Compiled from survey data Dec., 2017

As specified above in the table, 6(75%) of the respondents said that "the electric equipment and spare parts can easily obtained from the local market the remaining 2(25%) of them are said," Most of the time, getting such items is difficult". On the second questionnaire, the supplier

response to purchasing department ordering the purchase requisition, 1(12.5%) of respondent said that "match to our request,"5(62.5%) of respondents answered that" most of the time match to our request", 2(25%) of the respondents said that "always match to our request". According to the respondents reply, EEU has a chance of purchasing supplies and the required inventory materials from local market. In addition to this on purchasing processes the suppliers can deliver the ordered request materials according to requisition. However, on interview questions and discussion with logistic and warehouse department stated that, "most of the time some electric equipment and spare parts are not available in the local market" because of that the majority of the inventory items of the company are purchased from abroad market. Due to the largeness of the company, the purchasing department is forced to purchase bulky inventory items from abroad market. Even though the company purchased inventory items from the abroad market, its price is lesser than the inland market. Even if the company bought inventory items with cheap price, sometimes it is obliged to purchase from inland market with higher price than abroad market price.

Therefore, the local purchase of inventory items cannot satisfy the company purchasing demand because of the high purchasing price incurring purchasing costs and unavailability of the required quantity.

The second result of the above table is demonstrates that the suppliers deliver the inventory items according to the purchasing department order request. Such types of transaction activities are a good practice. But, the majority respondent's response and interview discussion are contradicting to each other. However, there is a gap between purchasing departments with the logistic department.

According to Vrat (2014), the inventory item is crucial to keep on hand a physical stock in the system to protect the uncertainty because non availability of material may lead to delayance in production or project or service delivered. Keeping inventory also has an opportunity cost of "carrying "or "storage" inventory to the organization. So, the contradiction is though we want inventory, it is not easy to have inventory. These conditions make inventory management a difficult problem area in materials management. It also makes high inventory turnover ratio which can be the indicator of enviable performance.

Therefore, according the company largeness, it needs huge purchasing of inventory items, concerning the fast moving stock materials but if the local market does not satisfy as required, every activity may be fallen under problems of shortage and customer complain.

Table 8.   Part II, Inventory Purchasing Practices – Responses of Purchasing Department

The annual inventory items purchasing demand level	Frequency	Percentage
1. By collecting from work units demand	6	75.0
2. From past trend	1	12.5
3. From main warehouse	1	12.5
4. From material management	0	0
Total	8	100
A problem of defected inventory items on foreign purchase	Frequency	Percentage
1. Rarely it happens	6	75.0
2. Very rarely	2	25.0
3. Most of the time	0	0
4. Not defected	0	0
Total	8	100
Inventory items are not timely maintained	Frequency	Percentage
1. Agree	5	62.5
2. Strongly agree	3	37.5
3. Disagree	0	0
4. Strongly disagree	0	0
Total	8	100

Source: Compiled from survey data Dec., 2017

The result of the above table specifies 6(75%) of the respondents said that "by collecting the demand of the work units annually." while 1(12.5%) of the respondent said that "based on past experience" and 1(12%) of the remaining respondent said that "collects the demand from central warehouse". According to the majority conformation, the EEU annual stock purchasing items are purchased based on the demand of the work units.

According to Sharma (2006) inventory management can be described as the protection of over investment and under investment in inventories, by improving on the main necessary operational activities. Determination of the right level of investment in inventories, consistent with production operation schedules and prompt services, is the activities of inventory management. But according to the majority conformation, the EEU trend of annual stock purchasing items are based on the request of work units, this points that the EEU material management not has a mechanism to know the level of inventory maintenance.

On discussion of interview, the logistic and warehouse department described the process of purchasing items demand collections that are as follows; collecting of quantity on hand of fast moving items report from the central warehouse every week. Then this report sends to the user department which is named as distribution department. After distribution department received the report analysis data and prepare the request to maintain stock items, if it is necessary for the department can request the new extra items. In addition to the discussion regarding their requisition the re-checking of the stock data is to protect the purchasing of excess and idle stock. Their "answer is not cheeked" then the department practices direct the purchasing activity.

On other hand on the discussion held with central store department, saying that, most of the time excess stock, slow moving and idle stock items are purchased without department request.

According to the above response and interview discussion, due to lack of mechanism to set the level of stock and lack of computer technology the company inventory items being bulky they cannot replenish on time. Their current trend of the company stock maintenance is based on the user department requisition without choking the balance of stock on hand.

Therefore, there are gaps between the central warehouse and purchasing department. These gaps are- lack of exchange of information between each other, they don't apply policies and procedures of purchasing of inventory items. The problems implies that the inventory items are exposed to idle stock, obsolete stock, excess stock and it also declines the customer service performance.

The second questionnaire raised question on a problem of defective inventory items on foreign purchase. Hence, 6(75%) of respondent agrees on practice of foreign purchase "rarely happens the defecated materials". The 2(25%) of them said that "it happens very rarely". According to the majority answers, EEU have a problem on practicing of foreign purchasing in getting the opportunity of defective inventory items. On interview discussion this problem is mentioned as it could be solved by contract agreement. In the process of foreign purchase, the contract agreement is dealing with the best risk assurance. Because, if the problem happens to the buyer, it can have a chance to return the defective materials or it can get compensation.

Respondents respond the questionnaire, of "stock maintenance is not timely done", 5(62.5%) of respondents agree that inventory items is not timely maintained, the others 3(37.5%) respondents strongly agree as it is " not timely minted". These indicate that the company has a shortage of stock items to perform the service rendering activity. The interview discussion, implies that, purchasing of inventory from abroad sometimes take a long time to import due to lack of foreign currency such problems occurs the gaps on the company's service activities .

Therefore, this shows that EEU material management can't timely determine what type of items do they purchase?, how much and when do they purchase? Such and the like questions are not exercised well in the company.

Table 9,   Part II, Inventory Purchasing Practices – Responses of Purchasing Department

Variables	Highly	Moderately	minimally	Not any problem	Total percentage
Delayance of long process to authorize by top management purchase request.	0	100.0	0	0	100.0
Delayance on finance department in process of preparing the payment of suppliers affect purchase department.	12.5	75.0	12.5	0	100.0

Delayance of receiving inventory of central store affects purchasing department activities.	0	12.5	87.5	0	100.0
Total respondent					8

Source: Compiled from survey data Dec., 2017

With regarding of long process of purchasing system to authorize the top management the degree of delayance, to processes are evaluated by 8(100%) of the respondents are agree on" moderate "/neither fast nor late/,

On the delayance of the finance department to process the payment of purchasing items to supplier. The 6(75%) of the respondents are agreed on "moderate time", 1(12.5%) of the respondents are agreed on "high time", the remaining of 1(12.5%) of respondents are agreed on minimum time. And also for delayance on receiving process 7 (87.5%) of the respondent agreed on a minimum time taking the other 1(12.5%) agrees with moderate time. This indicates that on the inventory purchases processes and on receiving processes area not shown any problem.

Therefore, In EEU on purchasing processes no bureaucratic procurement procedures problem and also purchaser without any delayance received the purchased inventory items .This is the good practice of the company.

Therefore, EEU has a good inventory receiving processes .this practices shows the strength part of the company.

4.3. Inventory Receiving and Handling Practices of EEU

Inventory material receiving at the right condition and handling system design is taking into consideration for cost minimization. Material handling approach is most important activities in many conditions since, material handling can add a value for organization; it is typically difficult to measure and enumerate the benefits included with material handling. But the material handling cost is much easier to measure the cost Heragu(2009). Material handling in good condition is in other way it is a benefit to the company and it is one aspect of inventory managing activity. In case of EEU to understand the receiving and handling practices of the

company, the researcher made interview discussion and raised some questionnaires .The collected respondent responses shown in the following tables.

Table 10. Part III, Inventory Receiving and Handling System – Responses of Warehouse Employees

The purchasing department sends the necessary document to warehouse for receiving activity	Frequency	Percentage
1. They send sometimes	0	0
2. They send but lately	9	45.0
3. They send always	11	55.0
Total	20	100.0
Receiving inventory materials delayance in case of inspection	Frequency	Percentage
1. Has no any delayance	9	45.0
2. Minimally	9	45.0
3. Moderately	2	10.0
Total	20	100.0
The occurrence of defective inventory materials probability on receiving activities	Frequency	Percentage
1. Sometimes	17	85.0
2. Mostly	3	15.0
3. Total	20	100

Source: Compiled from survey data Dec., 2017

The result of the above table indicates that, 11(55%) of respondent said that "always purchasing department send us the necessary document". the others 9(45%) of said that "they send lately". With regarding inspection for which necessarily need inspection materials on receiving activity raised a questionnaire, if there is any delayance of inspection document, the respondent responses 2(10%) of the respondent said that" take a medium time", 9(45%) of them said take a minimum time ,the others 9(45%) of the respondents "are not take a time" .On the issue of receiving processes the occurrence of getting the defective inventory materials question is

3(15%) of the respondent responses that "it happens many times", the others of 17(85%) respondents said that "sometimes we got the defected materials".

According to the above responses, on processes of receiving activity, even if 11(55%) of respondents said that "the necessary receiving document send by purchasing department to warehouse on time," the others 9(45%) of respondent said that" the document send lately". This shows that there is a contradiction in between the respondents. In addition to this, on the dissection of interview the conformation described on receiving process is showing as there is no a document delayance.

Therefore, in receiving area there are some gaps which indicate a problem. Because of processing the activities of receiving inventory items without document is a big problem. Due to such activities the inventories able to exposed to theft and corruption.

In regarding to inspection the above result shows that 9(45%) of respondents said that "has a minimal problem", the others 9 (45%) said that "have no a problem of delayance." According to this result, it can conclude that problem is not this much shown on inspection delaynce.

The result of the last raised questionnaire in the above table shows that on the processes of receiving inventory materials the probability of getting defective materials is sometimes happened. According to the interview discussion, this problem is solved by contract agreement .So on this area EEU have a good practices.

Table 11. Part III, Inventory Receiving and Handling System – Responses of Warehouse Employees

Occurrence of Sample dissimilarity at the time of receiving activities	Frequency	Percentage
1. Sometimes it happens	15	75.0
2. Always happens	1	5.0
3. Not happen	4	20.0
4. others	0	0
Total	20	100.0
Sufficient space to handle inventory items properly	Frequency	Percentage

1. For now it is sufficient	3	15.0
2. .It is not sufficient	17	85.0
3. I have sufficient space	0	.0
Total	20	100
Inventories that is occupied more in the warehouse	Frequency	Percentage
1. Obsolete and expired items	14	70.0
2. Slow moving items	6	30.0
3. Fast moving items	0	0
4. Total	20	100

Source: Compiled from survey data Dec., 2017

As described in the above table questionnaire of the supplier deliver the sample of dissimilarity shown by 1(5%) of respondent said that "always a problem of dissimilarity is occurring", other 4(20%) of respondents said "any problem is not happen", the majority 15(75%) of respondent said that "sometimes the purchased items have a problem of dissimilarity"

Even if, 5(62.5%) of the purchasing department respondents respond on table 6 under the company purchasing practice said that "the suppliers delivered mostly much to request purchasing department" the majority of warehouse respondent on the above table confessed that sometimes the purchased items have a problem of dissimilarity.

Therefore, on the process of purchasing, clarity and transparency is the best way to avoid the corruption, because the supplier may be won by offering the quality sample but after winning the bid, he could deliver the dissimilar inventory materials. Thus, according to the above result EEU has a gap on bid purchasing process area.

As presented in the above table the questionnaire of "sufficient space to handle the inventory items in the store", 3(15%) of respondents said "for now it is sufficient", 17(85%) said not sufficient, the others 6(30%) of the respondents said that "have no any spaces". The interview discussion also indicates that the problem of spacing is the big challenging for warehouse workers activities.

These indicate that the company warehouse are occupied by full of materials. According to Samuel & Ondiek (2014), Inventory is a fundamental and the main part of asset of the any organization. It needs a serious managerial attention since it ties up a lot of organization capital.

For third questionnaire that "the most occupied type of materials," 14(70%) the respondent responses said that "obsolete and expired items," the remaining 6(30%) of the respond said that "slow moving stock items."

According to the majority response, the company warehouse is occupied by obsolete, idle materials and date expired materials which are incurring a very high storage cost to the company. Therefore, to receive and place the new fast moving items is difficult to the company warehouse.

Table 12. Part III, Inventory Receiving and Handling System –Responses of Warehouse Employees

Problem of obsolete and expired items to keep separately from active stock in order to take action.	Frequency	Percentage
1. Lack of sufficient place to separate them	13	65.0
2. Due to lack of human resource	7	35.0
Total	20	100.0
The reason of many inventory items kept outside the store	Frequency	Percentage
1. Due to lack of space in warehouse and in shelter	18	90.0
2. I don't know the reason	2	10.0
3. Not have usage	0	0.0
Total	20	100
Stock materials which kept outside the store for long time exposed to	Frequency	Percentage

damage and theft		
1. Strongly agree	12	60.0
2. Agree	8	40.0
3. Disagree	0	0
4. Strongly disagree	0	0
Total	20	100
How the warehouse is overfull due to obsolete materials	Frequency	Percentage
1. Highly	19	95.0
2. Minimally	1	5.0
3. Moderately	0	0
4. Not has any effect	0	0
Total	20	100.0

Source: Compiled from survey data Dec., 2017

As presented on the above table 13(65%) of respondent conformed that separately to place the obsolete and expired items lack of sufficient space prevents taking of an action and to handle the items separately. The others of 7(35%) respondent said that, "due to lack of human resource". they can't handle separately.

For the reason raised in the above table assures the inventory items are kept out side of the warehouse 18(90%) of the respondent confirm that the reason is due to" lack of warehouse and shelter". the remaining 2(10%) of the respondent said that, "I don't know the reason".

Third questionnaire of materials outside the store is exposed to damage and theft 8(40%) of the respondent is "agree" and 12(60%) of the respondents are "strongly agree".

The respondents responses for the last questionnaire of the reason that the warehouse is over full of obsolete materials, 19(90%) of the respondent said that "Highly over full", the remaining 1(10%) of respondent said that" minimally". In addition to the interview discussion, the company warehouse is over by full of materials. Most of them kept in and out of store for long years. For the question raised to discuss" why those items kept for long years"? For this interview discussion nobody can clearly stated about this case. But some of them said that "no

organized work unit to function this work" others said that "this work is done by disposal committee" the company disposal practices was done on disposal committee before long time But, in recent years not practiced.

Obsolete and excess inventory of firm has a cost of holding an inventory and it will be negatively affects the net cash flows of the firm. Those costs could be include capital cost,(determining opportunity) and the storage costs , insurance , taxes, spoilage, losses and other related to storage costs. The amount of other costs is based on firm decision that to take the action to excess inventory and obsolete inventory. (Jijm, 1999) . The EEU Company without any consideration simply holds the obsolete, idle, excesses inventory items.

This implies that the company is incurring high storage costs, the company huge capital is tide, the possibility of the new purchased inventory items also in problem of space can be exposed to damage and miss used. In general, the holding of obsolete material is highly the difficulty to the company performance. In addition materials kept outside of the warehouse is exposed to damaged and to theft.

4.4. Warehouse Internal Control over Inventory

An inventory control system is a system that encompasses all aspects of managing a company's inventories; purchasing, shipping, receiving, tracking, warehousing and storage, turnover, and reordering. Keitany,et.al(2014). Since the Inventory is most important part the asset of any organization that must have controlled. The activities of controlling system began from warehouse, taking a record at the time of receiving, at the time of issuing and including keeping on safe place. So, to assess the EEU warehouse inventory controlling system, for raised questionnaire the respondent responses shown on the following tables.

Table 13. Part IV, Internal Control over Inventory (A)- Responses of Warehouse employees

The way to control the excess and under level stock items	Frequency	Percentage
1. I don't have any mechanism to control	19	95.0
2. I control by bin card record	0	00
3. I have no idea about this	1	5.0

Total	20	100.0
The reason of company for purchasing of idle stock	**Frequency**	**Percentage**
1. To use in the future when the need arise	6	30.0
2. Because of lack of information	12	60.0
3. I haven't any idea about	1	5.0
4. Not clear to me	1	5.0
Total	20	100
The reason of problem on reconciliation at the end of fiscal period ,the stock /warehouse bin card /balance with stock catalogue	**Frequency**	**Percentage**
1. Finance recording error	4	20.0
2. Problem of recording in warehouse	2	10.0
3. Maybe all are the reason	14	70.0
Total	20	100

Source: Compiled from survey data Dec., 2017

On the above table pendant responses for the questionnaire of excess and under level stock control, 12(95.0%) of the respondent said that "not have any mechanism ", other respondent 1(5%) respond that "I have no idea "and also on interview discussion, the big problem of inventory controlling system in warehouse is every inventory transaction is done manually; The items of electric equipments and spare parts numbers are very large in numbers .Every warehouse are occupied by idle, obsolete and excesses inventory materials. In addition to this the employees works in warehouse has a lack of skilled and education capability. So, to control excess and under level stock is very difficult for warehouse workers.

These indicate that, for company inventory management to differentiating, the active, idle and obsolete stock materials in warehouse are very difficult. Therefore, controlling excess and under stock level is not easy to warehouse management.

For the second questionnaire in regarding of" why the company purchase idle stock" 6(30%) of respondent said that "to use on the future when the need arise", the remaining respondent 12(60%) of them are respond the reason is lack of information, 1(5%) of those answers I haven't any idea bout, the remaining 1(5%) respondent said that "not clear to me" On interview

discussion the reason to purchase the idle stock is the user department purchase requisition send directly to purchasing department, then without checking the stock purchase balance is done .This indicate that the main reason of purchasing the idle stock is inventory management warehouse data recording and handling problem.

On the above table for last questionnaire on regarding of the problem of reconciliation stock balance with catalogue 4(20%) of the respondent responses, the reason of reconciliation problem is the finance recording error. The other 2(10%) answer is "the problem of recording in warehouse "the majority of them 14(70%) said that" maybe the problem is the recording error of warehouse and finance department. The interview desiccation also indicate that on the warehouse side and finance side there are a problem of document dispatching system, the recording error on store and posting error in finance are the main reason.

According to the majority response and interview discussion the reconciliation of stock record and stock catalogue problem is the recording problem of both warehouse and finance department. Therefore, there is a gap of document collection and recording error in warehouse and finance department.

Table 14   Part IV, Internal Control over Inventory (A) – Responses of Warehouse employees

In current situation inventory control management is well organized, efficiently to perform and kept the items safe handling.	Frequency	Percentage
1. Strongly agree	0	0
2. Agree	0	0
3. Strongly disagree	13	65.0
4. Disagree	7	35.0
Total	20	100

Source: Compiled from survey data Dec., 2017

On the above table for second questionnaire regarding of current inventory management, 7(35%) of respondents disagree on the current situation of inventory management controlling system is well organized and efficiently performed and also kept the stock items handling safely; the remaining majority 13(65%)of the respondents are also strongly disagree.

Inventory control systems are the most important function of materials management and it works as the nerve centre in any organization Ramakrishna(2005). But, in EEU, According to the respondent saying, inventory management controls is not well organized and not perform efficiently to handling and to safe the inventory items. Therefore, the company material management has a big problem on managing and controlling inventory management.

Table 15. Part IV, Internal Control over Inventory (A) – Responses of Warehouse Emp.

Recording of problem on controlling the returned surplus materials from different work units and projects.	Frequency	Percentage
1. The returned items have not the required document	9	45.0
2. Most of them are not properly organized	9	45.0
3. I don't have idea about this	2	10.0
Total	20	100.0
On controlling receiving practice the material which is necessarily needs inspection approval document before receiving.	Frequency	Percentage
1. Necessarily we do this	15	75.0
2. Sometimes we processed without inspect the document	0	0
3. Sometimes we are ordered by our boss to process the receiving inventory without inspection.	5	25.0
Total	20	100

Source: Compiled from survey data Dec., 2017

According to the above table the problem of returned inventory items from project and different work units in case of surplus inventory, 9(45%) of respondents said that "the returned materials have no document", others 9(45%) responds most of the materials not properly organized. The remaining 2(10%) said that "I don't have idea about this. In addition on interview of central warehouse and material and property department, the main problem of returned surplus materials especially from project is not supported by any document are not have price, not organized simply deliver to warehouse and received by physical count . But in problem of lack information about those material prices cannot post to stock ledger and not issued to use. So without recording it waits for long time that exposed the materials to theft and to obsolete.

The result shows that the returned inventory materials controlling system not well record and controlled. Most of the time the returned materials from project, is exposed to theft and to obsolete. The returned materials exposed to obsolete. Therefore, there is a gap on inventory return recording and handling system.

On the above table regarding of controlling inspection document in receiving processes, 15(75%) of the respondent said that, "before processing necessarily we cheek". the remaining of 5(25%) of them responses that sometimes we are ordered to processes without inspection document by our boss.

Even if the minority of respondent said that "sometimes we ordered to processes without inspection document", the majority of the respondent confesses that they process according to the inspection document. Therefore on receiving area the company has no a problem.

Table 16. Part IV, Internal Control over Inventory (A)- respondents of Warehouse emp.

The main problem of warehouse on ordering of the inventory items to maintain the level stock.	Frequency	Percentage
1. Lack of mechanism to know the level of stock	19	95.0
2. The problem of handling the record	1	5.0
3. Maybe all are the problem	0	0
Total	20	100.0
Types of inventory items that most of the time on problem of shortage	Frequency	Percentage
1. Fast moving items	20	100.0
2. Slow moving items	0	0
3. Not happens a shortage	0	.0
Total	20	100

Source: Compiled from survey data Dec., 2017

As shown in the above table, for questionnaire of ordering the inventory level maintain 19(95%) of the respondent said that "lack of mechanism to know the level of stock items ", the remaining of 1(5%) of the respondent respond that the problem of handling the record. In interview

discussion, the company inventory management has not any mechanism to calculate or to know the level of stock items. The warehouse record management handled manual system, also not have a practices of maintain stock items. The stock maintenance is done by user department request.

The above result indicates that the company warehouse have no any mechanism to determine the level of stocks and have no practice of this activity. According to Naliaka & Namusonge (2015), the inventory system helps the operating policies and organizational work flow for replenish and controlling materials in store. Capable management of inventory system requires an appropriate system of making the decisions to keep the track items in inventory and how much and when the order is applied. In every organization the decision on inventory based on the about facts of the balance of inventory on hand, on regard of forecasting demand information, lead time and time variation, stock cost, ordering cost and storage cost.

Therefore EEU inventory management has not any mechanism to determine the level of stock items and also not practicing maintenance of stock levels.

On the above table for questionnaire of shortage problem on stock 20(100%)of the total respondents agree that most fast moving items got a problem of shortage. The interview discussion of on this problem area , on other hand, the company warehouse very occupied by different inventory materials .However , the most important materials which is used to customer services fast moving stock items is always obtained a problem of a shortage.

This indicates that company inventory management not actively done his duty all problems is over its capacity.

 A problem of shortage of fast moving electric equipment and spare parts may be decreased the performance of the company to serve its customer.

4.5. Inventory Controlling System on Finance Department

The effects of inventory control systems on organizational performance, is the effects of lead ime. Inventory control systems are the most important function of materials management and it forms like the nerve centre in any organization Ramakrishna (2005).Since inventory is the key to

any organization to perform their activity well controlled. According to EEU activities, the inventory movement is very high and big price.. To study EEU inventory control management, for raised some question to finance department respondent responses presented in the following table

Table 17. Part IV, Internal Control over Inventory (B) -Finance Department Employees

Variables	agree	strongly agree	disagree	strongly disagree	Total percentage
Human resource power works in warehouse is well skilled and educated to manage inventory items			18.8	81.3	100.0
Human resources works on material accounts in finance department are well skilled to manage and control stock record.			75.0	25.0	100.0
EEU inventory control management practices are organized and efficiently performed, keeping and handling safely stock materials			31.3	68.8	100.0
Total respondent					16

Source: Compiled from survey data Dec., 2017

As shown in the above table, the human resources work in warehouse, 3(18.7%)0f the respondents disagreed that the human resource works in warehouse well skilled and educated to manage the inventory items as required 13(81.3%) of the majority of respondents are strongly disagree.

On the second questionnaire human resources on material accounts 12(75.0%) of the majority are disagree on human resources, in material accounts, on well skilled and on controlling the inventory management. The remaining of the respondent 4(25%) of respondents said strongly disagree.

As presented on the third questionnaire 5(31.25%) of the respondent disagree on EEU inventory controlling management practices is organized and efficiently performed, keeping and handling safely stock materials and also the majority of 11(68.8) of respondents strongly disagree.

The above result shows that, the human resources working in the warehouse have a gap of skilled knowledge and education. Similarly, the finance workers who are working in the material accounts have a gap on skilling knowledge in controlling inventory materials. The, EEU inventory control management practice is not organized and efficiently performed, keeping and handling safely stock material.

Effective inventory management gives the chance to make continues competitive advantage and improvement competitive position of companies. This leads redaction in cost of storing stock by replenishing jest sufficient inventories, the right place, right time and cost enables the right amount of needed (pandy, 2003).

Therefore, from the above result we understand that EEU have a problem on a practicing of inventory management and controlling system and also a skilled and educated human resource, this implies that a problem on service rendering activities, and also incur high inventory costs to the company.

Table 18. Part IV, Internal Control Over Inventory (B)- Finance Department Employees

Variables	very highly	high	moderate	Not affected	Total percentage
Effects on financial statement in case of difference between finance record and actual stock balance by material amount	43.8	56.3	0	0	100.0
The problem of excess inventory items affectes the company cash flow.	56.3	43.8	0	0	100.0
Total Population					16

As required in the above table, 7(43%) of respondent respond the weight of stock problem on material amount has very high effect, the remaining majority respondent 9(56%) of respondent

said that "high" effect.As it can be seen from the above table, 9(56%) of respondent believe that the problem of excess inventory items affects the company cash flow, the remaining of 7(43.7%) of the respondent believes that high effect.

The result shown in the above table that, most of the time EEU inventory account has difference in between actual stock. In the case of the gap with warehouse and finance department, that effect can be highly affected the company financial statement. On other hand the excess inventory affect the company cash flow. Because the company inventory items which is used for customer service purchased from abroad or local by high price. Therefore, holding excesses inventory items is an expense to the company.

Table 19. Part IV, Internal Control over Inventory (B)-Finance Department Employees

Problem to collect warehouse data	Frequency	Percentage
1. There is a problem of delayance	16	100.0
2. There is no any problem	0	0
3. Other	0	0
Total	16.0	100.0
The finance department manage the warehouse recorded data	Frequency	Percentage
1. Managing by computer system	16	100.0
2. Managing by manual system	0	0
Total	16	100
.The reason the finance department not get up-to-date information	Frequency	Percentage
1. Due to the warehouse data is not collected on time	3	18.8
2. Due to the collected data is not timely encoded to the system	2	12.5
3. A and B also the main reason	11	68.8
4. Not have any reason	0	0
Total	16	100

Source: Compiled from survey data Dec., 2017

As presented on the above table for first questionnaire, 16(100%) of the total respondents agree that a delayance of warehouse document to deliver to finance department.

As shown on above table on second questionnaire, 16(100%) of total respondent respond that the finance department stock data record managed by computer.

For the last questionnaire, 3(18.8%) said that, "due to warehouse data is not collected on time", others 2(12.5%) said that "due to the collected data is not timely encoded to the system", 11(68.8%) of the remaining of them said that "all the warehouse data not collect on time and due to the collected data not on time encoded to the computer system.

On interview discussion, described the material finance department that the main challenging problem on data recording on finance department is the warehouse data not on time properly dispatched, most of the time there is a delayance of one month document. In case of these cost finance can got an up-to-date inventory report.

As indicated on the above respondent the result of the finance department do not got the warehouse data properly on time that means the warehouse don't properly dispatched the document.

The second result shows that the finance department of the stock data record is managed by computer system. According to the last questionnaire respondent saying the problem of the finance department is lack of up-to-date- information is two cases the first case is the warehouse data is not timely dispatched, the second is the collected data is not encoded on time.

Inventory control rescored is essential to make buying and selling decisions. Some company control their stock by taking physical inventories at regular intervals of, monthly or quarterly. Others use a dollar inventory rescored that, what the inventory gives a rough idea of what the inventory may be from day to day in terms of dollars. If the stock is made up of thousands of items, as it is for a convenience type store, dollar control may be more practical than physical control amold(1998).

Therefore, According to the majority responses and the interview discussion, the company material management control system has a problem of getting update information. Due to the warehouse data is not properly dispatched on time, most of the time the warehouse data delay up to one month. This implies that the main controlling system is missed because, without recording information inventory management cannot control the activities of inventory.

Table 20. Part IV, Internal Control Over Inventory (B)- Finance Department Employees

The reason is that the finance department unable to record the fast moving, obsolete and expired inventory materials	Frequency	Percentage
1. The data base system is not support us	13	81.3
2. Lack of human resource	3	18.8
3. Lack of information	0	0
Total	16	100
The way to manage the fiancé department Excess and under level stock	Frequency	Percentage
1. Have no any mechanism to control	12	75.0
2. I have no idea about this	4	25.0
Total	16	100
The reason of the company purchase the idle stock	Frequency	Percentage
To use in the future when the need arise	1	6.3
Because of lack of information about the stock	11	68.8
I haven't any idea about this	4	25.0
Total	16	100

Source: Compiled from survey data Dec., 2017

As required on the above table, 13(81.3%) respondent said that the reason of lack of the up to date information about separately the data of active stock data, obsolete data, expired and idle stock list that the reason is the data base system is not support us. the remaining respondent responds 3(18.8%) of them said that "the lack of human recourse.

As presented on the above table for second questionnaire 12(75%) of the majority respondent said that "I haven't any mechanism to know the excesses and under level of stock, the remaining 4 (25. %) Of them said that "I have no idea"

On the above table the third respondents, 1(6.3%) of them respond that the purchasing of idle stock the reason is to use on future when the need arise. Other respondents said that "because of lack of information, 4(25%) of the remaining respondent said that "I haven't any idea about it". The remaining 4(25%) confesses that haven't any idea about it.

As shown on the above respondent answer and the discussion, to separately handle the data of obsolete, idle, expired and active stock data to finance is difficulty. Because, the computer system that used to control stock data is not has an accesses to differentiate the stock items according to its history. So, the computer technology is the one challenge to control the obsolete, idle and excess stock as required.

This indicates that without having the proper record information controlling and managing system of the inventory is difficult so, the company finance department inventory recording data and handling data has a big gap because the necessary data to control inventory cannot got easily, the computer technology not advanced so finance cannot get full information about inventory as required.

Table 21. Part IV, Internal Control Over Inventory (B)- Finance Department Employees

On the problem of reconciliation the total balances of the stock catalogue with balance of stock card balance.	Frequency	Percentage
1. Ledger posting error	1	6.3
2. Warehouse recording error	2	12.5
3. Maybe all are the reason	13	81.3
Total	16	100
The problem of the end year physical period reconciliation stock balance ledger and stock catalogue balance.	Frequency	Percentage
1. Finance recording error	5	31.3
2. Problem of recording in warehouse	3	18.8
3. Maybe all are the reason	8	50.0
Total	16	100.0
The main problem on recording and controlling returned materials from different work units and projects	Frequency	Percentage
1. Finance does not got a document	11	68.8
2. Not record in warehouse properly	5	31.3
3. I don't have any idea	0	0

Total	16	100

As presented on the above table, 1(6.3%) of the respondents agree that the problem is due to "ledger posting error", the other respondents 2(12.5%) of the respondents said that the difficulty is due to "warehouse recording error, "and 13(81%) of the remaining final respondents are said that the cause "may be the ledger and warehouse recording error".

As shown on the above table for questionnaire two, 5(31.3%) of the respondents agree on the problem of stock balance ledger with catalogue difference is finance recording error,3(18.8%) of the respondents said that the problem is "record error in warehouse," the remaining 8(50%)of the respondents said that problem is due to "agree with error on finance and warehouse".

As indicated in the above table, regarding controlling of inventory returned from different work unit and project 11(68%) of the majority of the respondents said that "agrees on the finance cannot obtain the document, the others 5(31.3%) of the respondents said "that not properly recorded at warehouse".

In addition to these, the interview discussion, especially at the time end of fiscal period the catalogue /that the master stock record files /on a data base system with stock cared that record by store man is not reconciled. Due to the recording problem on warehouse, wrong data encoding by data encoders and posting error by accountants. This problems affecting the closing time of inventory items,, it takes a time. And also stock catalogue/ that the detail list of stock master file balance with stock ledger /the finance recording / is not agree their balance the reason is that the store data input error and the posting error. On this area there is a big challenge at the time of closing due to it takes a time to make reconciliation. The other issue discussed especially, when projects finished their working time their surplus spare parts returned without full information that is a problem for finance to record those items with full information. Due to this, the finance cannot record to master file /catalogue /. It can only record on the warehouse stock card and on ledger by total price.

This result shows that there is the recording error on warehouse and posting error on finance department. According to Ngugi (2014) stated that Inventory management is more concerned on controlling of each stapes of inventory activities. This is practiced by involving the system of storekeeping, recording and stock control activities efficiently and economically in the store. Therefore, the controlling system of company inventory management on finance and warehouse is not give attention .Because without proper recording system it can't control the stock movement.

The results is that, at the end of fiscal closing period, stock card and stock catalogue, stock ledger and stock catalogue are not reconciled, due to the recording and posting error made on warehouse and finance department.

4.6. Inventory Revaluation and Disposal

Obsolescence cost results from deterioration of product during storage. A Prime example of obsolescence is product that ages beyond recommended sale date, such as hold and pharmaceuticals. 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, donations, or quantity destroyed. This expense is the percent of average inventory value declared obsolete each year Bowersox(2002).

And also lack of inventory revaluation is the other problem to show the true image of financial report inventory that shown on financial report have to revalue considered the inventory material condition and the market value of that period of time. The reason is to show the true value of inventory on financial statement. Concerning inventory revaluation and disposal practices of EEU for raised question the respondent responses are presented on the following tables.

Table 22. Part V, Inventory Revaluation & Disposal- Finance Department Employees

Variables	Highly	moderately	Not have any effect	Not have any idea	Total percentage
Inventory revaluation affects financial reports	62.5	37.5	0	0	100.0
Inventory revaluation affects price to be changed to customers	50.0	50.0	0	0	100.0
The effect of financial report on the reason of bulky obsolete inventory materials	100	0	0	0	100.0
Company stock and storage cost affected in case of bulky obsolete stock handling	93.7	6.3	0	0	100.0
A problem of physical count in case of handling occupied obsolete materials.	87.5	0	12.5	0	100.0
Total respondent					16

Source: Compiled from survey data Dec., 2017

As presented in the above table for questionnaire one, 10(62.50%) of the respondent agreed that not practicing inventory revaluation has highly affected the company financial report, 6(37.50) of respondents agreed that it has a medium effect.

As on the above table the Questionnaire indicates, 8(50%) of the respondents agrees on not practicing inventory revaluation has effect on stock price, the remaining of 8(50%) agree the "price of stock affected moderately".

 This shows that EEU has a huge amount idle and obsolete Investors, since the inventory revaluation is done the stock price shows the historical price that may highly affect their financial report. According to, **Gottwald (2011)** defines this value as the „justified price", which expresses the real value of a stock. Ideally stock should have this price. The estimated intrinsic value of a stock belongs among basic aims of fundamental analysis. Investors usually buy undervalued stock, because stock price will usually rise in the future. They also usually sell

overvalued stock, which price will usually fall in the future. Fundamental analysis assumes that under valuated and over valuated stocks exist on the capital markets. In other words, stock price can be different from its intrinsic value, in the practice.

Therefore, lack of inventory revaluation, affects company financial statement that means the true value of stock price on the financial is not seen. The price of stock that to be charged to customers, is also affected.

As it can be seen from the above table 21, questionnaire three, 16(100%) total respondent agree with bulk obsolete inventory high effect on company financial statement.

On fourth questionnaire, 15(93.7%) of the respondent respond bulk obsolete inventory high storage and wage cost incurred to company, the remaining 1(6.3%) agrees incurred medium cost to company.

On fifth questionnaire 14(87.5%) of majority respondent agrees on the bulk obsolete stock occupied in store a high effect for physical stock counting activity, the remaining 2(12.5%) is said that " not have any effect"

The result of those respondent interview discussion shows that, company inventory big amount of materials are very occupied by full of materials which are obsolete, idle and excess inventory. Due to holding the large number of items and priced, the company financial statement report included those items that affect financial statement .And also company incurred high storage cost. At the time of physical count those occupied bulky obsolete items is take a time to count that implies the duration of closing time to be long, to count those bulky materials needs additional man power.

Therefore, the bulky obsolete materials affect the company financial statement, incurring high storage costs, those occupied items taking a physical count is more complicated and difficulty.

Table 23. Part V, Inventory Revaluation & Disposal-Finance Department Employees

The reason that a company not practicing a disposing obsolete inventory materials	Frequency	Percentage
1. there is no organized work units to do these	14	87.5
2. lack of skilled human resources	2	12.5
3. Lack of policy and procedure	0	0
Total	16	100
The reason of the company that do not practicing the inventory revaluation	Frequency	Percentage
1. The largeness of stock items	11	68.8
2 . Lack of policy and procedure	5	31.3
3 Other	0	0
Total	16	100.0

Source: Compiled from survey data Dec., 2017

As presented on the above table 14(87%) of the majority respondents regarding the reason of the company that is not practicing the disposing of obsolete inventory is said that "there is no organized work unit to do this ", the 2(12.5%) of the respondents said that "lack of skilled man power".

The second questionnaire regarding to the reason, the company is not practicing the inventory revaluation, 11(68.8%) of the respondents said that due to problem of "the largeness of the stock items", 5(31.3%) the remaining respondents agree the company has no policy to revalue the inventory items.

Therefore, EEU have not organized disposal work units. It was not disposed the inventory items for long time. So the company warehouse occupied by full of obsolete materials, that implies the company is exposed to incurring high storage costs. The reason of not practicing to dispose those items is not enough to dispose. The two reasons which are not enabling the company dispose the unwanted inventory items are of policy and procedures.

4.7. Interview Discussion

4.7.1. How to use the inventory Items

The discussion on this issue is about the inventory items that are purchased at the purchasing department centrally to depose at the central warehouse of the company. According to the approval of distribution department, the central warehouse distributes to all fifteen regions. On current situation, the central warehouse is occupied by full of electric equipment, spare parts with thrown items outside the store without any shelter. But on the other hand, due to unavailability of materials many customers are waiting to get services from the company. But all materials occupied in stores and outside of the store is not being functional. Most of them are deposited being obsolete, idle, slow moving inventory items.

Therefore, most of the inventory items purchased without any movement but stocked in warehouse for a long time. Thus, it is incurring high cost to the company occupying the space found in the store as well as outside the store. Beside this, the new purchased items have no space to place in the store due to the obsolete items were occupied the place. This implies that, the new purchased items could be exposed to miss used and damaged due to lack of a proper place for the items.

4.7.2. The impacts of Inventory Management

The selected Retail Business department is the company's overall customer management representative department. This department information is the relevant for this study enabling to know the impact of inventory management problem how the effect of the impact can be seen on the result of the service render performance.

Based on the above idea, the interviewee replied that the main obstacle of the department work performance is the unavailability of the required materials which enables to provide services to the customers. Because of this problem, the new applicant customers waited for a long time to get electric power supply. In addition to this, The Retail Business Department report of the year (2015) assures that the total registered customers on the waiting list shows 140,587 number of

customers. This is taken as a sample to understand how the unavailability of materials is affecting their department customer service rendering performance.

According to the structure, the company is classified in to fifteen regions of customer key accounts. Addis Ababa region customer key accounts represent four of the fifteen organized regions customer key accounts. These four regions entertain the customer in a similar ways. Therefore, they are rendering the service to customer in serving the new applicant, additional power request customers and customer management service .Based on these, the interviewees discussed as the challenges of the region is unavailability of the different materials in different times to satisfy the customers demand. For the reason that, the customer key account is obliged to register the service desire customers on the waiting list. For that reason, the EEU inventory management system is highly affecting the customer service department performance.

CHAPTER FIVE: SUMMARY, CONCLUSIONS AND RECOMMENDIATIONS

This study was conducted to assess the inventory management in the case of Ethiopia Electric Utility on the basis of the findings discussed earlier, the summary, conclusions and recommendations are offered below.

5.1. Summary of Major Findings

Ethiopian Electric Utility (EEU) has a chance of purchasing supplies and the required inventory materials from local market. However, most of the time some electric equipments and spare parts are not found in the local market because of that, the large quantities of the inventory items are purchased from abroad market.

The company foreign purchase activity has a great challenge to get foreign currency and taking of a long period to import the purchased inventory items. On the contrary of the above challenges, the inland market cannot satisfy the demand of the company providing the required inventory items. Beside this, the price of the local market of the inventory items is very high rather than foreign market price.

The company current trend of purchasing annual stock items and replenishment is based on the user department requisition without checking the balance of stock on hand.

There are some gaps between the central warehouse and purchasing department. These gaps are-lack of exchange of information between each other and they don't apply policies and procedures of purchasing of inventory items. Because of theses gaps the company warehouse is exposed to idle stock, excess stock and it also declines the customer service performance.

Sometimes there is a problem of dissimilarity of the purchased inventory with bid won sample purchased inventory items during receiving is taken place. Due to the suppliers exchanges the real winning sample with the fake inventory items.

Because of the warehouse is occupied with the obsolete items, idle stock items and excess stock items, the warehouse faced a problem to sort and arrange the inventory items in to their kind

which enables the company incur high storage cost. Additionally, the above problem occurs the narrowness of the place for new purchased inventory items and returned surplus inventory materials. It also results the miss used active inventories and damaging of inventory items. This uncomfortable place forced to keep the inventory items out of the store without any shelter. Even if such many problems are occurring in the warehouse activities, the company hasn't shows any activity to solve the difficulties.

The warehouse material recording is managing by manual system without using computer technology. Due to this problem, there is no updated information accurately and timely in the warehouse and not have any controlling system to control the excess and idle stock of inventory items. Beside this, there is no mechanism to set the level of stock items to request the replenishment on time but the stock maintenance is done by user department requisition.

The returned materials from projects without full information are not recorded and issued for users. So, the study obtained that there is a gap of handling and controlling system in the area of returned materials which is exposed to obsolete and theft.

The company warehouse is very occupied with different in active inventory materials .However, the most important materials which is used for customer services and fast moving stock items is always got a problem of a shortage.

The human resources work in warehouse has a gap of skilled, knowledge and education as well as, finance workers who work on material accounts has a gap on skilling knowledge in controlling inventory materials.

The company excess and idle inventory items affect the cash flow of the company. Because the company inventory items which is not fast movable but used for customer service that is purchased from abroad or local market by high price and tied up the company capital.

The company material management controlling system has a problem of getting updated information due to the warehouse data is not properly dispatched on time. The warehouse data is delaying, most of the time for a minimum of one month.

The company data base computer system that the finance department used to handle the stock materials record is very old system in addition, it is not have access to record the history of stock materials as required. Due to these problems the finance department can't get the report of excess, idle, obsolete and expired inventory items. So, lack of computer technology is the one that challenges the controlling system of the company to control the stock items as required.

At the end of fiscal closing period, the stock card with stock catalogue and stock ledger with stock catalogue are not reconciled, due to the recording and posting error made on warehouse and finance department. The returned materials are the other problems of recording among the stock catalogue, stock ledger and warehouse stock cards. These effect can be highly affects the company financial statement.

The company warehouse stores are occupied by full of inventory materials which are obsolete, idle and excess inventory. Due to holding the large number of these items with high priced, the company financial statement report not shows the true values of the inventory items. Those types of inventory items are affected the company financial statement. In addition to this, the company used weighted average cost method. Thus, due to this method, the price of the new purchased stock is affected by the old inventory price. So, the inventory that is sold to customer also affected by old price in all aspects, it could be addition or deduction to paid price.

 At the time of physical count those occupied bulky obsolete items is taken a time to count, that makes the duration long to close on time rather than close it in short period counting such bulky materials with a number of man power.

 The EEU has no organized disposal work units, but it forms disposal committees to dispose the inventory items however, it has no practiced for long time to dispose the inventory items due to the disposal work challenges the elected disposal committee members.

According to the hugeness of the company, it cannot practice the revaluation of inventory items in the absence of policy and procedures that makes the activities difficult.

Most of the company purchased inventory items not in use but it stocked in store without any movement but stocked in warehouse for a long time. Thus, it is incurring high cost to the company occupying the space found in the store as well as outside the store. Beside this, the new

purchased items have no space to place in the store due to the obsolete items were occupied the place.

The main obstacle of the customer service department work performance is the unavailability of the required materials which enables to provide services to the customers. Because of this problem, the new applicant customers waited for a long time to get electric power supply. In addition to this, The Retail Business Department report of the year (2015) assures that the total registered customers on the waiting list shows 140,587 number of customers. This is taken as a sample to understand how the unavailability of materials is affecting their department customer service rendering performance.

Based on this, the interviewees discussed as the challenges of the region is unavailability of the different materials in different times to satisfy the customers demand. For the reason that, the customer key account is obliged to register the service desire customers on the waiting list. For that reason, the EEU inventory management system is highly affecting the customer service department performance.

5.2. Conclusions

 Based on the preceding findings of the study the following conclusions were made;

Capable management of inventory system requires an appropriate system of making the decisions to keep track of items in inventory, how much and when the order is applied. In every organization the decision on inventory is based on the facts about the balance of inventory on hand, forecasting demand information, lead time and time variation, stock cost, ordering cost and shortage cost (**Naliaka** & Namusonge 2015).But according to the study finding of the company, EEU inventory management purchasing practices have a big gaps between the central warehouse and purchasing department. These gaps are lack of exchange of information between each other, most of the company purchases done without checking the stock balance, they don't apply policies and procedures of purchasing of inventory items. Because of theses gaps the company warehouse is exposed to idle stock, excess stock and it also declines the customer service performance. In addition to these, there is a delayance of purchasing document which enables to receive and prepare receiving documents. There is also a problem of dissimilarity of the

purchased inventory with bid won sample purchased inventory items to receive. Due to the supplier exchanges the real winning sample with the fake inventory items that results to practice the corruption in the activity of biding.

The company warehouse is occupied by obsolete, idle materials and expired materials which can incur high storage cost to the company. This uncomfortable place forced to keep the inventory items out of the store without any shelter. Even if such many problems are occurring in the warehouse activities, the company hasn't showing any activity to solve the difficulties. Jijm (1999) stated that, excess inventory of any company has a cost of holding an inventory and it will be negatively affects the net cash flows of the firm. Those costs could be include capital cost,(interest opportunity) and the storage costs, insurance, taxes, spoilage, losses and other related to storage costs.

Susan & Michael (2000) explained that the accuracy of inventory records is necessary to provide satisfactory customer service, determine replenishment of individual items, to ensure the material availability for an organization, analyze inventory levels and dispose of excess inventory. In contrary EEU warehouse material recording is managing by manual system without using computer technology and the company store has no controlling system to control the excess stock, under stock level and idle stock of inventory items. And also the surplus returned stock materials from projects without full information are not recorded and issued for users. So, the study obtained that as there is a gap of handling and controlling system in the area of returned materials which is exposed to obsolete and theft.

The human resources work in warehouse has a gap of skilled, knowledge and education as well as, finance workers who work on material accounts has a gap on skilling knowledge in controlling inventory materials.

Samuel & Ondiek (2014), points out that there is failure in the company inventory management system since most of them are not have capable computerized inventory system and such firms tend to have huge inventories due to poor planning. It is also difficult to compete the competent to stay in the business sector. In the case of EEU, the warehouse data does not properly dispatched as required to transmit the necessary information for finance department on time, that

causes the controlling system fallen to control the difficulties. While the finance department and stock data record is managed by computerizing system. But due to the data base system is not capable to store the necessary data; the stock record management is not supported to control the warehouse data as required.

At the end of fiscal closing period, the stock card with stock catalogue and stock ledger with stock catalogue are not reconciled, due to the recording and posting error made on warehouse and finance department. The returned materials are the other problems of recording among the stock catalogue, stock ledger and warehouse stock cards. The above problems indicate that the inventory management and controlling system have a big gap.

Inventory is part of the company assets and is always reflected in the company's balance sheet (Mohamed et.al, 2014).Since the EEU big amount of inventory materials is occupied in warehouse which is obsolete, idle and excess inventory. Due to holding of the large number of inventory items with high priced, the company financial statement report includes those items that affect the financial statement.

At the time of physical count those occupied bulky obsolete items is taken a time to count, that makes the duration long to close on time, rather than close it in short period counting such bulky materials with a number of man power.

Arooq & Agrajan (2014) described that the inventory materials hold since it is idle, the price of those materials decrease in many reasons that is a deductible cost. In EEU According to the hugeness of the company, it cannot practice the revaluation of inventory items in the absence of policy and procedures that makes the activities difficult. Those materials price is recorded at historical price. At the end of fiscal period, those materials cost shown as active stock on financial report that is not the true value of the stock it may be over stated or understated.

The company inventory items purchased without any movement but stocked in warehouse for a long time. Thus, it is incurring high storage cost to the company occupying the space found in the store as well as outside the store. This implies that, the new purchased items could be exposed to miss used and damaged due to lack of a proper place for the items.

Based on this, the interviewees discussed as the challenges of the region is unavailability of the different materials in different times to satisfy the customers demand. For the reason that, the customer key account is obliged to register the service desire customers on the waiting list. For that reason, the EEU inventory management system is highly affecting the customer service department performance.

5.3. Recommendations

Mohamed et.al (2016),stated that the role of inventory management is to maintain a desired stock level for every specific product or items, where the systems that plan and control inventory must be based on the product, customer, and the process for product that available in the inventory So that, the company purchasing department should be pay attention to improve the inventory purchase system of the company to protect the accumulating of the idle and excess stock materials which is incurring high storage cost and tying the company capital.

Material handling approach is most important activities in many conditions since, while material handling can add a value to an organization, it is typically difficult to measure and enumerate the benefits included with material handling. But the material handling cost is much easier to measure the cost (Heragu, 2009). The company logistic and warehouse department should give attention to solve the problems of inventory material handling system that shown on warehouse due to obsolete, excess and idle inventory items occupied in every warehouse and out of warehouse that is the big problem and challenge for the warehouse workers to handling the inventory items as required.

Company warehouse department should improve the inventory record handling system by practicing computer technology and supporting by skilled man power.

The company material and property finance department should pay attention for the problems that shown due to wrong recording, posting, allocation of accounts and stock numbers. Which are the main problems of the company at the year-end of fiscal period takes too long time to close the accounts and also exposed to audit comments. Sharif (2015) stated that reconcile the stock records and documents for their accuracy and usefulness, to identify areas which require more disciplined documents control, and to back up the balance sheet stock figures, a provision

for independent central stock verification team instead of departmental committees be made to verify the stocks annually. A policy of centralized stock verification is likely to result in better reconciliation of the assets as per the balance sheet and the actual assets in the stock.

The company management pays attention to the company inventory items for those necessarily requires a management decision on the area of warehouse to dispose the obsolete and idle inventories, to plan and design the new technology computerized system, revising the company policy and procedure on the area of inventory purchasing, revaluation and disposing to improve the service rendering to the company customers. Since to Naliaka & Namusonge (2015)the role of inventory management is arranging and organizing over all operation of the organization maintaining the transactions of sales appropriately keeping the level of stock to satisfy customer's needs. The achievement of inventory management is satisfying customer and driving profit by keeping the required inventory items, balancing the right order as customer needs.

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Appendix

St. Mary's University

School of Graduate Studies

Accounting and Finance Department

An Assessment of Inventory Management system

The Case of Ethiopian Electric Utility

For partial Fulfillment of the Masters Degree in Accounting and Finance

May 2017

Questionnaires for Purchasing Department Employees

THE STUDY AIMS TO:

- Assess the purchasing system of inventory items.

> **TO RESPONDANTS**: The Inventory management and internal control system study is being conducted in Ethiopian Electric Utility. Considering the importance of inventory control management to the company good performance, customer's satisfaction and also the significance of this particular study can be vital. However, the effectiveness of this questionnaires study is highly dependent up on your cooperation to provide reliable information on timely bases. Therefore, I kindly request your kind cooperation in filling out the questionnaire. I confirm you that all the information gathered will be held confidential. In case of any concern you may call by telephone number 09-11-76-17-28 Shitaye. Thank you ======

Please put (X) marks for your correct choose and fill the blank space in the items presented below.

Personal   Education Qualification

1. Sex   ☐ Female   ☐ Male   Diploma   ☐

2. Age   1st Degree   ☐
                                    ☐
18-25   ☐   26-33   2nd Degree   ☐

34-41   ☐   42and above   ☐

3. Work experience_____ year

4. Specific filed of education _____

Part II, Purchasing Practices

1. Does your department could easily get the electric equipment and spare parts from local market to stock?

   A, Yes, we can got   ☐   B, Yes, but some materials ☐
   easily got

   C, No, most of the time it is difficult ☐   D, No, we can't   ☐

2. When your department sends purchase order request to suppliers, how do the suppliers deliver the inventory items according to your request?

   A, Much to our request   ☐   B, mostly much to our re☐st

   C, rarely much to our reques☐   D, not much to our requ☐

3. How did your department get the level of inventory items to purchase annual demand of inventory items?

   A, by collecting from work units☐   B, from past trend   ☐

   C, from main warehouse   ☐   D, from materi☐
   management

   E, others _____

4. How does your department have a problem of dalliance on case of long processes to authorize the purchase order request by top management?

A, highly ☐   B, moderately ☐

C, minimally ☐   D, not any problem ☐

5. How the foreign purchased inventory items have got a problem of defect?

A, most of the time ☐   B, rarely it happens ☐

C, very rarely ☐   D, not defected ☐

6. How does a dalliance on finance department in processes of preparing the payment of suppliers affect your work?

A, highly ☐   B, moderately ☐

C, minimally ☐   D, not affected ☐

7. How does the dalliance on processes of central store receiving inventory delivery affect your work?

A, Highly ☐   B, moderately ☐

C, minimally ☐   D, not affected ☐

8. Do you agree that the purchasing of inventory items is not timely done to maintain the level of inventory items?

A, agree ☐   B, strongly agree ☐

C, disagree ☐   D, strongly disagree ☐

St. Mary's University

School of Graduate Studies

Accounting and Finance Department

An Assessment of Inventory Management system

The Case of Ethiopian Electric Utility

For partial Fulfillment of the Masters Degree in Accounting and Finance

May 2017

Questionnaires for Central and Regional Warehouse Employees

THE STUDY AIMS TO:

- Assess the purchasing system of inventory items.

- Assess the inventories receiving and handling system.

- Assess the inventories controlling system.

TO RESPONDANTS: The Inventory management and internal control system study is being conducted in Ethiopian Electric Utility. Considering the importance of inventory control management to the company good performance, customer's satisfaction and also the significance of this particular study can be vital. However, the effectiveness of this questionnaires study is highly dependent up on your cooperation to provide reliable information on timely bases. Therefore, I kindly request your kind cooperation in filling out the questionnaire. I confirm you that all the information gathered will be held confidential. In case of any concern you may call by telephone number 09-11-76-17-28 Shitaye. Thank you ======

1. Sex   ☐ Female   ☐ Male   Diploma   ☐

2. Age   1st Degree   ☐

18-25   ☐   26-33   ☐   2nd Degree   ☐

34-41   ☐   42and above   ☐

3. Work experience_____ year

4. Specific filed of education _____

Part III, Inventory Receiving and Handling System

1. How does the purchasing department practiced on sending the necessary document of purchased items to your warehouse for processing the receiving activity?

   A, always they send   ☐   B, they send but lately   ☐

   C, sometimes they send   ☐   D, not send   ☐

2. How your warehouse does a problem on dalliance of inspection to processes the receiving activity.

   A, highly   ☐   B, moderately   ☐

   C, minimally   ☐   D, not has a problem   ☐

3. How many times a defective inventory material can be seen in receiving process of your warehouse?

   A, many times   ☐   B, sometimes   ☐

   C, always   ☐   D, not happen   ☐

4. How your warehouse does have a problem on processes of receiving dissimilarity of purchased items with sample received items?

   A, sometimes it happens ☐   B, always it happens ☐

   C, not happens ☐   D, others_____

5. Do you have sufficient spaces to handle the inventory items properly in your warehouse?

   A, for now it is sufficient ☐   B, it is not sufficient ☐

   C, no, I haven't ☐   D, others_____

6. What types of inventory items mostly occupy spaces more in your warehouse?

   A, fast moving items ☐   B, obsolete and expired items ☐

   C, slow moving items ☐

   D, others _____

7. What is the main problem in your warehouse to keep the obsolete items, fast moveable and slow moveable items separately for the best handling system?

   A, Lack of sufficient place to separate them ☐, Due to lack of human resource ☐

   C, others _____

8. In your assumption, what is the main reason why many inventory items kept outside the store and shelter for long time?

   A, Due to lack of space in warehouse and in shelter ☐ B, not have a usage ☐

   C, I don't know the reason ☐, if others ☐

   _____

9. Do you agree that the stock materials which were kept out side of the stores for a long time could be exposed to damage and theft?

A, agree ☐   B, strongly agree ☐

C, disagree ☐   D, strongly disagree ☐

10. How the warehouse did sophisticate in case of handling obsolete stock items?

A, highly ☐   C, moderately ☐

C, minimally ☐   D, not has any impact ☐

Part IV, Warehouse Internal Control over Inventory (A)

1. How the Warehouse manage and control the over and under stock inventory items?

    A, not have any mechanism to control this ☐   B, I report to my work unit ☐

    C, I have no idea about this ☐   D, Other _____

2. In your assumption, why your company purchases the idle stock items?

    A, to use in the future when the need arise ☐   B, because of lack of information ☐
                                                                    ☐
    C, I haven't any idea about this ☐   not clear to me ☐

3. What is the problem on reconciliation at the end of fiscal period in between physical count (stock card balance) and computer record data (stock catalogue list)?

    A, finance recording error ☐   B, problem of recording in warehouse ☐

    C, may be all are the reason ☐   D, if others ☐

    _____

4. How do you agree that the human resource powers working in the warehouse are well skilled and educated employees to manage the inventory items as required?

    A , I agree ☐   B, I strongly agree ☐
                ☐   ☐

C, I disagree   D, I strongly disagree

5. What is the main problem on recording and controlling system on returned materials from different project areas and departme☐?

A, The return items have no the required documen☐

B, most of them are not properly organized   ☐

C, I don't have idea about this   ☐

D, if others _____

6. Do you agree that in the current situation the EEU inventory control management practices is well organized and effectively performed to manage, control inventory items to keep safely and good handling?

A, agree   ☐   B, strongly agre☐

C, disagree   ☐   D, strongly disa☐e

7. How the warehouse does practiced on receiving purchased inventory items before processing of receiving, is it cheeked the approval documents of inspection for the items which necessarily needs inspection?

A, necessarily we do this   ☐

B, sometimes we processed without inspection documen☐

C, sometimes we ordered to process without inspection ☐

D,   if others_____

8. What does the main problem of warehouse in ordering the purchase request to maintain (replenish) the inventory items?

A, lack of mechanism to know the level of stock   ☐

B, the problem of handling the record   ☐

C, may be all are the problem   ☐

D, if others _____

9. What types of Inventory materials mostly on a problem of shortage?

A, Fast moving items   ☐   B, Slow moving items   ☐

C, Not happens a shortage ☐   C, Others _____

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Part I: General information (3)

Please put (X) marks for your correct choose and fill the blank space in the items presented below.

Personal   Education Qualification

1. Sex   ☐ Female   ☐ Male   Diploma   ☐

2. Age   1st Degree   ☐

                                        ☐

34-41   ☐   42and above   ☐

3. Work experience_____ year

4. Specific filed of education _____

Part IV, Internal Control over Inventory on Finance Department (B)

Question	Agree	Strongly agree	To some extent	Disagree	Strongly disagree
V. Internal Control Over Inventory					
1. Do you agree that the human resource power working in warehouse are being well skilled and educated employees to manage the inventory items as required?					

2. Do you agree that the well skilled and educated human resources power work on material accounts in finance department to manage and control the inventory items as required?				
3. Do you agree that in the current situation, the EEU inventory control management practices is well organized, effectively performed to manage, control inventory items to keep safely and good handling?				

Question	Very High	high	Moderate	Not affected
V. Internal Control Over Inventory				
4. To what extent the problem on recording inventory stock account affect the company financial statement, if the stock price is material amount?				
5. To what extent the problem of holding excess inventory items affect the company cash flow?				

6. Is there any problem to collect the warehouse data to control the activities of inventory items?

   A, yes, there is a problem of dalliance ☐   B, No, there is no any problem ☐

   C, others _____

7. How the finance departments manage the record of warehouse data to control the inventory items?

   A, managing by manually ☐   B, managing by computer system ☐

8. What is the reason that the finance department got a problem on lack of up-to-date information about inventory items?

   A, Due to warehouse data is not collected on time ☐

   B, Due to the collected data is not timely encoded to the system ☐

   C, A and B also the main reason ☐

   D, not have any reason ☐

9. What is the finance department problem to record the fast moving, slow moving, obsolete and expired items separately to manage the controlling system?

   A, the data base system is not support us ☐   B, lack of human resource ☐

   C, lack of knowledge ☐

   D, if others _____

10. How the finance department manage and control the over and under stock inventory items?

    A, have no any mechanism to control ☐   B, I have no idea about this ☐

    C, not clear for me ☐

11. In your assumption, why your company purchases the idle stock items?

    A, to use in the future when the need arise   ☐

    B, because of lack of information about the stock   ☐

    C, I haven't any idea about this   ☐
                       ☐
    D, not cleared to me

12. What is the main problem to reconcile the total balance of the stock catalogue with the balance of stock ledger account?

    A, Ledger posting error   ☐   B, encoding data error   ☐

    C, may be all are the reason   ☐

    D, If others _____

13. What is the problem on reconciliation at the end of fiscal period in between physical count (stock card balance) and computer record data (stock catalogue list)?

    A, finance recording error   ☐   B, problem of recording in warehouse   ☐

    C, may be all are the reason   ☐

    D, if others _____

14. What is the main problem on recording and controlling system on returned materials from different project areas and departments?

    A, finance does not got a document ☐   B, not properly recorded on   ☐
warehouse

    C, I don't have idea about this   ☐
    D, if others _____

Part V, Controlling of Inventory Items Revaluation & Disposal Fin. Depart.

1. How does the company financial report affected in not practicing of inventory revaluation?

   A , highly ☐   B, moderately ☐

   C, not have any effect ☐   D, not have any idea ☐

2. How the revaluations of the inventory items affect the sales price of stock materials to customer?

   A, highly ☐   B, moderately ☐

   C, have no any effect ☐   D, have no any idea ☐

3. How the company financial report affected on case of bulky obsolete inventory items?

   A, highly ☐   B, moderately ☐

   C, have no any effect ☐   D, have no any idea ☐

4. In your assumption, why the company not disposed the obsolete inventory items?

   A, may be the company material management not give attention ☐

   B, may be due to lack of skilled man power ☐
                                                                ☐
   C, I have no idea

   D, others _____

5. In your assumption why the company did not practiced the inventory revaluation?

   A , the largeness of stock items ☐   B, have no a policy to revaluation of stock ☐

   C, others_____

6. How does the company affected by storage cost in case of bulky obsolete stock handling?

   A, highly affected ☐   B, moderately ☐

   C, not affected ☐   D, I have no idea ☐

7. How the finance department does handled a problem by taking a physical count of the obsolete materials which is sophisticated in the warehouse?

   A, highly ☐   B, moderately ☐   C, mostly not count ☐

8. How the finance department does have a problem to take a physical count in case of handled obsolete materials sophistication in warehouse?

   A, highly ☐   B, moderately ☐   C, not have any impact ☐

9. In your assumption, what is the reason that the company did not disposed the obsolete inventory items?

   A, there is no organized work units to do these ☐

   B, lack of skilled human resources ☐

   C, lack of procedure ☐
   ☐

   D, I don't know their reason

   E, others _____

Interview for Different Department

I. The way of purchasing inventory items

To Logistic and Warehouse Head/Purchasing Dpt. /

9. Describe how to determine the level of order and the processes of purchasing and ordering inventory item? Describe also the controlling system on delivery process.
10. Does the company inventory purchase according to plan and budget?
11. Is there a long bureaucracy related to purchase difficulty? If your answer yes, what are the causes of these long bureaucratic purchase difficulties?
12. Is there any problem in purchasing of local and abroad?
13. Does the purchasing department have a mechanism to know the up to date information of inventory balance?
14. What is the big challenge on inventory purchasing system?
15. Most of the time what type of inventory material does you purchases?

II. Inventory Receiving and Handling/Controlling system
Central Warehouse Head
A. Handling & receiving

11. Describe the current situation of warehouse inventory handling system? what is the big challenge
12. How to treat the obsolete, damage, and expired inventory items?   Is there any trained to disposed it?
13. What is the problem on receiving?

B. Controlling

1. What is the big challenging to managing and controlling inventory items?
2. How to control the movement of inventory items?

3. How your department does maintain the level of inventory items and at what time?

4. Does every purchasing inventory items purchased according to your department request?

5. What is the big challenge on managing and controlling inventory items?

III. Inventory Control, Revaluation and Disposal of Obsolete inventory

To Material and Property Head /Finance/

1. What is the company mechanisms used to manage controlling inventory recording system?

2. What is the problem challenged your department on practicing of inventory physical count process?

3. What is the reason on not practicing the disposing obsolete materials?

4. What is the mechanism do you used to control the return materials from project and from different work units?

5. Do you believe that the existing inventory management system of EEU provides Up to date information regarding each type of stock movement in each regional store?

6. What are the main problems that encounter in the existing inventory and warehouse management system of EEU?

IV. Usage of Inventory Items

To Retail Business Head and Customers' key Account Head

1. What does your department problem on delivering inventory items that used for customer services?

2. How does the company treat the new applicant customers, when a problem on availability of inventory material items?

3. Is there any problem on quality of materials in usage?

4. What is a problem on balancing the demand and supply of customer service?

5. What is the main problem on availability of materials in your department to force to record many customers on waiting list rather than giving the service to customer?

6. Does your department ask or report the inventory items demand to the responsible work unit according to your plan and budget to fill the level of inventory items?

7. On current situation do you believe that the company rendering sufficient and efficient service to its customer? If no or yes, give description and reason.

8. What is the big challenge on rendering services to customer especially on the area of materials?