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SAINT MARY'S UNIVERSITY SCHOOL OF GRADUATE STUDIES

**INVENTORY MANAGEMENT PRACTICES OF ANBASSA
CITY BUS SERVICE ENTERPRISE**

BY: Aschalew Tsegaye

ADVISOR: Asmamaw Getie (Ass. Prof.)

JUNE, 2016

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A Thesis Submitted to the School of Graduate Studies of Saint Mary's university in Partial Fulfillment of the Requirements for the Masters of Business Administration in the Department of Accounting and Finance.

ADDIS ABABA, ETHIOPIA

JUNE, 2016

I, Aschalew Tsegaye Abebe, declare that; the thesis entitled, “Inventory Management Practices of Anbassa City Bus Service Enterprise.” is my original work, was not copied, has not been presented for a degree in any other university as well as in Saint Mary’s University, and all the sources of the material used have been duly acknowledged.

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Date June 22, 2016

This research report has been submitted for examination with my approval as a university advisor

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**INVENTORY MANAGEMENT PRACTICES OF ANBASSA
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BY: Aschalew Tsegaye

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Acronyms and Abbreviations

AACA	Addis Ababa City Administration
ACBSE	Anbassa City Bus Service Enterprise
EEU	Ethiopian Electric Utility
FIFO	First In First Out
JIC	Just-in-case
JIT	Just-in-time
LIFO	Last –in –First out
SI	Specific Identification

Abstract

Public enterprises are organizations established and owned by government to provide different services to the public. Among these enterprises ACBSE is an Enterprise provide transport service to Addis Ababa and its surrounding residents. Different studies indicate that the Enterprise doesn't provide quality service for its customers and they are not satisfied by its service. As per those studies, one of the reasons for this poor service provision is lack of spare parts to maintain its buses. The particular objectives that were analyzed include, assessing inventory management process and how it affects the service delivery of the Enterprise. The purpose of this study is to assess practice of inventory management in Anbassa City Bus Service Enterprise. The various factors influencing inventory management were broken into inventory carrying cost, inventory stock out cost, inventory stock record practices, stock audit practices, staff skill and experience, computerized inventory, and effective management of spare parts. The research adopted descriptive study design and purposive sampling technique. The researcher used a sample size of 47 employees from the target population to act as sample size. The research used questionnaire, interview with key informants, and observation of the researcher. The collected data were analyzed quantitatively and qualitatively. The key findings from the study revealed that: there is poor inventory management practice and utilization of spare parts which causes for stoppage of buses. According to the study, there are practices of over and out of stock, wrong, and obsolete spare parts that eventually increase carrying costs. The study also revealed that unavailability of fully computerized system of inventory controlling, lack of up to date recording of inventories, lack of adequately trained staff, there is weak communication among warehouses about excess and shortage of spare parts, lack of using scientific and preventive approaches to maintain the buses and utilize spare parts efficiently. The researcher recommends that ACBSE has to support its activities with Information Technology, train employees in inventory processing department to modernize services, prepare up to date manuals, give concentration to efficient utilization of spare parts, recording history sheets for each buses and using information for decision making, disposing the accumulated obsolete spare parts to decrease its carrying cost, and the Technique department has to focus on preventive maintenance approach to minimize consumption of spare parts.

CHAPTER ONE

1. INTRODUCTION

1.1 Background of the Study

Inventories are vital to the successful functioning of manufacturing and retailing organizations. They may consist of raw materials, work-in-progress, spare parts/consumables, and finished goods. It is not necessary that an organization has all these inventory classes. But, whatever may be the inventory items, they need efficient management as, generally, a substantial share of its funds is invested in them (Vohra, 2008). In some cases people try to use inventory and stock interchangeably, but the scope of inventory management is broader than stock. Basically inventory management can be defined as the “management of materials in motion *and* at rest” (Coyle et al., 2003). The following activities fall within the range of inventory management (Miller, 2010): control of lead times, carrying costs of inventory, asset management, inventory forecasting, inventory valuation, inventory visibility, future inventory price forecasting, physical inventory, available physical space for inventory, quality management, replenishment, returns and defective goods and demand forecasting.

A management that can't plan and decide strategically could fail to run an enterprise in the right direction regarding with inventory management. Whether it is a private or public sector, the acquisition, storage, issuance, and usage of stock is crucial in running operations of the business (Wilding, 2003). Inventory management basically serves two main goals (Reid & Sanders, 2007). First of all good inventory management is responsible for the availability of goods. It is important for running operations that the required materials are present in the right quantities, right quality and at the right time in order to deliver a specific level of service. The second goal is to achieve this service level against optimal costs.

Inventory management is concerned basically with planning and control of materials. There must be a store, where to buy, when to buy, and how much to buy to control materials. The purpose of inventory management is to ensure uninterrupted supply of inventory at lowest possible cost for ongoing operation of business. Management has compare different cost components such as cost of supplying inventory, inventory holding costs, and costs resulting from insufficient inventory when making decision on inventory (Silva 2009).

According to Wilding (2003), inventory management is key activity which organizes the availabilities of material for the smooth ongoing operation. It coordinates purchasing, manufacturing, storing and distribution functions to meet the marketing needs and customer satisfaction. This role includes the supply of new products consumables; spare parts, obsolescent items, and all other items that help to have satisfactory operation to customers. Inventory enables a company to support customer satisfaction by making the operation with high quality.

Among these many types of inventories, spare parts are the one that are stocked to meet any eventuality regarding with maintenance of organizations' machines and vehicles. There are large numbers and variety of parts, which are to be kept in inventory. Saxena (2003), discuss about inventory management of spare parts how they are accessing, handling, and effective utilization in the organization.

To manage their inventories in proper and cost wise manner, organizations build special department or division which is responsible for inventory management and develop various procedures to follow the overall activities regarding with inventory of the organization. Based on the above assumptions of inventory management this study tries to assess the practice of Anbassa City Bus Service Enterprise (ACBSE) inventory management.

1.2 Background of the Enterprise

Anbessa City Bus Service Enterprise is the largest City Public Transportation Company in Ethiopia established immediately after the Italian invasion in 1943 by collecting old vehicles and garage equipment from the invader. At the time its name was Public Transport and guided by Italians and other foreigners. In 1952, it was organized in to a share company by getting legal entity from the government. At that particular year the enterprise had only 10 buses to serve the people of Addis Ababa in four routes. In 1956 the enterprise bought 20 Mercedes model buses and increased its routes to 14. The management also shifted from foreigners to Ethiopians in the same year. In 1973 the enterprise bought 50 city buses and strengthened its transportation service and in 1974 the enterprise ownership transferred from Share Company to the government (ACBSE, 2013).

According to the FDRE Negarit Gazeta proclamation NO. 187/94 the enterprise reorganized by paid up capital of birr 14 million and got its current name Anbassa City Bus Service Enterprise. Currently, number of residents of Addis Ababa increased tremendously. The city is under a

process of huge development and this needs fast and modern mass transport system. To fulfill this need of transport ACBSE has bought number of buses from local and foreign markets. Addis Ababa City Administration (AACCA) bought 550 rigid and articulated Bishoftu buses for the enterprise and the enterprise has around 320 functional old DAF buses which are bought before 19 years. By using the aforementioned number of buses the enterprise gives transportation services for more than five hundred twenty thousand people per day through 122 routes in Addis Ababa and its surrounding. To maintain these buses functional and providing the service properly the enterprise bought and occupied huge amount of spare parts and materials from local and foreign markets. Managing these inventories from acquisition up to disposition has its own process and challenges. This study focused on assessment of the inventory management practice of ACBSE.

1.3 Statement of the Problem

The essence of urban planning is to provide adequate and equitable services to all groups. One of the important urban services is transport services (Murray et al. 1998). These days the dominant mode of public transport in developing countries is the ‘conventional’ bus. It has wider social and environmental benefits. It is the only one affordable to the urban poor (Armstrong-Wright et al. 1987). It is the most flexible as it satisfies high short distance mobility demands. It needs less investment on infrastructure. It is feasible economically to all groups and environment friendly system. Vikash (2003) reckons how people can trade off between owning a vehicle and good quality public transport as: “most people in a city are better off if they access vehicles rather than own them.”

The urban transport sector, however, has many problems in most developing countries. Inadequate and poor quality infrastructures, mismatch between demand and supply, and increase rate of accidents are some of the problems (TranSafety 1998). Among these problems the mismatch between demand and supply may happen in different causes.

ACBSE, which is the study area of this research, is in charge of inefficiency to fulfill demand for transport of its customers (Demelash, 2007 and Aschalew, 2015). These two researches were done at different times for their Masters Degree focusing on ACBSE’s performance of service delivery and customer satisfaction. The first research was done by taking 500 customers sample respondents through questionnaire and asking officials of the Enterprise through interview and

the second one was done by taking 100 passengers and 108 employees of the Enterprise as a sample size to assess level of customers' satisfaction. The result of these studies indicates that customers are not satisfied by service of the Enterprise because its buses are not available timely. According to employees and managers of the Enterprise there is a problem to supply their buses in full capacity.

Generally, the result of those studies point out that one of the reasons for the poor performance of the Enterprise is shortage of spare parts to maintain its buses and supplying them to serve customers. Even if findings of these studies indicate that there is shortage of spare parts, annual reports of the Enterprise point out that it purchased in hundred million Birrs per year different spare parts and currently it has around 260 million Birr cost spare parts in the stock (ACBSE Annual Report, 2015/2016).

The researcher tried to get studies made on inventories management in organizations that have the feature with ACBSE but there is no other research made on organizations which holds huge amount of spare parts and dedicated to give public transport service.

As such, this study assessed the practice of spare parts management of ACBSE which is not given concentration by other researchers and the researcher used inventories and spare parts interchangeably only for the purpose of this study. Hence the researcher investigated issues related to the following research questions.

- What does the inventory management practices of ACBSE looks like?
- How inventory management system contributing factors for poor service provision of the Enterprise?
- What are the factors that affecting inventory management?
- What is the level of management awareness about spare parts shortage of the Enterprise?
- What is the level of management awareness about spare parts excess of the Enterprise ?

1.4 Objective of Study

The main purpose of this study is to assess the inventory management process of ACBSE. And the study tried to meet the following specific objectives.

- ✎ To assess inventory management practice of ACBSE.

- ✍ To assess how the inventory management process affects maintenance of buses and service delivery of the Enterprise.
- ✍ To assess factors that affect inventory management.
- ✍ To evaluate the level of management awareness about material shortage.
- ✍ To evaluate the level of management awareness about material excess in the stock.

1.5 Significance of the Study

Anbassa City Bus Service Enterprise was the target company which is intended to benefit from the results of the research. However, the result of the study can be applied in any governmental or private enterprises, which is in need to improve their inventory management. Generally, this research was done to achieve the following three significances;

- It enables ACBSE officials to have information about the status of their inventory management performance.
- ACBSE will get an opportunity to have feedback about the problems in inventory management and help to take the necessary actions.
- It will help those interested to acquire knowledge on inventory management of ACBSE.

1.6 Scope of Study

So far the enterprise has ten departments; this study takes place mainly in Purchase Support Process, Technique Core process, and Internal Audit Support Process. From these three departments, the study focus on employees who have direct interaction with spare parts management in Purchase department and utilization of it in Technique department.

1.7 Limitations of the Study

Inventory management is an issue that is the concern of all departments in the Enterprise. This study limited its scope to the assessment of inventory management practice of Anbassa City Bus Service Enterprise's the above mentioned processes employees and managers. Furthermore, since the sample is only from these places it is not large enough to represent the entire employees and managers. Therefore, the finding of this study considered as showing the practice of inventory management in ACBSE. Another study with vast target population and sample size

may be required in the further to arrive at conclusion about the inventory management of Anbassa City Bus Service Enterprise.

1.8 Organization of the Paper

The research thesis has four chapters. The first chapter deals with research preliminaries including background, statement of the problem, objectives, scope of study, methodology used and outline of the paper. In the second chapter, conceptual frame work of the study and different related literatures about inventory management is presented in a detailed manner. In the third chapter, facts and figures obtained from both primary and secondary sources are presented, discussed and analyzed. Based on the third chapter, conclusions and possible recommendations are made in the fourth chapter. The thesis also consists of other formal sections like Bibliography, Appendices, etc

CHAPTER TWO

2. REVIEW OF RELATED LITERATURE

2.1 Definition of Inventory

Different scholars defined inventories in different perspectives. The *inventory* may be defined as the physical stock of good, units or economic resources that are stored or reserved for smooth, efficient and effective functioning of business. According to Bose (2006) inventories are resources of any kind having an economic value which consists raw materials, work-in-progress, finished goods, consumables, and stores. Thus inventory control is all about planning and devising procedures to maintain an optimal level of these resources.

The other author Saxena (2009) defined inventory as an idle resource of any kind that has potential economic value and considered as locked up capital. A practical definition from the material management angle would be “item of store or materials kept in stock to meet future demands of production, repairs, maintenance, construction, etc.” Inventory is a list for goods and materials, or those goods and materials themselves, held available in stock by a business.

The other authors Monczka, et.al (2010), categorized inventories as raw materials, work-in-progress, finished goods, maintenance, repair, and operating supplies, and pipeline/in-transit. Among these, spare parts are inventories included in raw materials which help to repair machines and vehicles.

2.2 Inventory Management

Inventory management is defined as a science based art of ensuring that just enough inventory stock is held by an organization to meet demand. Inventory is the availability of any stock or resources at right quantity and quality used in an organization. An inventory management system is the set of policies that controls and monitors inventory level and determine what level should be maintained, how large orders should be made and when stock should be replenished so as to support the operation of the business (Miller, 2010).

The availability of materials whenever and wherever required activities were essential for the procurement, storage, sales, disposal or use of material can be referred to as inventory management. Individual responsible for inventory management have to know the space they have for storage and provide information when materials reach at their minimum level and utilize

available storage space resourcefully, so that available storage space is not exceeded. They have to assist the organization to decide what quantity to order, how to order and when to order so that stock is available on time and at the optimum cost (Bose, 2006).

Inventory management involves planning, organizing and controlling the flow of materials from their initial purchase unit through internal operations to the service point through distribution. Inventory constitutes one of the largest and most tangible investments of any organization which also decides their success in operation. It refers to the process of managing the stocks of finished products, semi-finished products, and raw materials by a firm. Inventory management, if done properly can bring down costs and increase the revenue of a firm (Saxena, 2009).

Inventory management covers replenishment lead time, carrying costs of inventory, inventory forecasting, inventory valuation, inventory visibility, future inventory pricing, physical inventory, available physical space for inventory, quality management, replenishment, and returns. Balancing these competing requirements leads to good inventory management system, which is an on-going process as the business needs shift and react to the wider environment (Ghosh and Kumar, 2003).

There is need for installation of a proper inventory control technique in any business organization in developing country like Ethiopia. According to Kotler (2002), inventory management refers to all the activities involved in developing and managing the inventory levels of raw materials, semi-finished materials (work-in-progress) and finished good so that adequate supplies are available and the costs of over or under stocks are low. Therefore, the basic goal of managers in one organization has to be to maintain a level of inventory that will provide optimum stock at lowest cost.

2.3 Objectives of Inventory Management

Managing inventories have significant impact on the productivity of organizations. Keth et al. (1994) stated that the major objective of inventory management and control is to inform managers how much of a good to re-order, when to re-order the good, how frequently orders should be placed and what the appropriate safety stock is, for minimizing stock outs. Thus, the overall goal of inventory is to have what is needed, and to minimize the number of times one is out of stock.

Additionally the main aim of inventory management is to ensure that organizations hold inventories at the lowest cost possible while at the same time achieving the objective of ensuring that the company has adequate and uninterrupted supplies to enhance continuity of operations (Mpwanya, 2005). A study carried out by Bhausahab & Routroy, (2010) shows that companies are keen in managing their inventory so as to reduce costs, improve the quality of service, enhance product availability, ultimately ensure customer satisfaction, and has a huge financial implication on both the customer satisfaction and financial performance of an enterprise.

There are reasons to organizations to give emphasis for their inventory management. It is known that inventory is often where the biggest costs are hidden in businesses (Harrington, 1996). According to Goor & Weijers (1998), stocks are responsible for a large part of the total working capital costs: up to about one third. This indicates that inventory costs represent a significant component of total logistics costs consequently the biggest benefits can thus be gained by reducing these costs. From the above perspective this excess capital invested in stocks is thus, from a company-perspective, a 'useless' waste of money. The second thing is that stocks are a source for risks. For example stock may catch fire, can be stolen, damaged or may decay over time. Consequently these events might influence the production process and could even cause it to stop and orders are delivered too late accordingly. So having good inventory management system helps the organization in several ways.

2.4 Reasons for Holding Inventories

Instead of buying and using any materials at the moment when they want, organizations select to hold inventories in their warehouses. Japanese companies are exemplary in materials planning and working without any inventory by using Just-in-time (JIT) or Zero-inventory method. Using this method helps organizations to avoid costs those arise from holding inventories. But there are a number of prerequisites for the success of JIT can be visualized. In uncertain demand and supply environment, JIT is not feasible. Thus, inventory management in uncertain supply environment is Just-in-case (JIC) type in which minimization of the total expected system cost becomes an important objective. Because of these unattainable features of JIT, especially in developing countries it is must to hold inventories (Vrat, 2014).

Inventories serve a number of important functions in various companies. A research made by Woldeabrha (2015) on inventory management practice of Ethiopian Electric Utility (EEU),

indicates that EEU holds inventories in its warehouses to satisfy expected demand of customers, to take advantage from bulk purchase, to allow for smooth and flexible service provision, and to guard against price increases.

2.5 Inventory Control

Eni (2001), defines inventory control as the problems of verifying the quantity, the value and the balance of the entire range of materials held in the stock, so that it would be easy and possible to give the exact quantities of materials in the store at any given time. It helps the store-keeper (or the inventory controller, as the case may be) to tell how much was ordered (requested for), how many have been used, what is remaining and when to place the next order so that the enterprises would not lack materials to work with at any point in time. Similarly, Sharma (2004), views inventory control as the means by which materials of the correct quantity and quality is made available as at when required with due regard to economy in terms of storage and costs (both ordering and working capital). He also said that inventory control is the systematic ways of locating; storing and recording of goods in such a way that desired degree of service can be made to the operation shops at minimum ultimate cost.

Kumar and Suresh (2008), argue that effective control in inventory is a must for smooth and efficient running of the production cycle with least interruption. They proceed with their argument that this is warranted by varying intervals between receiving the purchased parts and transforming them into final products. They further argue that inventory control would ensure adequate supply of products to consumers and avoid shortages and ensure timely action for replenishment. Inventory control systems may ensures smooth production and hence no stock-out.

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

Organizations that have poor performance in inventory management faced different problems. And Menon (2006), indicates that, this poor inventory control has the following symptoms: high rate of order cancelation, excessive machine downtime due to material shortage, large scale inventories written down because of price decline, distress sales, widely varying rate of inventory losses, large writing down at the time of physical inventory taking, continuous growing inventory qualities, liabilities to meet delivery schedules and even production rate.

2.6 Challenges in Inventory Control

Inventory management provides information to managers which help to make more accurate and timely decisions to manage their operations. A successful business relies on many factors, one of which is a reliable inventory management system. Managing these inventories has a number of problems that may affect a company's profits and customer service. They can cost a business more money and can lead to an excess of inventory overstock that is difficult to move. Most of these problems are usually due to poor inventory processes and out-of-date systems.

According to Deveshwar and Modi (2012), having unqualified employees in charge of inventory control who either don't have enough experience, neglectful in their job, or don't have adequate training, lack of encompassing all the aspects and factors in the company inventory planning, weakness on supervision how inventories are managed in the organization, having excessive inventory in stock or running out of stock, lack of computerized inventory system and complication of using it, and misplacing of items in wrong location within a store and others are some of problems facing inventory control.

2.7 Inventory Cost

Different authors discuss those problems facing the management during decision making are, knowing the right position when to initiate a purchase order (when to buy) and how much to buy (determine the lot size). In solving these two problems Naddor (1966) develop a model of inventory. An inventory model is a model which attempts to link up primarily the following three types of inventory-related costs. The three costs are as follows:

(a) Inventory carrying costs or holding cost – This is the estimated or imputed cost of holding or carrying a unit of material in the form of inventory for a unit period of time. It includes capital tied up costs, storage costs, service costs, and risk costs.

(b) Cost of shortage or stock out – This is the estimated or imputed opportunity cost incurred if we do not have materials in stock when the demand arises.

(c) Ordering costs – Ordering or replenishment costs are the costs of efforts put in and expenses incurred when a purchase order is initiated for procurement or replenishment of inventories. The ordering cost is quite dependent on the purchase procedures and the extent of bureaucracy and paperwork involved in the processing of a purchase order.

2.8 Valuation of Inventory

Inventories are generally valued at cost. If the purchase price of merchandise is constant on the periodic and perpetual inventory system, the issue of inventory costing would become such a simple task. Unfortunately, during any given period it is very likely that prices of merchandise vary due to one or more reasons. In such cases, there arises a problem of determining which price of a good to assign as an inventory cost (Barzandeh, 2011).

The problem inventory costing can be solved by making assumptions as to the flow of costs. Cost Flow assumptions are traditional cost allocation methods. They help to allocate prices between cost of goods sold and ending inventories. There are several methods of cost allocation:-

1. Specific Identification (SI)
2. First-in, First-out (FIFO)
3. Weighted Average Cost
4. Last –in –First out (LIFO), (Barzandeh, 2011).

Specific identification (SI):- The specific identification method can be used only when the actual cost of individual units of merchandise can be determined from the accounting records. This method is used only when the item are high cost and move relatively slowly, such as cars for an automobile dealer (Gunner and Skitmore, 1999). This indicates that a unit cost is attached to each item of inventory .Then, when an item is sold the inventory value is reduced by that specific amount.

First-in, First-out (FIFO):- The FIFO, is based on the assumption that the first merchandise purchased is the first merchandise sold, (Gunner and Skitmore, 1999).

This definition indicates that, units sold at a given period are assumed to be the first units that were placed in inventory. As a result the cost of goods sold is based on the cost of the oldest inventory items, and remaining inventory consists of newest goods.

Weighted Average Cost:- The weighted average method involves calculating the weighted average unit cost of goods for sale from inventory, and this average is then used to determine the cost of goods sold. This method results in the cost of goods sold and an ending inventory that fall somewhere between the FIFO and LIFO methods (Ashworth, 2004).

Last –in –First out (LIFO):- LIFO is among the most widely used methods of determining the cost of goods sold and valuing inventory. As the name suggests, the most recently purchased (the last in) assumed to be sold first, (Gunner and Skitmore, 1999).

The explanation indicates that, LIFO is the opposite of FIFO. This is purely an accounting convention the actual physical units sold could be either the earlier or the later unit placed in inventory, or some combination.

2.9 Inventory Policies

Organizations develop inventory policy which helps to select an inventory model. Inventory model depend upon the choice of inventory policy adopted by the organization. Inventory model can be broadly classified as single purchase decisions (static) models or repetitive purchase (dynamic) models; other major grouping could be deterministic inventory models vs. probabilistic inventory models. Further branching can be done on the basis of number of items (single vs. multiple), number of sources of supply (single vs. multiple), number of echelons (single vs. multi-echelon) and other situational variables such as quantity discounts, budget constraints, etc. According to Vrat (2014), there are three types of inventory policies in inventory management. These are described as follows:

1. Economic Order Quantity (EOQ)-Reorder Point (ROP) Policy: - Under this policy, the inventory status is continuously monitored. Whenever the inventory level falls to a predetermined level called as reorder point (ROP), a replenishment order of fixed quantity called economic order quantity (EOQ) is placed. Thus EOQ (Q) and ROP (R) are the two decision variable involved in solving the problem of how much to buy and when to buy.

2. Periodic Review Inventory Policy: - under this policy the stock status is periodically reviewed after a fixed time interval. When the review period is reached, the order is placed which is determined by the predetermined formula.

3. Optional Replenishment Policy: - This is a variant of periodic review inventory policy wherein there are two levels of inventory identified as the maximum level and the minimum level. The stock levels are periodically examined at fixed time interval. However, if the stock levels are more than the minimum level (s) at the time of review, the replenishment decision is deferred to the next review cycle, and no order is placed because the current stock is deemed to be adequate for the time being until the next review cycle.

2.10 Inventory Record

Arnold and Chapman (2001) discuss about the necessity of inventory record. According to them, the usefulness of inventory record is directly related to its accuracy. Based on the inventory record, a company determines net requirements for an item, releases orders based on material availability, and performs inventory analysis. If the records are not accurate, there will be shortage of material, disrupted schedules, late deliveries, lost sales, low productivity, and excess inventory (of the wrong things).

These three pieces of information must be accurate: part description (part number), quantity, and location. Accurate inventory records enable firms to:

- *Operate an effective materials management system.* If inventory records are inaccurate, gross-to-net calculations will be in error.
- *Maintain satisfactory customer service.* If records show the item is in inventory when it is not, any order promising it will be in error.
- *Operate effectively and efficiently.* Planners can plan, confident that the parts will be available.
- *Analyze inventory.* Any analysis of inventory is only as good as the data it is based on.

2.11 Inventory System

There are two main inventory system employed by businesses to assure the quantities of inventory on hand Arnold and Chapman (2001):-

1. The periodic inventory system and
2. The perpetual inventory system

The periodic inventory system is called periodic because the quantities of inventories are only known after physical inventories are taken at period ends, usually at the end of a year. It is more appropriate for businesses that hold large quantities of small unit cost items.

The perpetual inventory system indicates something that is continuous. Hence, the perpetual inventory procedure continually indicates (reveals) the balance of inventory. It is more appropriate for businesses that deal with small quantities of high unit cost inventories. With the help of computer technology, however, the perpetual inventory system can also be applied for larger quantities of small unit cost items. To confirm the inventory figure available from accounting records, physical inventory of items should be taken at least once during the fiscal year, Arnold and Chapman (2001).

2.12 Internal Control

Hornigren and Harrison (1992) define internal control as the organization plan and all related measures adopted by an entity to safeguard assets ensure accurate and reliable accounting records promote operational efficiency and encourage adherence to company policies. Internal control includes administrative controls and accounting controls. Administrative controls include the plan of organization methods and the procedures that help managers achieve operational efficiency and adherence to company policies. Accounting controls include the methods and procedures that safeguard assets, authorize transactions and ensure the accuracy of the financial records. Internal controls are policies and procedures established in an organization to authorize transactions in order to insure the accuracy of the financial records and to provide assurance that organizational objectives will be achieved.

Internal controls include all policies and procedures adopted by management of the entity to assist in achieving their objectives as far as practicable. The controls are aimed at aiding management in carrying on business in an orderly and efficient manner and showing transparency and accountability of any policies in such as stock controls through professional ethics and following routine practices.

Internal control over inventory is important to any business because inventory is the life blood of a merchandiser. Hornigren and Harrison (1992), argue that successful companies take great care to protect their inventory. According to them, elements of good internal control over inventory include: physical counting inventory at least once each year no matter which system is used,

maintaining efficiency purchasing, receiving and shipping procedures, storing inventory to protect it against theft damage and decay, limiting access to inventory to personnel who do not have access to the accounting records, keeping perpetual inventory records for high unit cost merchandise, purchasing inventory in economic quantities, keeping enough inventories on hand to prevent shortage situations, and not keeping to large stock piled, thus to avoid capital tied up.

2.13 Types of Warehouse

Warehouses or distribution centers are places where raw materials, semi-finished, or finished goods are stored. They include plant warehouses, regional warehouses, and local warehouses. In the case of service provider organizations, Gopalakrishnan (1994), indicates that warehouses can be classified into two kinds:

2.13.1 Centralized warehouse:

It is a store which receives materials for and issues them to all departments, divisions and production floors of the company. Such a store is only one in the company which receives materials for and issues to all who need them. The materials required for all the departments and branches are stored and issued by only one store. The followings are the main advantages of centralized stores.

- A better supervision of store is possible because the store is located under a single supervision.
- A better layout of store and its control are possible.
- Less space is occupied.
- Investment in stock is minimized.
- It is economical for storing materials.
- Safety of materials is possible according to the nature of materials.
- Trained and specialized persons can be appointed.
- Wastage of materials can be minimized, (Gopalakrishnan 1994).

2.13.2 Decentralized Warehouse:

Offer service where it is needed, resulting in the reduction of unnecessary consumption and prevent obsolescence and accumulation of surplus materials. An advantage of decentralization is that there tends to be faster decision making and an ability to adapt to the demographic area of

production. It also means that lower level managers have the opportunity to gain valuable experience and develop more fully because there is more room to grow. However a decentralized set-up costs money because the increased number of locations automatically results in increased stocks and personnel. Information handling also increases, thereby adding to the costs Gopalakrishnan (1994).

2.14 Knowledge and Skills Possessed the Staff

According to Susan and Michael (2000), people in warehouse are responsible for the distribution of inventory materials to all storage or using locations. They are also responsible for the physical security and safekeeping of materials at all stores locations and for all storekeeping activities, including material receiving, put-away, and material picking and shipping. Other responsibilities include: maintaining accurate inventory records, managing the physical layout of storehouses, including bin location assignments, determining the physical movement and distribution of material throughout the organization, receiving and storing materials, issuing stock material in response to a material request from customers, conducting cycle counts, annual physical, or both, reconciling discrepancies between cycle count and annual physical inventory, developing and operating truck and route schedules for distribution of material, and working with purchasing departments to resolve vendor-related problems with timing, quality, quantity, and delivery.

Lyson and Gillingham (2003), define training as a planned process to modify attitudes, knowledge, and skill through learning experience to achieve effective performance in an activity or range of activities. Its purpose in the work situation is to develop the abilities of the individual and to satisfy the current and future human resource needs of the organization. The author further says that employees may be trained internally on the job or externally in a college offering supply chain management courses.

Baily and Farmer (1982), argue that for the supplies function to achieve a superior supply performance, it is necessary to recruit, train and develop personnel with the capacity and motivation to do better work. Qualified staff that is competent and skilled will help the organization to achieve its goals and objectives by being efficient and effective when carrying out various functions. For an organization to succeed, qualification of the staff is a pre-requisite and must be matched with job requirement.

2.15 Computerization of Inventory Activities

Handling of bulky files manually and analyzing it for different purposes is very difficult, inconvenient, time-consuming, and involves lots of man-hours. Retrieval of information is even more difficult from manual files. Sometimes, the data and information is lost in the manual files, and decisions are taken without considering all aspects of the issue on hand. This affects quality of decision taken. Today, Computer Based Information System (CBIS) plays a very important role in handling, processing and retrieval of large data, and converting the same with ease into useful information decision making. Most of the Computer Based Information Systems are integrated information systems for material procurement, warehouse management, and inventory control (Saxena2003).

According to Conrad (n.d.), computerizing activities that are related with inventories has the following advantages and traits.

2.15.1 Advantages of Computerization

a) Speed and Efficiency

A computerized inventory management system makes everything from inputting information to taking inventory easier. Doing a hand count of inventory can take days, but with a computerized inventory management system, the same process can be done in a matter of hours.

b) Document Generation

Once the computerized inventory management system is in place, managers and workers can use it to automatically generate all kinds of documents, from purchase orders and checks to invoices and account statements. Managers can also use the system to automatically order products when they run low.

c) Timely Data

With a manual system, the data is only as accurate and up to date as the last hand count. With a computerized inventory management system, the management team can pull a report and instantly see how many units are on the floor, how many have sold and which products are selling the fastest Conrad (n.d.).

2.15.2 Traits of Computerization

a) Reliance on Technology

With a computerized inventory management system, the company is at the mercy of its technology. Outside factors like a power failure or the loss of Internet or network connectivity can render the system temporarily useless.

b) Accuracy Issues

A computerized system alone does not ensure accuracy, and the inventory data is only as good as the data entry that created it. Companies that plan to use a computerized inventory management system need to have a system in place to validate their data and check the numbers reported by the system. A select hand count or targeted audit may be necessary to ensure the integrity of the system.

c) Risk of Fraud

Any computerized system carries the risk of intrusion, and with a computerized inventory management system comes the risk of fraud as well. A dishonest vendor could hack the system to receive payment for products never delivered, or a dishonest employee could redirect checks to themselves Conrad (n.d.).

2.16 Tools of Inventory Management

According to Laysons and Farrington (2006) there are tools which are necessary to manage inventory effectively. ABC analysis, barcoding, radio frequency identification (RFID), and inventory software are among important tools that help to manage inventories. Using these tools has a significant impact on the productivity of the store. The other authors Tom Jose, et.al. (2013) suggests additional tools which helps to manage inventories like FSN items. Hereunder, there are discussions only about tools which are relevant to success of this study.

2.16.1 ABC analysis

The ABC system is a widely used classification technique to identify various items of inventory for purposes of inventory control. On the basis of unit cost involved, the various items are classified into 3 categories:

- A, consisting of items with the large investment,
- C, with relatively small investments but fairly large number of items and

- B, which stands mid-way between category A & C.

Category A needs the most rigorous control, C requires minimum attention and B deserves less attention than A but more than C Tom Jose, et.al. (2013).

2.16.2 FSN analysis

All the items in the inventory are not required at the same frequency. Some are required regularly, some occasionally and some very rarely. FSN classifies items into Fast moving, Slow moving and Non-moving Tom Jose, et.al. (2013). Under this system inventories have to be arranged based on their movement frequency.

2.16.3 Software

Numerous software programs are available, providing complete inventory and stock management systems. Such software can provide such facilities as maintaining supplier and customer databases, create picking lists and receipts, provide instantaneous stock balances and automatic reordering, barcode reading, support grouping of inventory items, remove barriers between suppliers and customers, enhance profitability and implement such approach like Just-in-Time (JIT) Laysons and Farrington (2006).

2.17 Effective Management of Spare Parts

There are many types of inventories which are delivered to customers. Among these Saxena (2003), discuss about types and factors influencing stocking of them. According to him, parts that are likely to fail and may need replacement are stocked to meet any eventuality and are therefore called 'spare parts'. There are a large number of machines, big or small, in any plant and each requires spare parts to be stocked. Thus there are large numbers and variety of parts, which are to be kept in inventory. In some cases, suppliers of the main plant and machinery supply machines that are not of their own production, but are bought by them from others. The inventory control staffs do not always know the details of such machines and their spare parts, including their source of suppliers. Often plant personnel need to look into the replacement of damaged components of these machines or another equivalent spare, which can exactly fit to the machinery. It is essential because changing the machine for damaged component is not possible for various reasons, as it may be either very costly to replace the machine or a similar machine is not available. In such situations, all those who are involved with the management of spare parts

of the machines, that is, the Store Keeper, Inventory Controller, and Purchaser join in hands in attacking the problem so that the spares are available for replacement when needed.

2.17.1 Lists of Factors Influencing Stocking of Spare Parts

The following are factors that influence stocking of spare parts stated by Saxena (2003).

a) Unpredictability Failures

Because of unpredictability of failures to inventory controllers and purchasing department, the judgment of the maintenance staff is the key factor in deciding what and how much is to be stocked and at which stage. The maintenance department has to use scientific method of planning the quantity of spare parts, rather than depending on mere judgment. This brings out the concept of average life, which can be easily determined from the historical data of past failures or replacements. Maintaining history sheets for each machine or for their important components is of great importance.

b) Failure analysis helps in working out projected requirement of spares

Failure analysis is done based on a scientific approach. And it is possible to predict the remaining expected life of the component or the machine by focusing on the predictive maintenance techniques to request the spare part.

c) Appropriate Maintenance Techniques

Having predictive maintenance approach has greatly affected the management of spare parts. If the organization used this technique appropriately there is no need to stock an item until it is required. If it is not, stoppage of machine upon failure of parts, emergency purchase of spares with a very high price, and other problems will occur.

d) Technical Evaluation of Machine Before Purchase

One of the important factors in spare parts management is the technical evaluation of the machine from the point of view of maintainability and reliability, before its selection for purchase.

e) Nearness of Service Centers and Dealer/Distribution

The risk of long down time of the machine due to non-availability of spares is no longer there if the local dealers or distributors are close to the plant, the need for keeping the spares in store is reduced.

f) Nature of Items

In case of imported spare parts, the need for storing increases due to the long time required for various import formalities and customs clearance procedures and transportation system create delays.

The other factors are administrative and financial factors. Administrative factors consists organization structure, procedure followed, inventory controls, and others and the financial factors are economic costs that arise from inventory, obsolescence of spare parts, and others.

2.18 Conceptual Framework

The conceptual framework includes independent variables identified as inventory carrying cost, inventory stock out cost, inventory stock record practices, stock audit practices, staff skill and experience, computerized inventory, and effective management of spare parts control as dependent variable. The problem under investigation was inventory control as affected by the identified independent variables. Inventory control is shown on the right side while the independent variables are shown on the left hand in figure 2.1.

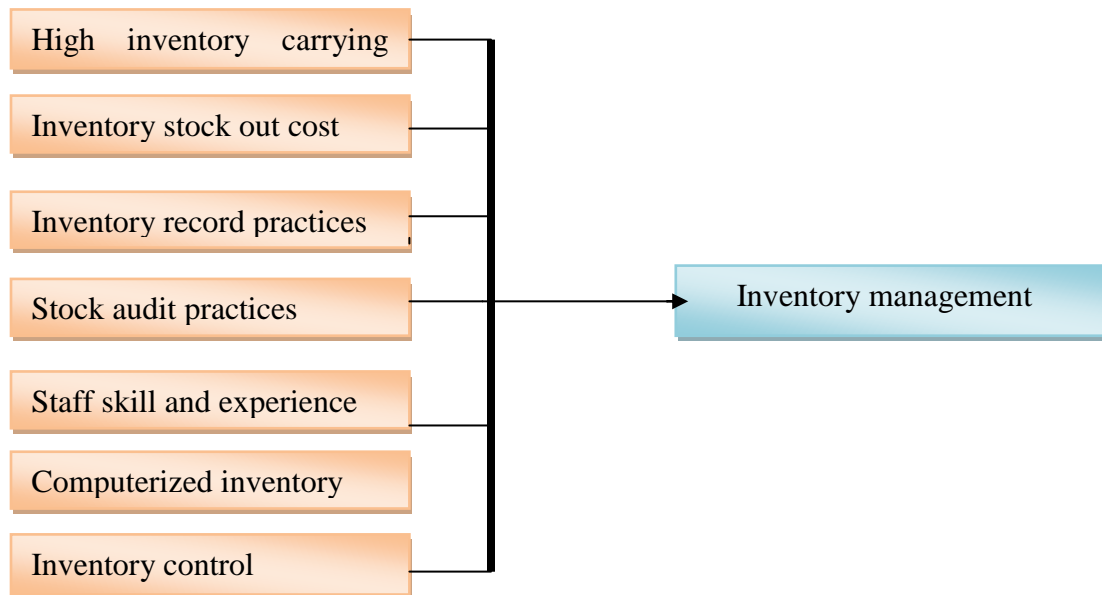


Figure 2.1 Conceptual framework of inventory management

Source: (Author, April, 2016)

2.19 Summary of Literature Review

Different authors advocate that the main objective of inventory management is to have what is needed with a lowest cost and to minimize the number of times being out of stock. As can be seen in the literature review part having effective inventory management includes planning, organizing, and controlling the flow and utilization of materials. If a company maintains good system to manage its inventory, it can provide services to customers properly and customers will satisfy by its services. Spare parts are type of inventories which helps the manufacturing or service provider company to maintain its machineries life. Lack of necessary spare parts in stock to use as it is needed lead the company to stoppage of its machineries production or service provision which affects customers' satisfaction and its productivity. Since the inventory management is highly interrelated the above objective function can be achieved indirectly by customizing activities of inventory scientifically. For enterprises involved in public transport service, spare parts are the major inputs which help to maintain its buses. To avoid shortage and excess of spare parts technicians of the enterprise, store keepers, inventory controllers, and purchasers have to join hand in hand and work together in attacking these problems so spare are available for replacement when needed, could maintain its buses and satisfying customers by providing good transport service. Findings of other study Woldeabreha (2015), made on inventories management indicates that there is a problem a problem of managing inventories in governmentally owned public enterprises. But this research aimed at assessing inventory management practice, factors that affecting the managing process, identifying sources of problems, and recommending possible suggestions to solve the real problem of inventory management in Transportation Company by considering different constraints and assumptions.

CHAPTER THREE

3. Research Methodology

3.1 Research Design

The study has been conducted with the descriptive type of research method. This method has the power to describe the state of problem raised. Since the intention of the study is to assess the present practice of ACBSE inventory management, using descriptive method is more appropriate than other type of research methods because it helps to state things flexibly. Moreover descriptive method helps to describe the qualitative and quantitative data which was collected to answer the research questions.

3.2 Source of Data

The research was conducted by using primary and secondary source of data. Primary data was collected from employees and officials in Purchase Support Process, Technique Core Process, and Internal Audit Support process of the enterprise and secondary data was collected from annual reports and different documents used in Purchase and Technique departments of the Enterprise.

3.3 Data Collection Tools

The data collection tools to gather primary data employed in conducting this study was questionnaire, interview and observation. Questionnaires was prepared and distributed to employees in Purchase and Technique departments. The questionnaires consisted both close-ended and open-ended questions. Semi structured interview questions were also prepared for process owners of these three departments. And there was observation employed by the researcher by the researcher to gather secondary data.

3.4 Sampling Techniques and Sample Size

A) Study Area

Currently, there is huge need for public transport service in Addis Ababa. To fulfill this need there are five public and private enterprises; Anbassa City Bus Service Enterprise, Alliance Public Transport, Public Service Transport, Addis Ababa Light Rail Transit, and the new comer Sheger Transport involved in public transport service provision. Among these enterprises ACBSE was selected to conduct this case study on its inventory management practice because it

is the largest and oldest (the rest four enterprises established with in these three years) enterprise. ACBSE takes a lion share to give public transport service for Addis Ababa and its surrounding residents than others. ACBSE has eight supports and two core processes with 3900 employees working in them. Among these, Purchase Support Process and Technique Core Process have a great involvement in spare parts management of the Enterprise.

So to gather information about the practices and shortcomings of the spare parts management it is relevant to involve Purchase and Technique departments employees and managers who are working in three depots of the Enterprise as a source of information. Additionally, Internal Audit Support Process Owner was included to obtain data to the study.

B. Target Population

Target population of the study was Purchase Support Process employees and managers and the rest two departments, Technique Core process, Internal Audit Support Process and Finance Support Process owners and case team leaders because they are the right persons to get information about the inventory management practices and challenges than others in the Enterprise.

C. Sampling Procedure

The information that the researcher got from Human Resource department indicates that there are 66 employees, four case team leaders, and one process owner in Purchase Support Process. In addition to this the Technique Core Process has 14 case team leaders, three Version Leaders, and one process owner. The rest, Internal Audit Support Process Owner were the key informants for the study. In line with this explanation, the researcher set up samples.

Based on the above information, to get reliable and adequate data about practice of inventory management, especially how spare parts are managed in the Enterprise, 26 employees who have direct interaction with spare parts warehouses management, and four case team leaders was involved in the study through questionnaire. To find out information about mismatch of demand and supply of spare parts questionnaires were prepared and distributed to all version and case team leaders of Technique Core Process. These leaders involved from identifying demand of spares before purchase up to utilization of it. Generally, two types of questionnaires were prepared by the researcher to gather information from Purchase and Technique departments independently and the total sample size of respondents to gather data through questionnaire was

47 (30 from Purchase Process and 17 from Technique Core Process) and semi structured interview designed by the researcher was done with the above stated three process owners, observation was done by the researcher and finally annual report of the Enterprise was used to collect secondary data.

3.5 Data Presentation and Analysis

The method of data analysis had been mainly descriptive type and the analysis handled in a way that each issue included in the study was addressed. Both qualitative and quantitative descriptions had been applied. Data entry and analysis of the sample was made by the researcher with the help of statistical tools such as simple frequency tables and mean. To find the mean the researcher graded responses of respondents from one up to five (one represents the bad situation, three represents the average, and five represents the best situation), and add up the multiple result of respondents and the given graded number for the situation, and divided by the total number of respondents.

CHAPTER FOUR

4. DATA PRESENTATION AND ANALYSIS

In this part of the paper, the researcher attempts to present the facts about the inventory management with data collected from employees, management and secondary sources like annual plan and report of the Enterprise by using tools mentioned in the methodology part of chapter one. The same data have been analyzed in Tabular forms. The data gathered from respondents is presented and analyzed by categorizing questions based on their nature to answer the research questions. After presentation and analysis of purchase department employees' responses which is collected through questionnaire, then followed responses of technique case team and version leaders and process owners presented subsequently.

4.1 Data Analysis Based on Purchase Department Employees Responses

4.1.1 General Information about Respondents

Information which is relevant to the accomplishment of the study was collected through questionnaires, interview and archives of the Enterprise. The facts about number of questionnaires distributed and returned their sex, and categories of age for purchase department employees presented hereunder.

Table 4.1 Number of Questionnaires Distributed and Returned to Purchase Department

Respondents	Number of distributed Questionnaires	Number of returned Questionnaires	Percent
Employees in Purchase department	30	30	100

Source: Field Survey, April, 2016

A total of 30 questionnaires (for Purchase Department employees) were distributed. All of the questionnaires were filled and returned to the researcher.

Table 4.2 Educational Level of Respondents

Item	Frequency	Percent
Below grade 12	3	10
12 complete	12	40
Certificate	4	13
Diploma	7	24
Degree	4	13
Total	30	100

Source: Field Survey, April, 2016

As it can be seen in the above table 4.2 out of 30 respondent employees 12 (40%) of the respondents are completed grade twelve, 7(24%) are diploma holders, 4(13%) have certificate, and the other 4(13%) and 3(10%) are degree holders and below grade 12 respectively.

In our country case to get knowledge in specific area at least someone has to learn up to certificate program, but answer of respondents indicates that most of them qualification is below certificate and this shows that the purchase department is partially staffed with employees who have not knowledge about inventory management. This lack of knowledgeable employees in purchase department may affect the inventory control process.

Table.4.3. Duration of Employees in the Enterprise and Purchase Department

In the Enterprise			In Purchase Department		
Item	Frequency	Percent	Item	Frequency	Percent
Below 5 years	6	20	Below 2 years	9	30
6-10 years	1	4	3-5 years	11	37
11-15 years	5	16	6-10 years	6	20
Above 15 years	18	60	11-15 years	0	0
			Above 15 years	4	13
Total	30	100	Total	30	100

Source: Field Survey, August, 2016

To get precise information from employees about the overall aspects of inventory management, the time of waiting being as an employee in the Enterprise and in the department which inventory is managed is necessary. Working large number of years within the Enterprise and specific department gives employees a chance to know the problems and their reasons on that specific department.

As we can see from table 4.3 above, from the total of 30 respondents 18(60%) of them working in the Enterprise above 15 years, 6(20%) of them below five years, and the rest 5(16%) and 1(4%) are staying in the Enterprise between 11-15 years and 6-10 years respectively. Regarding with the working experience in the purchase department 9(30%) of them have below two years, 11(37%) of them for 3-5 years, 6(20%) of them for 6-10 years and 4(13%) of them have above 15 years experience. These results indicate that most of employees in Purchase Department worked in the Enterprise and Purchase Department for a long period of time and they are well experienced.

4.1.2 Inventory Management Practices and the Level of Management attention to Inventory in the Enterprise.

4.1.2.1 Practice of Inventories Categorization, Valuation, Order size, and Recording system

To manage inventories effectively, Laysons and Farrington (2006) identified methods that help to categorize them. Inventories can be categorized based on their values, movement and others which are supported by computerization. And valuation of inventories is done based on their cost. Barzandeh (2011) describes the methods and how to calculate to value inventories. Based on these assumptions an interview made with key informant from Purchase Department indicates that spare parts in the warehouse are categorized based on their movement as fast, slow, and non-moving items. According to him inventories are valued based on their entry price. Inventories enters first in warehouses used before the lately ones. Besides response of an interview made with key informant the researcher can observe secondary data which gives information about price of spare parts used. Based on this information the Enterprise used FIFO method to evaluate its inventories consumption and to calculate its total stock.

Regarding with the purchase order size of inventories the Purchase Process Owner replied that they used past experience consumption of inventories and the current financial capacity of the Enterprise. In addition to this forecasted annual demand of spare parts of the Enterprise is

prepared by the Technique Department and adjusted to past consumption trend and financial capacity of the Enterprise if price of requested spare parts is high.

Recording inventories movement is very important to assure the effective utilization of inventories, to take precautionary action to shortage of items, helps to make consumption trend analysis, and so on. Based on these assumptions questions were raised for Purchase Process Owner and he replied that process of recording inventories in and out is done manually and the researcher observes that recording of inventories transactions are done manually with few numbers (they are two) of temporary employees who have not knowledge about the work and there is only one computer which is used to write other letters and office memorandums but not inventories transactions. In addition to these recording of in and out of inventories haven't up date recordings and the process owner discusses that lack of skilled man power in the department, lack of concentration from Enterprise to the department, and lack of necessary office equipments are the major reasons for delay of recording. The other thing raised to Purchase Process Owner is about availability and usage of minimum and maximum quantity level of inventories. According to him there is predetermined minimum and maximum quantity level for each spare part, but the problem is on the applicability of this standards. They don't use the levels as a reference to make decision for different purposes. Additionally, the researcher observed that there is minimum and maximum level on each stock card.

The above responses from interview of key informant and observation of the researcher told us that inventories are categorized based on their movement, used FIFO method of valuation, follow periodic inventory system, determining order size by using trend analysis, financial capacity of the Enterprise and demand forecasting of Technique Department and recording of inventories in and out is done manually.

4.1.2.2 Facilities in Inventory Control Rooms, Handling System, Annual Count and Audit Practices in the Enterprise

Table 4.4 Facilities, Handling system, annual count and audit practices of the Enterprise

1= Minimum 3=Average 5= Maximum

No	Item	Frequency	Min	Max	Mean
1	Inventory department rooms are well equipped	30	1	5	2.2
2	There is effective handling system to protect inventory from spoilage, damage, theft...	30	1	5	2.9
3	Do you agree that the annual physical count covers and assure the existence of each and every item?	30	1	5	3.8
4	Internal auditors made surprise physical count of inventories.	Alternatives	Frequency	Percentage	
		Yes	21	70	
		No	9	30	
		Total	30	100	

Source: Field Survey, April, 2016

As it is discussed in the literature part having well equipped office with appropriate materials for the job is important. But the answer rated by employees in the above table Item 1 show us below the expected average mean (i.e.3). Employees rated 2.2 and this indicates that there is lack of necessary equipments in inventory processing department.

It is known that inventories have to keep from spoilage, damage, theft and other similar problems. For the question how far inventories are kept from these types of problems respondents of employees rated near below the average mean (2.9). This indicates that somehow good inventories handling mechanism in the Enterprise.

To know the overall wealth of a given organization it applies a physical count at least once a year. Regarding with these employees was asked whether annual physical count covers and assure the existence of each and every inventory in the store. Respondents rated 3.8, that is above the average mean. This result indicates that somehow there is good physical count and check shortage and excess of inventory. The same as the annual physical count 21(70%) of respondents replied that there is surprise physical count of inventories made by internal auditors and the rest 9(30%) of them replied that there is no surprise count of inventories. Most of respondents agreed that the auditing activity regarding with the inventory controlling is in a better condition.

4.1.3 Is Inventory management System Contributing Factors for Poor Service Provision of the Enterprise?

According to study made by Aschalew (2015), inventory management is one of the factors which contribute for poor service provision of the Enterprise. To assure whether that finding is the right factor or not for poor service delivery and customer satisfaction, the following questions were raised to employees respondents who have better information about inventory management.

Table 4.5 Factors for Poor Performance of the Enterprise Regarding with Inventory Management

1= Minimum 3=Average 5= Maximum

No	Item	Frequency	Min	Max	Mean
1	Do you agree that all the purchased items are aligned with the annual plan of the Enterprise?	30	1	5	2.1
2	To what extent do you agree that high carrying/holding cost affects inventory control?	30	1	5	2.9
3	The company maintains safety stock in any of planning calculation due to uncertainty in future demand or un guaranteed availability of supplies.	30	1	5	2.5
4	Lack of spare parts is the major reason for the stoppage of buses and inefficient service provision of the Enterprise.	30	1	5	3.27
5	There is no proper utilization of spare parts in the Enterprise.	30	1	5	3.53

Source: Field Survey, April, 2016

As we can see from the above table 4.5 Item 1 respondents rated 2.1, which tell us that the alignment of purchased items with annual plan of the Enterprise is poor. Besides this response of respondents the 2015/2016 annual plan and report of the Enterprise indicates that there is no proper alignment between demand and supply of spare parts. The detailed plan puts demanded item, its quantity, and time frame for delivery for spare parts and expected result from it, but interview made with Purchase Process Owner of the Enterprise tell us that even if the Technique

Core Process announces its annual demand through annual plan, still there is problem of purchasing non fast moving items with huge amount and vice versa.

As it is discussed in the literature part by Naddor (1966), inventory holding cost is the biggest cost for many organizations which is estimated or imputed cost of holding a unit of material in the form of inventory for a unit period of time. It includes capital tied up costs, storage costs, service costs, and risk costs. Regarding with this assumption respondents were asked how far they agreed about the affecting of inventory control by carrying cost. They rated 2.9 a little below the average mean. This answer of respondents indicate that the Enterprise is averagely maintains good system that helps to minimize its inventory carrying cost. But the interview made with the Purchase Process Owner denote that there are different spare parts costs close to 30 Million Birr recorded as dead item and other in ten million Birr workable items but haven't any movement for a past years are in the store. Response of the interviewee indicates that the Enterprise has huge amount of tied up capital in these items and the rest carrying costs.

As it is discussed in the literature part Mahendra (2014), safety stock helps to protect against uncertainties demand increase the risk of shortages. Based on this assumption respondents were asked whether the Enterprise has safety stock for spare parts or not and they rated below the average mean that is 2.5 which can be taken as poor performance. And the interview also support respondents answer of not having spare parts safety stock. According to him the major reason of buses stoppage is this lack of safety stock and running out of stock.

For the above table Item 4 question, which is the major instance for this study-assuring that shortage of spare parts is one of the factors to stoppage of buses and inefficient service provision of the Enterprise, respondents of employees rated above the average mean, 3.25 that means they take in to account that lack of spare parts is the major factor for the above stated problems. Besides this response of respondents an interview made with the Technique Core Process Owner indicates that the major problem to maintain and dispatch buses is lack of spare parts.

The last question for respondents about factors that affect service delivery of the Enterprise is their feeling about effective utilization of spare parts by Technique Core process. They rated above the average mean 3.53. This rate and interview made with Purchase Process Owner indicates that there is no proper utilization of spare parts in the Enterprise. But interview of

Technique Core process negate with this response. According to him the Technique department used spare parts in efficient way.

4.1.4 What are the Factors that Affecting Inventory Management?

There may be so many problems that affect accomplishment of the overall Enterprise goal. Among these problems quality of the staff, satisfaction level on their salary, and others are the factors that affect inventory management. Here are some responses emerged from questionnaires which were distributed to employees to get information about the factors.

4.1.4.1 Educational Background and Training Opportunity for Employees

According to Lyson and Gillingham (2003), employees in inventory management department have to have knowledge, skill, and attitude. To get this issues there are two ways, the first one is learning about it regularly in colleges and universities and the second one is developing it through training given by the Enterprise. And the other author Baily and Farmer (1982), suggested that qualification of the staff is a pre-requisite and must be matched with job requirement. Based on this assumption employees were asked about their condition.

Table 4.6 Educational Background and Training Opportunity of Employees

No	Item	Yes		No		Total	
		No.	%	No.	%	No.	%
1	Is your educational background related with inventory management which helps to your current job?	20	67	10	33	30	100
2	Have you ever taken any training which improves your knowledge and skill about inventory management?	7	23	23	77	30	100

Source: Field Survey, April, 2016

From Table 4.6 above one can see that 20(67%) of the employees expressed that they have educational background related with inventory management and the rest 10(33%) don't have. This response of respondents contradicts with the answer in Table 3.2. In that table respondents answer show us that there are 15 employees who are 12 complete and below that, and the current

situation in Ethiopia indicates that to specialize in some specific area at least some one has to hold certificate. Based on these answers even if respondents reply that they have related educational background, we can judge that they haven't related educational background.

In the same above table item 2 about taking of training to improve employees knowledge and skill 23(77%) of respondents replied that they haven't get any training and the rest 7(23%) get training about inventory management. Based on these results competency of employees regarding with having relevant educational background and training to manage inventories is questionable.

Table 4.7. Employees' Satisfaction Level based on their Salary

Item		Choose Options					Total
		Strongly satisfied	Satisfied	Averagely satisfied	Dissatisfied	Strongly dissatisfy	
Salary attractiveness and satisfaction	Frequency	0	6	7	12	5	30
	Percent	0	20	23	40	17	100

Source: Field Survey, April, 2016

Baily and Farmer (1982), noted that having qualified staff that is competent and skilled will help the organization to achieve its goals and objectives by being efficient and effective when carrying out various functions. But amount of salary is the major factor to attract and maintain qualified employees and to motivate the existed employees.

Respondents were asked about their salary attractiveness and satisfaction. The majority, 12(40%) and 5(17%) of respondents dissatisfied and strongly dissatisfied by their salary amount respectively. The rest 6(20%) and 7(23%) of respondents satisfied and averagely satisfied by their salary respectively. From this response of employees one can say that most of employees are not satisfied by their salary.

Table 4.8 Problems to Purchase and Supply Spare Parts

Item	Alternative Choices	Frequency	Percentage
In your opinion the most critical problem to purchase and supply spare parts timely is...	Lack of financial capacity	5	16
	Lack of administrative capacity in purchase dept	1	4
	Lack of proper planning in Technique department	20	66
	Lack of hard currency	4	13
	Total	30	100

Source: Field Survey, April, 2016

There may be several problems to supply spare parts in time. Respondents were asked about the causes of delay. Majority of respondents 20(66%) replied that there is lack of proper planning in Technique department demand for spare parts. The other 5(16%) and 4(13%) replied the reason for delay of purchase is lack of financial capacity of the Enterprise and problems in getting hard currency respectively and the rest one respondent replied that there is administrative problem in purchase department. From this response one can derive that the major problem which takes time to supply spare parts is lack of proper planning in Technique Department.

4.1.5 Is the management Aware about Material Shortage and Excess Stocks?

Table 4.9 Follow up Practice of Inventories

No	Item		Choose Options					Total
			Strongly agree	Agree	Average agree	Disagree	Strongly disagree	
1	There is regular communication among warehouses about excess and shortage of materials.	Frequency	0	4	5	15	6	30
		Percent	0	13	17	50	20	100
2	There is a day to day follow up by the supervisor of the department to make sure enough products are in the stock.	Frequency	3	4	5	12	6	30
		Percent	10	13	17	40	20	100

Source: Field Survey, April, 2016

According to Gopalakrishnan (1994) there are different types of warehouse structures. Among these types of structures ACBSE follows decentralized warehousing system. Using any types of warehousing has its own advantage and disadvantage. Among disadvantages of using decentralized warehousing system lack of proper information handling network is the major one. Respondents were asked how far they agree about availability of day to day communication among warehouses about excess and shortage of materials. From the total respondents 15(50%) and 6(10%) strongly disagree and disagree about the existence of communication among warehouses respectively. The rest 4(13%) and 5(17%) agree and averagely agree that there is effective communication respectively.

According to Modi (2012) a supervisor in charge of inventory management has to look over their inventory on a regular basis to make sure enough products are in stock. But if the supervisor failed to identifying shortages and giving solution ahead of time service of the organization becomes failed. Based on this assumption question was raised for respondents whether the supervisor control this condition or not which is seen in the above table Item 2. From the total respondents, 12(40%) and 6(20%) of them replied that disagree and strongly disagree respectively and the rest 3(10%), 4(13%), and 5(17%) replied strongly agree, agree, and averagely agree respectively that supervisors are committed to supervise and make sure enough products are in the stock.

4.1.6 Is there Clear Channel of Command Inventory Management?

Table 4.10 Having of Inventory Management Policies and Procedures

1= Minimum 3=Average 5= Maximum

No	Item	Frequency	Min	Max	Mean
1	Duties and responsibilities of Inventory Department are properly segregated.	30	1	5	2.4
2	There is clearly predetermined provision about the disposition of obsolete and inactive items from inventory.	30	1	5	2.2
3	There is clearly stated and systematically communicated policies and procedures about inventory management in the Enterprise.	Alternatives	Frequency	Percentage	
		Yes	12	40	
		No	18	60	
		Total	30	100	

Source: Field Survey, April, 2016

Susan and Michael (2000) discussed about responsibilities of inventory department. According to them, people in inventory department have segregated responsibilities regarding with managing inventories. Respondents were asked whether they have segregated responsibilities or not in the above table Item 2. They rated below the average mean, that is 2.4 and it indicates that the segregation of responsibilities in the department is poor.

According to Bose (2006), good inventory management starts from procurement and ends with disposal of the acquired material. Having disposal policy of obsolete and inactive materials from inventory is necessary for organizations. Regarding with this issue in Table 4.10 Item 2 respondents rated 2.2. This result indicates that there is no provision which helps to dispose this type of materials. Besides, an interview made with Purchase Process Owner indicates that there is no any disposal policy and there is around 30 Million Birr spare parts.

According to Horngren and Harrison (1992) policies, procedures, manuals, and other documents are necessary to process day to day activities of organizations. Respondents were asked whether these procedures are available in the department or not. As it is shown in Table 4.10 Item 3, respondents were asked about availability of policies and procedures and 18(60%) of them replied that the Enterprise hasn't the necessary procedure manuals and the rest 12(40%) refused

about the availability of procedures and manuals regarding with purchase. Additionally an interview made with Purchase Process Owner indicate that there is no revised purchase manual in the Enterprise and currently it uses out dated manual which haven't acceptance by law if some misunderstanding occurs with suppliers.

4.2 Data Analysis Based on Technique Core Process Case Team and Version Leaders

Table 4.11 Participation of Technicians in Spare Parts Specification

No.	Item	Yes		No		Total	
		No.	%	No.	%	No.	%
1	Technicians participate during preparation and evaluation of buses specification before purchase?	10	59	7	41	17	100
2	Do each buses of the Enterprise have a history sheet (jacket) which helps to analyze historical data?	8	47	9	53	17	100
3	If 'Yes' for question number two, do you analyze and use the information from the history for decision making purpose?	6	75	2	25	8	100

Source: Field Survey, April, 2016

As it is discussed in the literature part, the most important factors in spare parts management are the technical evaluation of the machine from the point of view of maintainability and reliability, before its selection for purchase. Based on this assumption Version leaders and Case Team Leaders in technique department were asked about their participation in specification preparation of buses before purchase. As we can see from the above table Item 1, from total of 17 respondents, 10(59%) of them replied that they don't involve during the preparation of specification and 7(41%) of them participate in the preparation. In contrary to some respondents answer, interview made with Technique Core Process Owner indicate that technicians are not participated in preparation of specification for purchase of buses when the nearly purchased buses specification prepared.

According to Saxena (2003), history sheets for each machines or for their important component is very important and it serves as starting point to use scientific method of maintenance and planning for spare parts. Based on this assumption respondents were asked about the existence of recording history sheet and their answer is presented in Table 4.11 Item 2. 8(47%) of them replied that there is history sheet recording and the rest 9(53%) refused the existence of history

sheet for buses. An interview made with Technique Core Process Owner about history sheet indicates that there is recording practice about buses and their components life.

Additional question were raised to respondents who said ‘Yes’ about the availability of analyzing and using the information for decision making purpose. From the total of eight respondents who agrees about existence of history sheet recording, 6(75%) of them believe that information from this recording used for decision making purpose and the rest 2(25%) of them don’t agree with the majority. An interview made with Technique Core Process Owner of the Enterprise supports answer of the majority. In addition to these, observation was done by the researcher how history sheet is recorded and processed. Each bus and other vehicles of the Enterprise have their own file to record events. But there is no up to date recording and nobody analyzed it to produce information which helps to decision making and planning of spare parts.

Table 4.12 Responsibility in Preparation of Spare Parts Specification and using Scientific Method

Item	Yes		No		Total	
	No.	%	No.	%	No.	%
Technicians of the Enterprise involve in the preparation of spare parts specification.	16	94	1	6	17	100
Technique dep’t use scientific method to analyze about spare parts buses failures.	10	59	7	41	17	100

Source: Field Survey, April, 2016

Technicians who are engaged in using spare parts have to participate in the preparation of specification and approval of purchased items. If items are bought without order and approval of technicians of the Enterprise the purchased item may become useless and create tied up capital for the Enterprise. Based on this assumption respondents were asked whether they have responsibility in specification preparation and approval of purchased item. As we can see in Table 4.12 Item 1, 16(94%) of respondents replied they participate in specification preparation and approval of purchased spare parts. Only one respondent from the total disagree about participation of technicians.

According to Saxena (2003) scientific judgment of maintenance staff is necessary in deciding what and how much is to be stocked and at which stage. Based on this assumption respondents were asked in the above table Item 2, how they are analyzing about planning of spare parts items and quantity is supported by scientific method. Majority of case team leaders 10(59%) of respondents replied that they use scientific method. The rest 7(41%) of case team leaders respond that the Technique department don't use scientific method to analyze about spare parts and buses failures. An interview made with Technique Core Process Owner also supports the majorities answer but observation made by the researcher indicates that the necessary source documents to planning like history sheet don't produce necessary information and there is no trend of analyzing information recorded in the history sheet. Also excess of spare parts in ware houses tell us that the Technique department is poor in using scientific method.

Table 4.13 Approach of Maintenance

Item	Choose alternatives	Frequency	Percentage
Which approach of maintenance is given priority in the Enterprise?	Breakdown only	0	0
	Preventive only	7	41
	Both used equally	10	59
	No clear approach	0	0

Source: Field Survey, April, 2016

As it is discussed in literature part, having predictive maintenance approach has greatly affected the management of spare parts. If the organization used this technique appropriately there is no need to stock an item until it is required. From the total respondents, 7(41%) replied that the Enterprise use preventive maintenance system and the rest 10(59%) said that breakdown and preventive maintenances are approaches which the Enterprise use simultaneously. Even if the majority replied that both approaches are used but interview made with Technique Core Process Owner tell us that, the focused approach is preventive maintenance. In contrary to this annual plan of the Enterprise (2015/2016), show us that 89,730 breakdown maintenance and 11,072 preventive maintenance. This figure indicates that the Enterprise give more concentration for breakdown than preventive maintenance and this approach affects wrongly effective utilization of spare parts and prediction of spare parts demand.

4.3 Data Interpretation Obtained from Interviews

In this part, by using semi structured questionnaires, interviews were conducted with the Enterprise Purchase Support Process Owner, Technique Core Process Owner, and Audit Support Process Owner. Responses from these interviewees were taken through conversation with interviewer.

4.3.1 Interview with Purchase Support Process Owner of ACBSE

For the questions about practice of inventory management, stock out frequency, time delay for foreign purchase, and responsibility to request for demand of spare parts the Purchase Support Process Owner replied that inventory management of the Enterprise is managed by Material Planning and Control Case Team which is generally managed by Purchase Support Process. Inventories in the stock are categorized based on their movement as Fast, Slow, and Non-moving items. The Case Team produce report which helps to prepare its annual and monthly plan by taking the past trend of inventory consumption Technique Department. In the case of ACBSE requisition of spare parts is emerged from Technique Core Process. Most of spare parts are purchased from foreign markets and the overall process takes place around nine months. Currently the Enterprise faces out of stock problem from different spare parts and this problem causes for stoppages of buses and inefficient public transport service provision.

According to him stores and other responsible divisions are not supported by IT and currently it is impossible to access and exchange information between main store and depot branches. The reason why this process is not supported by IT is that it needs huge amount of investment which is unaffordable to the Enterprise at this moment. Besides this, recording and controlling of inventories in and out is done manually. There is annual physical count of inventories and sometimes we made surprise count in specific items when different things happen, like theft and other problems.

The other thing what the Support Process Owner raised is about scientific inventory control system of the Enterprise and obsolete or damaged spare parts. According to him the Enterprise doesn't follow scientific method to stay its inventory at appropriate level. When coming to obsolete or damaged spare parts, the Enterprise hold more than thirty million Birr cost obsolete

spare parts in its store. This obsolete spare parts are accumulated for a years and main reason of disabling to dispose these items is lack of having clear disposition manual.

4.3.2 Interview with Technique Core Process Owner of ACBSE

Different questions were raised by the researcher to Technique Core Process Owner. According to him, demand of any spare parts is raised from their department and after procurement they approve that the purchased item is as per specification. The other thing which is replied by the Core Process Owner is about history sheet recording of buses. He replied that there is structure and officials who are committed to record any activities regarding with the buses maintenance and consumption. But the major problem is that there is no trend of taking recorded information and analyze it to use the data for different purposes like spare parts and fuel consumption analysis and cost benefit analysis of buses.

Other questions raised to interviewee were about approach of maintenance, specification preparation process of spare parts, and efficiency of spare parts utilization. According to him the Enterprise use preventive maintenance approach to its buses, its technicians participate in spare parts specification preparation and there is poor spare parts utilization.

4.3.3 Interview with Internal Audit Support Process Owner of ACBSE

The researcher raised a question about the feeling of Internal Audit Process Owner on stock audit system and frequency of applying it. According to her there is a trend of auditing stocks in different times throughout the year and they get discrepancies between recorded and physical stock balances. When discrepancies occur they report to the concerned body that is responsible to adjust this problem.

CHAPTER FIVE

5. Summary of Findings, Conclusions and Recommendations

Currently in Ethiopia there are many governmental and private companies which are established to provide public transport service. ACBSE is an enterprise established to provide public transport service and owned by government. Different studies indicate that, currently ACBSE serves its customers under its capacity. As any other industries, the major problem for its effective service provision is that lack of appropriate inventory management practice.

To avoid shortages of spare parts and decrease stoppages of buses, ACBSE purchased spare parts in million Birr throughout every budget year. But those studies which were done on service provision practice and customer satisfaction level of the Enterprise point out that lack of spare parts is among the factors that affect the service provision. This study is done to find out impact of inventory management in service provision and to assess the overall practice of inventory management in the Enterprise. In this part of the Thesis, summary of findings of the study is derived from the analysis of both primary and secondary data. However, the data source is mainly emphasized on the primary data that had been collected from different respondents through questionnaires and interviews.

Based on the analysis of the inventory management practice and factors that affect it, the following findings are identified.

5.1 Findings:

- ❖ Majority of employees in inventory processing department have an experience of greater than 11 years and also they have educational background related with inventory management but the enterprise don't give adequate training for them to improve their knowledge, skill, and attitude on their current job.
- ❖ Regarding with practice of inventory management, the Enterprise categorized its inventories based on their movement, used FIFO valuation method, follow periodic inventory system, determine purchase order size by using trend analysis of consumption, inventories in and out is recorded manually, there is annual physical count of inventories which assures the existence of each and every item and Internal Auditors of the Enterprise made surprise physical count.

- ❖ Even if response of majority employees in the purchase department indicates that there is up to date recording performance, observation conducted by the researcher indicates that there is backlog of three months and above inventory issues.
- ❖ As per the ratio of employees' agreement level inventory department rooms are not well equipped with the necessary equipments and there is a little bit poor handling system to protect inventory from spoilage, damage, theft, and other problems.
- ❖ Majority of employees' response and 2015/2016 annual plan and report of ACBSE told us that there is no alignment between demand and supply of spare parts.
- ❖ Even if majority of employees answer indicate that there is averagely good inventory management which decreases carrying costs of the Enterprise, interviews made with the key informants indicate that there is huge amount of inventories that holds very high carrying costs.
- ❖ It is known that having sufficient safety stock level is necessary for enterprise like ACBSE to avoid stoppage of buses. But response of employees and key informants indicate that there is no safety stock for spare parts and being out of stock occurs many times. As per employees and key informants answer, this lack of safety stock and being out of stock is the major factor for stoppage of buses and poor service provision of the Enterprise.
- ❖ Even if majority of respondents in Technique core process indicates that they use spare parts in a wise manner, in contrary to this, response of employees in Purchase Support Process and interview of its Process Owner assures that there is no efficient utilization of spare parts.
- ❖ Majority of employees disagree about the attractiveness of their salary. As a result this may affect to attract and maintain qualified employees in the department.
- ❖ Most of the time inefficient supply of spare parts has a negative impact in good service provision of the Enterprise. Majority of employees (66%) replied that lack of proper planning for demand of spare parts in Technique Core Process is the major reason for poor supply.
- ❖ Determining and applying minimum and maximum quantity level for spare parts is necessary to aware and takes replenishment action. 63% of employees respond that there is predetermined minimum and maximum quantity level for all types of inventories and among these nineteen employees majority of them (63%) agreed that the Enterprise used this quantity level.
- ❖ The majority of employees disagree about having of day to day communication among warehouses about excess and shortage of materials and this creates an excess in one store of

specific spare may be shortage for the other. Besides this there is no day to day follow up of supervisors to check adequate spare parts are in the stock.

- ❖ An interview made with key informants and majority of employees rating about having of organizational policies and procedures about inventory management indicate that there are some limitations in having full of policies and procedures.
- ❖ Regarding with segregation of duties and responsibilities and having predetermined provision about disposition of obsolete items majority of employees rated below the average mean which indicate that the Enterprise is poor in these issues.
- ❖ The same as answer of Technique Core Process Owner, majority of employees' response agreed that they participate in the preparation of specification for buses before purchase and spare parts.
- ❖ Even if some of respondents in Technique department agreed about the availability of history sheet recording, an interview made with Technique Core Process Owner and respondents who answered 'Yes' indicates that there is no practice of analyzing the information for decision making purpose.
- ❖ Even if majority (94%) of respondents in Technique department agreed that there is effective utilization of spare parts in the Enterprise, an interview made with Technique Core Process Owner indicates that there are limitations in utilization of spare parts.
- ❖ Even if majority of employees response and an interview conducted with Technique Core Process agreed that they used scientific method to plan about spare parts, observation made by the researcher and availability of excess spare parts in warehouses disprove answer of the above mentioned statements about using of scientific method.
- ❖ The majority 59% of employees agreed that they used breakdown and preventive approaches of maintenance, in contrary to this an interview made with Technique Core Process Owner indicates that they use preventive method but annual plan and report (2015/2016), of the Enterprise indicates that the Enterprise give more concentration for breakdown than preventive maintenance.

5.2. Conclusion

- ❖ Majority of employees in purchase department have long years experience in the department about process of how inventory is managed but they haven't related educational background with inventory management.

- ❖ The Enterprise is weak in providing adequate training for all of its employees who have direct interaction with inventories management about modernized inventory management process.
- ❖ Regarding with inventory management practice of the Enterprise, inventories are categorized as fast, slow and non-moving items, valued by using FIFO method, purchase order size is determined by using trend analysis of consumption, there is predetermined minimum and maximum level which helps to aware and take replenishment action, annual physical count is done properly, activities are not supported by IT and recorded manually, and there is no up to date recording of inventories in and out.
- ❖ The Enterprise is poor in utilization of spare parts effectively and in handling system to protect inventory from spoilage, damage, theft, and other problems.
- ❖ There is a gap between demand and supply of spare parts in the Enterprise that arise from lack of proper planning for their demand in Technique Core Process and this create being out of stock of spare parts which is the major cause for stoppage of buses and weak service provision of the Enterprise.
- ❖ The Enterprise owns huge amount of inventories that holds very high carrying costs. There is huge amount of obsolete items which increases carrying cost of inventories but there is no predetermined procedure to dispose these materials and minimize carrying cost of inventories.
- ❖ Majority of employees disagree about the attractiveness of their salary. As a result this may affect to attract and maintain qualified employees in the department.
- ❖ There is no regular communication among warehouses about excess and shortage of materials to solve problems among them and supervisor in inventory control don't apply day to day follow up to check adequate spare parts are in the stock.
- ❖ Technicians of the Enterprise participate in the preparation of specification for buses and spare parts before purchase.
- ❖ Even if the Enterprise has history sheet recording system, it doesn't analyze the information for decision making purpose.
- ❖ There is no trend of using scientific method to plan about their spare parts demand in Technique department.
- ❖ Even if answer of key respondents indicate that the Enterprise follows preventive approach to maintain its buses, but the fact accessed from annual plan and report of 2015/2016 discuss that the Technique department gives more focus to breakdown maintenance.

5.3 Recommendations

- ❖ Having up to date procedure manuals is essential to perform any duties. ACBSE is poor in having these manuals which guides the overall procurement process. So, it has to prepare up to date manuals.
- ❖ Providing training for employees creates fruitful opportunity to modernize management of inventories. To become modernize and effective in its day to day activities it is better if the Enterprise facilitate to give training for employees in inventory management.
- ❖ Supporting activities with IT in inventory management department helps to share information in different position, facilitate to have equal knowledge for decision making, and facilitate day to day communication among warehouses. By taking these benefits in to account ACBSE has to focus to develop Information Technology.
- ❖ Making inventories recording computerized helps to get accurate and up to date information in easy way. So, ACBSE has to focus to become computerized recording of in and out of inventories and events in the department and also give attention fulfilling adequate man power to become up to date.
- ❖ The Enterprise has to concentrate to improve the current poor utilization of spare parts by creating accountability for improper use of spare parts during and after maintenance.
- ❖ Planning wrongly demand for spare parts in Technique department, create excess for slow and non-moving spares and being out of stock to fast moving items. To avoid or minimize this problem recording information properly in history sheet and analyzing data in scientific way to use the result for planning purpose is essential. So, ACBSE has to focus in recording history sheets properly, analyzing, and using the result for planning purpose.
- ❖ To avoid or minimize carrying cost of inventories all participants in purchasing process (in the Enterprise) has to careful to decide about the item quality, quantity, movement practice and other issues. Additionally, to solve the current problem ACBSE has to take immediate action to dispose the accumulated obsolete spare parts which decreases carrying costs of inventories significantly.
- ❖ Preventive approach of maintenance has significant impact in utilization of spare parts. Therefore, the Enterprise has to think to apply preventive approach fully in maintenance of its buses.

References

- Annual Magazine of ACBSE. 2013. Anbassa City Bus Service Enterprise.
- Annual Report of ACBSE. 2014/2015. Anbassa City Bus Service Enterprise.
- Armstrong-Wright and Sebastian. 1987. “*Bus service: reducing cost, raising standards*”. Urban transport series, the World Bank.
- Arnold, T. and Chapman, N. 2001. *Introduction to Materials Management. 4th ed.* Prentice-Hall Inc, New Jersey.
- Arora, M. 2000. *A Textbook Cost Accounting.* CBS Publishing Limited, New Delhi.
- Aschalew Tsegaye. 2015. The Evaluation of Customer Satisfaction of Anbassa City Bus Service Enterprise. AAU. Ethiopia.
- Ashworth, A. 2004. *Cost Studies of Buildings 4th ed.* Harlow, England; New York Pearson/Prentice Hall.
- Bailey, P. and Farmer, D. 1982. *Managing Material Handbook.* Aldershot: Gower Press.
- Bhausheb, A. N. & Routroy, S. 2010. *Evaluation of Inventory Performance for Perishable Products through Simulation.* Journal of Operations Management. (9), 71-72. (retrieved at May 10, 2016)
- Barzandeh, M. 2011. *Accuracy of estimating techniques for predicting residential construction costs – a case study of an Auckland residential construction company.*
- Bose, C. 2006. *Inventory Management.* Prentice Hall of India.
- Champion, B. Miller, U. 2010. *Accounting in Business Decisions-Theory Method and Use.* Englewood Cliffs New Jersey, Prentice Hall, Inc.
- Conrad, B. (n.d.) *Advantages & Disadvantages of a Computerized Inventory Management System.* <http://smallbusiness.chron.com> (retrieved at May 10, 2016)
- Coyle, J.J., Bardi, E.J. & Langley Jr., C.J., 2003. *The Management of Business Logistics: A Supply Chain Perspective 7th edition.* Ohio: South-Western.
- Demelash Abate. 2007. Analyzing Public Transport Performance Using Efficiency Measures and Spatial Analysis; The Case of Addis Ababa, Ethiopia. Enschede, The Netherlands

- Deveshwar, A. and Modi, D. 2012. *Inventory Management Delivering Profits through Stock Management*. Bandhu Chhotu Ram University of Science and Technology, India.
- Eni, O. 2001. *Small Business Management*. Port Harcourt Press Limited.
- FDRE Negarit Gazeta proclamation NO. 187/94
- Goor, A.R.v. and Weijers, S.J., 1998. *Poly Logistiek Zakboekje*. Arnhem: PBNA.
- Gopalakrishnan, P. 2009. *Handbook of Material Management*. PHI Learning Private Limited, New Delhi
- Gunner, J. and Skitmore, M. (1999), Comparative analysis of pre-bid forecasting of building prices based on Singapore data. Construction Management and Economics, pp. 635–646.
- Harrington, L., 1996. *Untapped savings abound*. Industry Week, 15th July, pp.53-58.
- Horngren, J. and Harrison, C. 1992. *Cost Accounting and Managerial Emphasis*. 5th ed. Prentice Hall International Editions.
- Keth, L., Muhlemen, A., and Oakland, J. 1994. *Production and Operations Management*. London: Pitman Publisher.
- Kotler P 2002. *Marketing Management*. 2nd ed. The Millennium Edition. New Delhi: Prentice Hill of India.
- Kumar, A., and Suresh, N. 2008. *Production and Operations Management: 2nd ed.* Nee Age International Publishers, New Delhi.
- Lyson, K. and Farrington, B. 2006. *Purchasing and Supply Chain Management*. 7th ed. Pearson Education Limited.
- Lyson, K. and Gillingham, M. 2003. *Purchasing and Supply Chain Management: 6th ed.* Financial Times/Prentice Hall, London.
- Menon, S. 2006. *Purchasing and Inventory Control*. Wheeler Limited, New Delhi.
- Monczka, M., Handfield, B., Giunipero, C., Patterson, L., and Waters, D. 2010. *Purchasing and Supply Chain Management*. Seng Lee Press, Singapore.

- Mpwanyana, M.F. 2005. *Inventory Management as a Determinant for Improvement of Customer Service*. Department of Business Management Faculty of Economic and Management Sciences, University of Pretoria
- Murray, Davis, et al. 1998. "Public Transportation Access", *Transport Research D*, 3,5: 319-328
- Naddor, E. 1966. *Inventory systems*. Wiley, New York
- Reid, R. & Sanders, N.R., 2007. *Operations Management: an integrated approach 3rd edition*. New York: John Wiley & Sons.
- Saxena, J .P. (2003). *Warehouse Management and Inventory Control*. Vikas Publishing House Pvt Ltd.
- Saxena, R. S. 2009. *Inventory Management: Controlling in a Fluctuating Demand Environment*. Global India Publications PVT .LTD. New Delhi.
- Sharma, C. 2004. *Materials Management and Materials Handling*. New Delhi: Kahna Publishers Limited.
- Silva, G.L.C. 2009. Modelo de estoque para peças de reposição sujeitas à demanda intermitente e lead-time estocástico. Master's diss., Federal University of Minas Gerais.
- Susan, T. and Michael, K. 2000. *Inventory Management in a Maintenance Environment*. Research Results Digest-Number 40.
- Tom Jose, V., Jayakumar, A. and Sijo, M T. 2013. *Analysis of Inventory Control Techniques; A Comparative Study*. International Journal of Scientific and Research Publications, Volume 3, Issue 3. www.ijsrp.org. (retrieved at May 10, 2016)
- TranSafety, I. 1998, "Strategies for Solving Urban Transportation Problems in Developing Countries", *Road Management and Engineering Journal*.
- Vikash, 2003. "Variegated System of Mass Rapid Transit: An Innovation that Changes the 'Familiar World' of Urban Transport". Map India, Transportation.
- Vrat, P. 2014. *Materials Management, Springer Texts in Business and Economics*. Springer, India.

Vohra, N.D. 2008. *Quantitative Techniques in Management* New Delhi, Tata Mc Graw- Hill Publishing Co. Ltd

Wilding. 2003. The 3ts of highly effective supply chains *journal of Supply Chain Practice*.

Woldeabrha Berhane. 2015. Inventory Management Practices of the Ethiopian Electric Utility: the Case of Addis Ababa City. Addis Ababa University

St Mary's University
Faculty of Accounting and Finance
MBA Program
(Questionnaires for employees)

Sir/Madam, the purpose of this questionnaire is to gather data regarding the practice of inventory management of Anbassa City Bus Service Enterprise. The study is purely for academic purpose and thus does not affect you in any case. Your genuine, frank, timely response is vital for the success of the study.

Therefore, I kindly request you to respond to each question item carefully and oblige.

Note:

- No need of writing your name.
- Where alternative answers are given, encircle your choice and put “✓” mark where necessary.
- Please return the completed questionnaire in time.

Thank you, in advance for your cooperation and timely response.

Sincerely

Aschalew

Your position _____

Part 1. Demographic Information

1.1 Education below grade 12th 12th complete Certificate
 Diploma Degree Masters

1.2 For how long do you work in the Enterprise?

Less than 5 years 5-10 years 11-15 years More than 15 years

1.3 How long experience do you have in the Purchase Support Process?

Less than 2 years 3-5 years 6-10 years

11-15 years More than 15 years

Your current position _____

Questions related to the topic

1. Is your educational background related with inventory management which helps to your current job?
Yes No
2. Have you ever taken any training which improves your knowledge and skill about inventory management?
Yes No
3. How do you rate the satisfaction level of your salary for your job?
Strongly satisfied Satisfied Averagely satisfied
Strongly dissatisfied Dissatisfied
4. How do you categorize inventories in the stock?
Based on their values Based on their movement
We don't categorize them
5. What type of inventory evaluation does the Enterprise used?
Specific identification FIFO Weighted average LIFO
6. How do you determine inventory order size? By using
Past experience Financial capacity of the Enterprise
Forecasting Mathematical model
7. What is the nature of your Enterprise inventory record system?
Manual Computerized Both manual and computerized
8. Is there predetermined minimum and maximum quantity level for all types of inventories?
Yes No
9. There is clearly stated and systematically communicated policies and procedures about inventory management in the Enterprise.
Yes No
10. If your answer for question number ten is 'Yes' how much do you use the information to decision making?
Permanently Frequently
Rarely We don't use

11. In your opinion the most critical problem to purchase and supply spare parts timely is...

- a) Lack of financial capacity of the Enterprise
- b) Lack of administrative capacity in Purchase department
- c) Lack of proper planning in Technique department
- d) Lack of hard currency to purchase from foreign market
- e) Other (if any).....

No.	Items	Strongly disagree	Disagree	Averagely agree	Agree	Strongly Agree
1	Duties and responsibilities of Inventory Department are properly segregated.					
2	There is clearly predetermined provision about the disposition of obsolete and inactive items from inventory.					
3	Do you agree that all the purchased items are aligned with the annual plan of the Enterprise?					
4	There is day to day communication among warehouses about excess and shortage of materials to solve problems and use materials effectively?					
5	To what extent do you agree that high carrying/holding cost affects inventory control?					
6	The company maintains safety stock in any of planning calculation due to uncertainty in future demand or un guaranteed availability of supplies.					
7	There is a day to day follow up by the supervisor of the department to make sure enough products are in the stock.					
8	Lack of spare parts is the major reason for the stoppage of buses and inefficient service provision of the Enterprise.					
9	Organizational structure of ware houses, receiving docks, distribution centers and inventory control rooms are arranged with necessary equipment.					
10	There is effective handling system to protect inventories from spoilage, damage, theft and the like.					

11	Do you agree that the annual physical count covers and assure the existence of each and every item?					
12	Internal auditors made surprise physical count of inventories.					
13	There is no proper utilization of spare parts in the Enterprise.					

St Mary's University
Faculty of Accounting and Finance
MBA Program

(Questionnaires for Technique Department employees)

Sir/Madam, the purpose of this questionnaire is to gather data regarding the practice of spare parts utilization of Anbassa City Bus Service Enterprise. The study is purely for academic purpose and thus does not affect you in any case. Your genuine, frank, timely response is vital for the success of the study.

Therefore, I kindly request you to respond to each question item carefully and oblige.

Note:

- No need of writing your name.
- Where alternative answers are given, encircle your choice and put “✓” mark where necessary.
- Please return the completed questionnaire in time.

Thank you, in advance for your cooperation and timely response.

Sincerely

Aschalew

Your position _____

Questions related to the study topic

1. Do technicians of the Enterprise got a chance to participate during preparation and evaluation of buses specification before purchase?

Yes No

2. Do you agree that technicians of the Enterprise involve in the preparation of spare parts specification and approval of the purchased items?

Strongly disagree Disagree Averagely agree

Agree Strongly Agree

3. Do you agree that the Technique department used spare parts effectively?

Strongly Agree Agree Averagely agree

Disagree Strongly disagree

4. Do you agree that the department use scientific method to predict failures, remaining expected life of component or buses to request the needed spare parts?

Strongly Agree Agree Averagely agree

Disagree Strongly disagree

5. Do each buses of the Enterprise have a history sheet (jacket) which helps to analyze historical data?

Yes No

6. If your answer for question number four is 'Yes' do you analyze and use the information from the history for decision making purpose?

Yes No

7. Which approach of maintenance is given priority in the Enterprise?

Breakdown maintenance Preventive maintenance

Both are used equally There is no clear approach

Interview question for Purchase Support Process Owner

How do you describe the inventory management practice of the Enterprise?

How often is stock out frequency in the Enterprise?

How long the overall processes take for foreign purchase?

Who is responsible to request for demand of spare parts?

Does the depot stores, central store and other responsible divisions is supported by Information Technology to share information equally? If not, why?

What type of inventory management techniques does the company use?

Does the Enterprise used in scientific way to control its inventory to stay at appropriate level?

Do you have any expired, obsolescence and damaged inventory items in warehouses?

Interview question for Technique Core Process Owner

Does the purchase department procure spare parts without your demand, request, and approval?

Is there a mechanism and trend of recording information about buses in the history sheet (jacket) and analyzing it to use in decision making?

Which approach of maintenance is given priority in the Enterprise?

Do the technicians participate in the specification preparation of the buses and spare parts purchase?

How do you evaluate the efficiency of your spare parts utilization?

What is the approach of maintenance in the organization?

Interview question for Internal Audit Support Process Owner

Do you have stock audit systems in your organization?

Have you experienced discrepancies between recorded and physical stock balances? If yes, how do you adjust it?

How frequently does stock taking activity done?

**ቅድስት ማሪያም ዩኒቨርሲቲ የአካውንቲንግ ኤንድ
ፋይናንስ ፋኩልቲ
የድህረ ምረቃ ፕሮግራም
ለግዥና ን/አ/ደ/ሰ/ሂደት ሠራተኞች የተዘጋጀ መጠይቅ**

የተከበራችሁ የድርጅቱ ሠራተኞች፤

የዚህ መጠይቅ ዋና አላማ የንብረት አመራርና አመዘጋገብ ሁኔታ በአንበሳ የከተማ አውቶብስ አገልግሎት ድርጅት በሚል ርዕስ መረጃ ለመሰብሰብ ነው። ጥናቱ የሚደረገው ሙሉ በሙሉ ለትምህርት አላማ ስለሆነ በየትኛውም መልኩ እርስዎን የማይነካና የማይጎዳ ነው። እርስዎም የሚሰጡት መረጃ እውነተኛ፣ ተዳማኒነት ያለውና ትክክለኛ መሆን ለጥናቱ መሳካት እጅግ ጠቃሚ ነው። በመሆኑም እያንዳንዱን ጥያቄ በጥንቃቄና በትክክል እንዲመልሱ በአክብሮት እጠይቅዎታለሁ።

ማስታወሻ፡-

- ስም መጥቀስ አያስፈልግም፤
- ተለዋጭ ምርጫ ለቀረበላቸው ጥያቄዎች መልሱን ይህን "✓" ምልክት በማድረግ ይመልሱ
- እባክዎን የተሞላውን መጠይቅ በሰዓቱ ይመልሱ፤

ስለሚያደርጉልኝ መልካም ትብብር በቅድሚያ አመሰግናለሁ።

አስቻለው

የሥራ መደብዎ _____

ክፍል 1. የግል ሁኔታ

1.1 የትምህርት ደረጃ

- እስከ 12^ኛ ክፍል 12ኛ ያጠናቀቀ ስርተፊኬት
ዲፕሎማ ዲግሪ ማስተርስ

1.2 በድርጅቱ ውስጥ ለምን ያህል ጊዜ አገለገሉ?

- ከ5 ዓመት በታች ከ6-10 ዓመት ከ11-15 ዓመት ከ15 ዓመት በላይ

1.3 በግዥና ንብረት አስተዳደር ደጋፊ ስራ ሂደት ውስጥ ለምን ያህል ጊዜ አገለገሉ?

- ከ2 ዓመት በታች ከ3-5 ዓመት ከ6-10 ዓመት
ከ11-15 ዓመት ከ15 ዓመት በላይ

አሁን ያሉበት የስራ መደብ _____

ከጥናቱ ጋር ተያያዥነት ያላቸው ጥያቄዎች

1. ያለዎት የትምህርት ዝግጅት ከንብረት አስተዳደር ጋር ተያያዥነት ያለውና ላሁኑ ስራዎ የሚረዳዎት ነው?
አዎ አይደለም
2. ስለንብረት አስተዳደር ያለዎትን እውቀትና ክህሎት ለማሻሻል የሚረዳ ስልጠና ወስደው ያውቃሉ?
አውቃለሁ አላውቅም
3. ለሚሰሩት ስራ በሚከፈልዎት የደሞዝ መጠን ያለዎትን የእርካታ መጠን እንዴት ይገልጹታል?

በጣም እረካለሁ እረካለሁ በመጠኑ እረካለሁ
አልረካም በጣም አልረካም

4. ድርጅቱ ያለው የንብረት አያያዝ በደንብ የተደራጀና የየአለት ወጪና ገቢ በኢንቬንተሪ ክፍል የሚመዘገብበት አሰራር አለብለው ያምናሉ?

አምናለሁ አላምንም

5. በተራ ቁጥር አራት ላይ ለተጠቀሰው ጥያቄ መልስዎ አላምንም፣ ከሆነ ምክንያቱ ምን ይመስልዎታል?

ልምድ ያለው ሰራተኛ በተገቢው መጠን ክፍሉ ውስጥ ያለመኖር

የክፍሉ ሰራተኞች ስራ ተነሳሽነት ያለመኖር

የድርጅቱ የበላይ አመራር ትኩረት ያለመስጠት

የክፍሉ ለስራ አስፈላጊ በሆኑ መሳሪያዎች ያለመደራጀት

ሌላ ምክንያት የሚሉት ካለ _____

6. በመጋዘን ውስጥ ያሉ ንብረቶችን ለመቆጣጠር ይቻል ዘንድ በምን አይነት መንገድ ነው ከፋፍላችሁ የምትይዙት?

ያላቸውን የዋጋ ክብደትና ቅለት መሰረት በማድረግ

ያላቸውን እንቅስቃሴ (ቶሎ ቶሎ ወይም አልፎ አልፎ ከስቶር መውጣት) መሰረት በማድረግ

በምንም አይነትም

7. ድርጅቱ ምን አይነት የዋጋ ትመና ስርአት ነው የሚከተለው?

ለያንዳንዱ እቃ በገባበት ዋጋ ቀድሞ የገባ ቀድሞ ይወጣል

አማካይ ዋጋ መጨረሻ የገባ ቀድሞ ይወጣል

8. እንዲገዙ የሚፈለጉ መለዋወጫዎችን መጠን ለመወሰን ድርጅቱ የሚጠቀምበት ዘዴ የትኛው ነው?

ካለፈ ልምድ በመነሳት በድርጅቱ የመግዛት አቅም

የወደፊቱን በመተንበይ በሂሳባዊ ቀመር

9. የኢንቬንተሪ መረጃዎችን የመመዘገብ ስራ የሚከናወነው ከሚከተሉት የትኛውን መንገድ በመጠቀም ነው?

በእጅ ጽሁፍ በኮምፒዩተር በመጠቀም በሁለቱም መንገድ

10. በንብረት አስተዳደር ውስጥ ለያንዳንዱ ስራ መመሪያ የሚሆን የአሰራር መመሪያ እና ደንብ ተቀምጧል።

እስማማለሁ አልስማማም

11. ለሁሉም የመለዋወጫ አይነቶች የዝቅተኛና ከፍተኛ መጠን ደረጃ ተለይቶ በስቶክ ካርድ ላይ ተቀምጧል በሚለው ይስማማሉ?

እስማማለሁ አልስማማም

12. በተራ ቁጥር 10 ላይ ለተጠየቀው ጥያቄ መልስዎ እስማማለሁ፣ ከሆነ ከስቶክ ካርድ ላይ ባለው መረጃ መሰረት

የማስተካከያ እርምጃ የመወሰዱን መጠን እንዴት ይገልጹታል?

በቋሚነት ይወሰዳል በተደጋጋሚ ይወሰዳል

አልፎ አልፎ ይወሰዳል

አይወሰድም

13. በድርጅቶች ለድርጅቱ ስራዎች አስፈላጊ የሆኑ መለዋወጫዎችን ገዝቶ የማቅረብ ስራን የሚያስተጓጉለው ዋና ምክንያት ምን ይመስልዎታል?

ሀ) የድርጅቱ የገንዘብ አቅም ማነስ

ለ) የግዥና ንብረት አስተዳደር የማስፈጸም ብቃት ማነስ

መ) በቴክኒክ ክፍል ፍላጎትን አስቀድሞ በመለየት እቅድ ያለማቀድና ያለማሳወቅ

ሰ) የውጭ ምንዛሪ እጥረት መኖር

ረ) ሌላ ችግር ብለው የሚገልጹት ካለ _____

ተራ ቁጥር	ጥያቄዎች	በጣም አልሰማም	አልሰማም	በመጠኑ አሰማለሁ	እስማማለሁ	በጣም አሰማለሁ
1	የሰራ ክፍሉና የሰራተኞቹ ሃላፊነትና ግዴታዎች በግልጽ ተለይተው ተቀምጠዋል ብለው ያምናሉ?					
2	የሚወጡ እቃዎች መመሪያና አሰራር ግልጽ በሆነ መንገድ የተቀመጠ አለ::					
3	በበጀት አመቱ ውስጥ የሚገዙ መለዋወጫዎች በሙሉ በእቅድ ላይ በተያዘው መሰረት ነው በሚለው ይስማማሉ?					
4	በዴፖ በሚገኙ መጋዘኖች መካከል ያለባቸውን የመለዋወጫ ችግር እንዲፈቱ ሊያደርግ የሚችል (እጥረትና ትርፍ ካለ) የአለት ተአለት ግንኙነት አላቸው::					
5	በድርጅቱ ውስጥ ክፍተኛ ገንዘብ የያዙ መለዋወጫዎች ያለአገልግሎት ባከነው ይገኛሉ በሚለው ይስማማሉ?					
6	ድርጅቱ ለመጠባበቂያ የሚሆን መለዋወጫ በአይነት ይይዛል ብለው ያምናሉ?					
7	መለዋወጫዎች በሚፈለገው መጠንና አይነት መኖራቸውን የክፍሉ ሀላፊ የቅርብ ክትትል ያደርጋል ብለው ያምናሉ?					
8	የመለዋወጫ እጥረት ለአውቶቡሶች መቆምና በአግባቡ ያለማገልገል ምክንያት ነው ብለው ያምናሉ?					
9	በሰራ ክፍሉ ያለው የንብረት ማከማቻ መጋዘን፣ መረከቢያና ማሰራጨ እንዲሁም የኢንቬንተሪ መቆጣጠሪያ ስራዎችን በአግባቡ ለማከናወን በሚያስፈልጉ ቁሳቁሶች የተሟላ ነው::					
10	በድርጅቱ ውስጥ ያለው የንብረት አያያዝ ከብልሽት፣ ከጉዳት ስርቆት እና ከመሳሰሉት አደጋዎች እንዲጠበቁ የሚያደርግ ነው::					
11	የአመታዊ ንብረት ቆጠራ ሲከናወን ድርጅቱ ያሉትን ንብረቶች ሁሉ በመቁጠር መኖራቸውን በማረጋገጥ ይከናወናል::					
12	የውስጥ አዲሶች ድንገተኛ የሆነ የንብረት ቆጠራ ያደርጋሉ::					
13	በድርጅቱ ውስጥ ያለው የመለዋወጫ አጠቃቀም ደካማ ነው::					

ቅድስት ማሪያም ዩኒቨርሲቲ የአካውንቲንግ ኤንድ
ፋይናንስ ፋኩልቲ
የድህረ ምረቃ ፕሮግራም
ለቴክኒክ አ/ዋ/ስ/ሂደት ሠራተኞች የተዘጋጀ መጠይቅ

የተከበራችሁ የድርጅቱ ሠራተኞች፤

የዚህ መጠይቅ ዋና አላማ የንብረት አመራርና አመዘጋገብ ሁኔታ በአንበሳ የከተማ አውቶቡስ አገልግሎት ድርጅት በሚል ርዕስ መረጃ ለመሰብሰብ ነው። ጥናቱ የሚደረገው ሙሉ በሙሉ ለትምህርት አላማ ስለሆነ በየትኛውም መልኩ እርስዎን የማይነካና የማይጎዳ ነው። እርስዎም የሚሰጡት መረጃ እውነተኛ፣ ተዓማኒነት ያለውና ትክክለኛ መሆን ለጥናቱ መሳካት እጅግ ጠቃሚ ነው። በመሆኑም እያንዳንዱን ጥያቄ በጥንቃቄና በትክክል እንዲመልሱ በአክብሮት እጠይቅዎታለሁ።

ማስታወሻ፡-

- ስም መጥቀስ አያስፈልግም፤
- ተለዋጭ ምርጫ ለቀረበላቸው ጥያቄዎች መልሱን ይህን "✓" ምልክት በማድረግ ይመልሱ
- እባክዎን የተሞላውን መጠይቅ በሰዓቱ ይመልሱ፤

ስለሚያደርጉልኝ መልካም ትብብር በቅድሚያ አመሰግናለሁ።

አስቻለው

የሥራ መደብዎ _____

1. ድርጅቱ ያሉት የቴክኒክ ባለሞያዎች የአውቶቡሶችን ግዢ ለማስፈጸም በሚደረገው የስፔሲፊኬሽን ዝጅት ላይ ተሳትፈው ነበር ብለው ያምናሉ?

አምናለሁ አላምንም

2. የድርጅቱ የቴክኒክ ባለሞያዎች በመለዋወጫ ስፔሲፊኬሽን ዝግጅትና የተገዙ እቃዎችን ትክክለኛነት አረጋግጦ ወደ መጋዘን እንዲገቡ ማድረግ ላይ ይሳተፋሉ በሚለው ይስማማሉ?

በጣም እስማማለሁ እስማማለሁ በመጠኑ እስማማለሁ
 አልስማማም በጣም አልስማማም

3. የቴክኒክ ክፍሉ የሚገዙትን የአውቶቡስ መለዋወጫዎች በአግባቡ ሳይንሳዊ በሆነ መንገድ ይጠቀማል ብለው ያምናሉ?

በጣም እስማማለሁ እስማማለሁ በመጠኑ እስማማለሁ
 አልስማማም በጣም አልስማማም

4. የቴክኒክ ክፍሉ የሚያስፈልጉትን መለዋወጫዎች አስቀድሞ እንዲገዙለት ለማድረግ፣ ሳይንሳዊ በሆነ መንገድ አውቶቡሱ ላይ የተገጠሙ እቃዎች መቼ ሊበላሹ እንደሚችሉና ባጠቃላይ የመለዋወጫዎችና የአውቶቡሱን እድሜ ያካተተ ስራ ይሰራል በሚለው ይስማማሉ?

በጣም እስማማለሁ እስማማለሁ በመጠኑ እስማማለሁ
 አልስማማም በጣም አልስማማም

5. በድርጅቱ ውስጥ ያሉ አውቶቡሶች ሁሉ ያሉበት ሁኔታን ለማወቅ እንዲቻል፣ የሚያደርጉት እንቅስቃሴና የሚደረግላቸው ማንኛውም አይነት ጥገና በሂስትሪ ጃኬት ላይ ተከታትሎ ይመዘገባል?
ይመዘገባል አይመዘገብም

6. በተራ ቁጥር 6 ላይ ለተጠቀሰው ጥያቄ መልስዎ ይመዘገባል። ከሆነ ከምዝገባው የሚገኘውን ውጤት መሰረት ያደረገ ከአውቶቡሶቹ ጋር በተያያዘ ውሳኔ ለመወሰን የሚያስችል ጥናት ይሰራል በሚለው ይስማማሉ?
በጣም እስማማለሁ እስማማለሁ በመጠኑ እስማማለሁ
አልስማማም በጣም አልስማማም

7. የአውቶቡሶችን የአገልግሎት ዘመን ከማርዘም አንጻር የትኛውን የጥገና ዘዴ ነው የምትጠቀሙት?
እስከሚበላሽ ጠብቆ የመጠገን የቅድመ መከላከል ጥገና
ሁለቱንም እኩል እንጠቀማለን ግልጽ የሆነ ዘዴ የለም