ST. MARY'S UNIVERSITY

SCHOOL OF GRADUATE STUDIES

ASSESSMENT OF INVENTORY MANAGEMENT PRACTICES: THE CASE OF HABESHA STEEL MILLS PRIVATE LIMITED COMPANY

BY: FITSUM MANGUDAY

January , 2018

ADDIS ABABA, ETHIOPIA

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ID. SGS/0287/2008A

A THESIS SUBMITTED TO ST. MARY'S UNIVERSITY SCHOOL OF GRADUATES STUDIES IN PARTIAL FULLFULLMENT OF THE REQUIRMENTS FOR THE DEGREE OF MASTER OF BUSINESS ADMINISTATION IN MANAGEMENT

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DECLARATION

I declare that this thesis is my original work and prepared under the guidance of **Asst. Professor Tiruneh Legesse.** All the sources of material used for this thesis have been duly acknowledged. I further confirm that this thesis has not been submitted either in part or in full to any other higher learning institutions for the purpose of awarding any degree.

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ENDORSEMENT

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

Asst. Professor Tiruneh Legesse _____

Advisor **Signature & Date**

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First, I want to provide hymn to God who gave me the strength, protection, continuous guidance and direction in pursuing this programme and study become finalized. And, also I want to thank my wife Hiwot Abaw and my children for their encouragement and inspiration may God continue to bless them on their daily activities.

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LIST OF ACRONYMS

GTP-I: Ethiopian First Growth and Transformation

GTP-II: Ethiopian Second Growth and Transformation

GDP: Gross Domestic Product

IT: Information Technology

PLC: Private Limited Company

SPSS: Statistical Package for Social Sciences

EOQ: Economic Order Quantity

JIT: Just in Time

HSMP: Habesha Still Mill Plc

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ABSTRACT

This research sought to examine the assessment of inventory management practices of Habesha Steel Mills PLC. The study is applied descriptive survey design and mixed research approach. The target population was employees of Habesha Steel Mills PLC. And the total number of respondents undergoes in this study was 127. Primary data were gathered using semi structured questionnaires and interview. A statistical package for the social sciences version 23 is applied for the purpose of processing and analyzing the results. The study result revealed that the information technology and internal control system of Habesha Steel Mills PLC is highly effective in managing the inventory level and meeting the customer demands. However; further improve is required in areas like inventory physical counting inspection, handling of overstocking and under stocking of inventories, data accuracy and real time report preparation. Moreover, the Company is mainly used ABC inventory techniques to determine the materials demand of the customers. More importantly, lack of management support, insufficient qualified staffs and shortage of training are the major problems for assessment of inventory management practices. Based on the findings, it can concluded that the inventory management practice sat Habesha Steel Mills PLC has a contribution in improving the company's overall accomplishments in terms of service delivery, reducing damages and wastages, customer service, suppler relationship, inventory planning and scheduling and management of information reports. Finally, the study recommeds that the managements of the company should work hard to keep on the its superiorinventory management actvvities and try to overcome the shortcomings which were identified by this survey.

Key Words: Habesha Steel Mills PLC, Inventory management, Assessment

CHAPTER ONE
INTRODUCTION

This chapter consists of the background of the study, statement of the problem, objectives of the study, research questions, significance, scope and limitation of the study.

1.1.Background of the Study

Many organizations in today's business environment are forced to increase their market share both locally and globally in order to survive and sustain business growth. The challenge is to design an effective strategy to minimize the continued operation costs and maximizing returns to those organizations. Arnorld et al. (2008) defined inventory as the materials and supplies that a business or institution carries either for sale or to provide inputs or supplies to the production process. Render (2003) also explained that an inventory is a substantial part of total assets which are any stored resources that are used to satisfy the current or future customer needs.Chen (2005) indicated that inventories in many organizations occupy a large part of costs which possibly affects the profitability and manufacturing operations of the organization. So that, Sharma (2009) suggested that managing inventory efficiently has become an important operational weapon for companies to coup the competitive pressures and financial costs.

The concept of inventory management practices basically focuses on the techniques used to ensure that stock of raw materials or other supplies, work-in-progress and finished goods are kept at levels which provide maximum service levels at minimum costs (Lysons, 2000). According to Mpwanya (2005) and Agha (2010) the aim of inventory management is to meet the customer service and product availability at the lowest possible cost. The secret of a good inventory management system thus lies in balancing the two objectives optimum and harvesting the maximum marketing opportunities however ineffective inventor management system lead the companies to be uncompetitive and financial loss (Makweba, 2009).Consequently, organizations need to manage inventories effectively to prevent all types of wastage because profitability of any organization directly and indirectly is affected by the inventory management system.

Previous research studies found out that an effective inventory management is crucial organizational performance by maintaining adequate inventory for production, customer

satisfaction and yield high profitability (Anichebe and Agu, 2013; Bai and Zhong, 2008 and Bhausaheb & Routroy, (2010)). Also, Kitheka (2010) in his study confirmed that inventory management technology affects the performance of firms and it leads to improved customer service and reduced operational costs. Gakinya (2013) indicated that inventory management influence firm's supply chain performance by achieving service delivery, meeting forecast demands and gaining a competitive edge. Also, Victoire (2015) investigated the impact of inventory management on profitability in Rwanda and He found inventory management had significant impact on the company's overall performance. These deduced that an effective inventory management has a great contribution for companies whether they are small or big.

Though in the GTP I the progress that had achieved in manufacturing sector was not as such a remarkable, still in the GTP II the manufacturing sector is continuing as amainarea of concern. Habesha steel mills PLC is a steel manufacturing plant founded in 2007 at the industrial town of Dukem. It is a quality steel producer of the full range of reinforcement bars meeting international and Ethiopian standards ranging from 8mm to 32mm of grade B500WR with 12m length. It has key marketing segments with Dams, Sugar Projects, Road works, Universities, Highway Bridges, Government housing projects, Individual households, and Real Estate Companies.

It is therefore economically unsound and physically impossible to have goods arrive in a system exactly when demand for them occurs. Without sufficient inventory at hand Habesha steel mills PLC customers would have to wait for long periods before their orders are fulfilled. To ensure Habesha Steel Mills Company growth and productivity, it is important that effective inventory management be practiced to meet the customers' demands on time and to occupy the most strategic position in the target market. Therefore, this study assesses the inventory management practices in Habesha Steel Mills Company.

1.2.Statement of the Problem

Inventory management plays a role of coordinating and managing the activities of all business segments. According to Naliaka and Namusonge (2015) an effective inventory management is indispensable for a company to survive from different aspects including but not limited to its customer satisfaction, profitability, agility, responsiveness, reliability, cost reduction and proper assets management. For that reason, inventory managers must assess and make more accurate decision on inventory management issues (Bowersox, 2002).

In the GTP-II, the share of the industry sector in overall GDP will accordingly increase from 15.1% in 2014/15 to 22.3% by 2019/20. Similarly, the share of manufacturing industry in overall GDP is projected to increase from less than 5% in 2014/15 to 8% by 2019/2020.Along with, the demand for the reinforcement bar, steel structure and other basic metal products are extremely increasing since GTP-I. This is due to large government projects including the Great Renaissance Dam, urbanization, telecommunication, transportation and other projects.

The study of Alie et al. (2017) indicated that the common problems that have seen in Ethiopian basic metal industries among other such as unbalanced demand and supply of basic metal industries, poor IT system, inefficient and faulty practice, absence of material manager, poor delivery time, poor customer satisfaction, product unavailability, material cost, and material warehouse problems. This showed that many Ethiopian basic metal industries are exposed to the problems of inventory management system.

Accordingly, the need to know the of inventory management system is not only the today's burning issue for Habesha Steel Mills PLC but also the main concern in GTP II agenda as it is subsector of manufacturing sector. In this regard, researchers have tried to study the effectiveness of inventory management system such as Mamo (2016), Wodaje (2017) and Semahagn (2017). Those studies were focused on government organizations and hence it is quite difficult to conceptualize for manufacturing industries. Furthermore, to the best knowledge of the researcher, there are no previous studies related to inventory management practices in case of Habesha Steel Mills PLC.

Therefore, this study examines assessment of inventory management practices in the case of Habesha Steel Mills PLC.

1.3.Research Questions

This study tried to answer the following basic research questions.

- Is the information system adopted byHabesha Steel Mills PLC adequate for assessing inventory management practices?
- How does Habesha Steel Mills PLC internally control its inventory management system?
- How inventory management system contributes to the Habesha Steel Mills PLC operational activities?
- What method or technique does Habesha Steel Mills PLC used in determining material needs of its customers?
- What are the problems of inventory management system at Habesha Steel Mills PLC?

1.4.Objective of the Study

1.4.1. General Objective

The general objective of the study is assessment of inventory management practices of Habesha Steel Mills PLC.

1.4.2. Specific Objectives

The specific objectives of the study are to achieve the following;

- To assess whether the information system adopted by Habesha Steel Mills PLC is adequate or not.
- To examine the internal controls in the inventory management system of Habesha Steel Mills PLC.
- To envisaged the contribution of inventory management system of Habesha Steel Mills PLC in its operational activities.
- To indicate the method or techniques that Habesha Steel Mills PLC employs to determine the demand materials of the customer need.
- To identify the problems of inventory management system of Habesha Steel Mills PLC.

1.5. Significance of the Study

The Habesha Steel Mills PLC informs about the real situation taking place in its company on inventory management and be involved in efforts to improve its inventory management by designing strategies to manage inventory control system. The concerned policy makers aware of the situation occurred in steel manufacturing companies to revise the existing policies if possible and especially on the issues associated with inventory management. The economy of the country also stands to benefit from this research as steel manufacturing companies impacts other sectors and GTP II targets. Finally, the study is a stepping stone to provide useful contributions to the literature on the assessment of the inventory management system so that it adds up in the data bank of the academic areas.

1.6. Scope of the Study

Basically, the study is focused on the assessment of inventory management practices of Habesha Steel Mills PLC. The subject of inventory management is vast in its nature however this study is concentrated on issues related with information technology, contribution, problems, methods and internal controls of inventory management system. As a result, the management of Habesha Steel Mills PLC reconsiders the finding of the study in their annual inventory policy and procedures revision sessions.

1.7.Limitation of the study

The drawback of this paper is situated from its scope as it restricted to its own objectives. Other, the research is conducted only on inventory management system taking Habesha Steel Mills PLC as area of the study and in strict sense the results not pertained to other steel manufacturing companies because of difference in the experience and activities inventory system of these companies. Additionally, this study addressed only the employee's perspective via questionnaire and interview so that it not incorporates the views other stakeholder's sides.

1.8. Definition of Terms

Information Technology: Information Technology or IT is the study, design, creation, support, and management of computer-based information systems, especially software applications.

Inventory: it is one of the most significant items for many companies. It is reported on the balance sheet as current Asset because it will be converted to cash (sold) or consumed within one year or the operation cycle.

Inventory management system: it involves planning, organizing and controlling the flow of materials from their initial purchase unit through internal operations to the service point through distribution

Inventory management technique: is the inventory management tool to be employed by different organizations to attain an affective inventory management, efficiency production and profit maximization.

Inventor control: an accounting procedure or system designed to promote efficiency or assure the implementation of a policy or safeguard assets or avoid fraud and error etc

1.9. Organization of the Study

The study is organized under the following. Chapter one try to discuss on background of the study, statement of the problem, research questions, objectives of the study, significance, scope and limitation of the study. Chapter two provided theoretical foundation of the study through exploring the arguments of different theoretical perspectives and empirical evidences. The third chapter showed the research design and methodology such as research design, population and sampling, data sources and collection, methods of data analysis, reliability and validity. Thereafter, Chapter four focused on the results of analysis and discusses the findings. Finally, the study portrayed the conclusions drawn from the findings and gives relevant recommendations; this is presented in Chapter five.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

The literature review is divided into three sections. Section one consists of theoretical part which discusses the meaning of inventory and inventory management, model of inventory control techniques, objective of inventory management, problems of inventory control and role of inventory management. The empirical part provides other similar research evidences which support the study issues. The last section presents the conceptual framework of the study.

2.1. Theoretical Review

2.1.1. Essence of Inventory and Inventory Management

Arnorld*et al.* (2008) define inventory as the materials and supplies that a business or institution carries either for sale or to provide inputs or supplies to the production process. According to Render (2003) an inventory is any stored resources that are used to satisfy a current or future need. Additionally, Godana, and Ngugi (2014) ascertained that inventory is essential to organization for production activities, maintenance of plant and machinery as well as other operational requirements. Drury (1996) defined inventory as a stock of goods that is maintained by a business in anticipation of some future demand.

Inventory is one of the most significant items for many companies. It is reported on the balance sheet as current Asset because it will be converted to cash (sold) or consumed within one year or the operation cycle, whichever is longer. For most companies the expenses associated with financial and maintain inventory are substantial part of the cost of day to day business. Inventories are Assets held for daily business. It includes finished good supplies, raw materials, work in process and other types of goods. For various reasons, management is vitally interested on inventory planning and control. Thus inventory of the companies must be monitored carefully to limit the financing cost of inventory (Poul, 2000).

Inventory management is defined as a science based art of ensuring that just enough inventory stock is held by an organization to meet demand (Coleman, 2000; Jay & Barry, 2006). 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 (Benedict and Margeridis, 1999).

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 (Smaros, et al., 2003).Inventory constitutes one of the largest and most tangible investments of any organization which also decides their success in operation.

Inventory plays a decisive role in the growth and survival of an organization in the sense that failure to an effective and efficient management of inventory was mean that the organization was fail to meet its objectives. Customer desire has always been a vital issue in accompany not only to maintain sales but also to survive as a company. (Goldsby, 2003). Kotler (2002) pointed that Inventory management refers to all the activities and organizations involved in maintaining inventory for their operation so that adequate supplies were available and the costs of over or under stocks were low.

Inventory management is required at different locations within multiple locations to protect the regular and planned course of operation against the random disturbance of running out of materials. The scope of 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).

Therefore, inventory is part of the company assets so that the management of an organization becomes very concerned as it is always reflected in the company's balance sheet. Management is the whole process of planning, organizing, and controlling are the organic functions of management. These management activities are performed in each and every situation. Inventory Management is responsible for planning and controlling inventory from the raw material stage to the customer. Since inventory either results from production or supports it, the two cannot be managed separately and therefore must be coordinated. Inventory must be considered at each of the planning levels and is thus part of production planning, master planning with end items and materials requirements planning with components, parts and raw material (Arnold, et al. 2008).

Also, Lau and Snell (2006) noted that the inventory management scope is concerned with the replenishment and lead time, carrying costs of inventory, asset management inventory forecasting, inventory valuation, inventory visibility, available physical space for inventory, quality management, returns and defective goods and damage forecasting. To Stevenson (2009) inventory management is defined as a framework employed in firms in controlling its interest in inventory. It includes the recording and observing of stock level, estimating future request, and settling on when and how to arrange.

Irrespective of the variation from organization to organization in terms of scope of inventory management concerns, however, inventory management is likely to be comprised of such activities such as:

Demand management: ensuring that required operational and maintenance supplies are available in the right quantities and at the right time, forecasting future demand requirements, managing items with difficult supply and demand patterns related to seasonal demand, changes in end user applications or meeting demands for the customization of products, reviewing safety stock levels and controlling minimum and maximum amounts of inventory items of both quantity and value, implementing lean inventory policies, such as just in time (JIT) contracts to minimize investment in inventory.

Liaising with purchasing section: to ensure that supplies are replenished in accordance with corporate and procurement policies, developing cost-effective systems and procedures

relating to the ordering, procurement and budgeting of supplies and controlling the receipt, inspection (where necessary), recording, location and issue of supplies to users.

Safety and security of supplies: ensuring the avoidance of loss a result of deterioration, theft, waste and obsolescence, coordination of inventory to ensure that supplies can be rapidly located, preparation and interpretation of reports on stock levels, stock usage and surplus stock, liaison with auditors regarding all aspects of inventory, appropriate disposal of scrap, surplus and obsolete items.

2.1.2. Objective of Inventory Management

Schroeder (2000) stressed that inventory management has an impact on all business functions, particularly operations, marketing, accounting, and finance. He established that there are three motives for holding inventories, which are transaction, precautionary and speculative motives. According to Dobbler (1996) the main objective of inventory management and control is to provide services to the customers at a very minimum cost. The financial objective is the ability of funds to make the management's requirement of how much is needed in investing in inventory so that cash has not been tightened in a stock leaving other needs areas with no working capital. Under property protection objective, inventory represents money. So this objective gives the inventory controller the obligation to insure that inventories are safeguarded and protected against all possible hazards, including theft, wastage, and misappropriation of inventor.

Further, Reid and Sanders (2007) explained that inventory management mostly serves two main purposes. First, all responsible inventory management takes responsibility for availability of stock material. The availability of inventory is important for the smooth running of operation by compromising the customer service level and economy of operation. The second goal is by performing the required activity; efficient service level can be achieved by minimizing the optimal costs. Thus, to ensure that organization objectives are achieved; policies should be established by considering three questions: what to order, how much to order, and when to order.

2.1.3. Methods of Evaluating Inventory

There are four methods accounting uses to cost inventory namely first in first out (FIFO), last in first out (LIFO), average cost (A.C) and standard cost (S.C).

First In First Out (FIFO): This method assumes that the oldest (first) item in stock is sold first. In rising prices, replacement is at a higher price than the assumed cost. This method does not reflect current prices and replacement will be understated. The reverse is true in a falling price market.

Last In First Out (LIFO): This method assumes the nearest (last) item in stock is the first sold. In rising prices, replacement is at the current price. In a falling price market existing inventory is overvalued. However, the company is left with an inventory that may be grossly under stated in value.

Average Cost (A.C): This method assumes an average of all prices paid for the article. The problem with this method in changing prices (rising or falling) is that the cost used is not related to the actual cost.

Standard Cost (S.C): This method uses cost determined before production begins. The cost includes direct material, direct labor and overhead. Any difference between the standard cost and actual cost is stated as a variance (Arnold, *et al*. 2008).

2.1.4. Inventory Management Techniques

Here under are the inventory management tools to be employed by different organizations to attain an affective inventory management, efficiency production and profit maximization.

Economic order quantity: According to Bowersox (2002) the inventory management needs to be organized in a logical way so that the organization can be able to know when to order and how much to order. This must be attained through calculating the Economic Order Quantity (EOQ). Monetary request amount engages correlation to arrange their stock reestablishment on an ideal premise. For instance, the arrangement can be scheduled to happen from month to month, quarterly, half yearly, or yearly. By so doing, it enables firms to have insignificant limit costs or zero inside their circulation focuses. Along these lines, as associations attempt to enhance the stock administration, the EOQ and Re-Order Point (ROP) are necessary instruments that associations can utilize.

Just in time technique: The JIT technique is a Japanese philosophy which comprises having the right things in the right quality and amount in the correct place at the opportune

time. Utilization of JIT technique brings about the increment in quality, profitability, and effectiveness, enhanced correspondence, and abatements in expenses and squanders. Hutchins (1999) characterized JIT as a process that is prepared for moment response to the request without the necessity for any overstocking, either in the desire of the application being approaching or as a concern of improvident characteristics all the while. Hutchins (1999) additionally concentrated on that the prime objective of JIT technique is the accomplishment of zero stock, not simply inside the bounds of a single association at the end of the day all through the whole production network.

Vendor managed inventory: Vendor Managed Inventory is a streamlined way to deal with inventory management and request satisfaction whereby the merchant is completely in charge of the recharging of stock in light of opportune point of all data to the purchasers(retailer). This idea builds the client responsiveness Atnafu&Balda, Cogent Business &Management (2018) by lessening the free market activity hole consequently giving the fulfillment to end client by benefiting the coveted item when required. Store network accomplices must share their vision of interest, necessity, and requirement to set the regular destinations. Kazim (2008) identifies that upstream information exchanged to suppliers such as the current stock level and precise deals conjecture is the most vital element for the effective usage of Vendor Management Inventory.

ABC analysis: The ABC stock control technique relies on that the decision a little bundle of the things may usually address the weight of money estimation of the total stock. It is used as a part of the era method while a tremendous number of things may happen from a little part of the money estimation of stores. Accordingly, to manage stock control high regard things are more solidly controlled than low regard things. ABC examination is an essential action method that follows the Pareto principle concerning an organization's arrangement of stock. Most organization attempts and oversights are depleted on managing A things. C things get the base thought, and B things are in the centers. The ABC approach ranks using the following criteria: A things represent 70–80% of the firm's annual consumption approximation and just 10–20% of aggregate stocked items. B things represent 15–25% of annual use esteem and 30% of aggregate the stock, and C things characterize 5% of the annual application of esteem and half of total stocked items.

This technique has the following advantage;

i. It ensures a closer and a more strict control over such items, which were having a sizable investment.
ii. It helps management to in planning its inventory need
iii. It releases working capital, which would otherwise have been locked up for a more profitable channel of investment.
iv. It reduces inventory-carrying cost.
v. It enables the relaxation of control for the 'C' items and thus makes it possible for a sufficient buffer stock to be created.
vi. It enables the maintenance of high inventory turnover rate.

2.1.5. Inventory Costs

According to Douglas M. Lambert there were four major components of inventory carrying cost: capital cost, storage space cost, inventory service cost, and inventory risk cost.

Capital Cost. Also **s**ometimes called the interest or opportunity cost which type focuses upon what having capital tied up in inventory. The capital cost is frequently the largest component of inventory carrying cost. A company usually expresses it as a percentage of the value of the inventory the company holds. All companies seek to reduce inventory because management recognizes that holding excessive inventory provides no value added to the firm's operations.

Storage Space Cost. This cost category incorporates handling costs associated with moving products into and out of inventory, and storage costs such as rent, heating, and lighting. Such costs may vary considerably from one circumstance to the next.

Inventory Service Cost. This carrying cost component includes insurance and taxes. Depending

Upon the product value and type, the risk of loss or damage may require high insurance premiums. In most cases, there will be few, if any; significant changes from year to year in the tax and insurance components of the inventory carrying cost such as marine or inland insurance.

Inventory Risk Cost. This major component of inventory carrying cost reflects the very real possibility that inventory value may decline for reasons largely beyond corporate control. The inventory risk costs most of the time were due to management problem and

includes the costs associated with obsolescence, pilferage, damage, theft, and other risks to inventoried product.

2.1.6. Order/Setup Cost

The other inventory cost affecting total inventory cost is ordering cost or setup cost. Ordering cost refers to the expense of placing an order for additional inventory to the company, and does not include the cost or expense of the product itself. Setup cost refers more specifically to the expense of changing or modifying a production or assembly process to facilitate product line changes. Following some the inventory order costs.

Order cost. The costs associated with ordering or acquiring inventory have both fixed and Variable components (Parlar, 2000). Cost of the information system, facilities, and technology available to facilitate order placement activities can be considered as part of fixed order costs.

The fixed order cost will remains constant in relation to the number of orders placed. There were also a number variable order costs that vary in relation to the number of orders that were placed for more inventories. Some of such variable costs include reviewing inventory stock levels; Preparing and processing order requisitions or purchase orders; Preparing and processing receiving reports; Checking and inspecting stock prior to placement in inventory and preparing and processing payment.

Setup Cost. Production setup costs may be more obvious than ordering or acquisition costs. Setup costs were expenses incurred each time a firm modifies a production line to produce a different item for inventory. The set up cost has both fixed and variable cost components. The fixed portion of setup cost might include use of the capital equipment needed to change over production facilities, while the variable expense might include the personnel costs incurred in the process of modifying or changing the production line.

2.1.7. Benefits of Inventory

Many scholars pointed the benefits of adopting inventory system. According to (Pandy, 2003; Saleem,1997 and Lucey, 2003) some benefits for holding inventories in an organization which includes: Inventory helps the organization to make important decision in aspect of distribution and sales, gearing up production, preventing stock outs, striking a balance between the objectives of the stores department and those of the enterprise as the whole, avoiding un necessary wastage and blocking up of valuable working capital,

mitigating errors in demand, providing smooth service to customers at a lesser cost, to absorbing variation in demand and production as well as to take advantage of bulk purchasing discount.

Additionally, Lysons and Farrington (2006) analyze the reasons for keeping inventory. First, to reduce the risk of supplier failure or uncertainty- such as strikes, transport break-downs floods or snow, wars and similar factors. Second, to meet unacceptable demands or demand for customization of products as with agile production and to take advantage of lots or purchase quantities in excess of what is required for immediate consumptions and to take advantage of price and quantity discounts. Lastly, to protect against anticipated shortage and price increases, especially in time of high inflation or as deliberate policy speculation.

2.1.8. The Role of Inventory Management System

Inventory is importance for balance sheet that used as an increase the asset group on the company balance sheet, because many firms play a role to reduce their investment in fixed asset, plants, warehouses, office buildings, equipment and machinery by increasing their inventory (Mohamed, et.al 2016). Inventory management system is essential to approve the quality of control in stock handling and the area of customers served by consumer goods. A good inventory system will lead the company easily to know the time to be order. Inventory management system is also an essential means of tracing large shipment with in short time. An automated inventory system enables to minimize the risk of error and helps by providing up to date information of the stock items in the warehouse (AckahandGhansh 2016). The role of inventory management is arranging and organizing over all operation of the organization maintaining the transactions of sales appropriately keeping the level of stock to satisfy customer's needs. The achievement of inventory management is satisfying customer and driving profit by keeping the required inventory items, balancing the right order as customer needs.

Since all business has a limited working capital, inventory management responsible to make decisions what type of materials, the quantity bought, how much or within the capital limits. Hence, an effective inventory management is very necessary for any businesses successes. Bulky inventory keeping can tie up capital that may be used for other

investment to generate income is locked up without nothing. On other way less keeping inventory items can be a weaker to satisfy customer need and the organization can't achieve its setting goal (Naliaka and Namusonge, 2015).

Also Choi (2012) indicated that effective inventory management is essential in the operation of any business and keeping stock is used as an important strategy by companies to meet customers' needs without taking the risk of frequent shortages while maintaining high service level. Grossly, effective inventory management gives the chance to make continues competitive advantage and improvement of the competitive position of the companies. Moreover, it enhances the profit margins of the companies since it will reduce the operational and inventory cost thereby increase in profitability.

On the contrary, poor inventory management affect the organization cash flow, reduce efficiency and adversely affect the procurement performance out of the capital. The inventory system that helps the operating policies and organizational work flow for replenishing and controlling materials in store will be suspended. Surpluses cause financial hardships because they tie up capital and shortages lead to poor operational results, but satisfactory and scientific inventory control eliminates these shortcomings thus proving its importance. Accordingly, management of inventory system requires an appropriate system of making the decisions to keeping track of items in inventory and how much and when the order is applied (Ackah & Ghansh 2016).

Inventory management increases profitability- Forecasting, controlling & managing inventory increases productivity, while reducing costs, resulting in greater profitability .Accuracy improvements & time savings, in addition to the reduction of fixing costly mistakes, can result in considerable cost savings across an organization.

Inventory management improves decision-making Rapid, accurate data collection enables access to real-time business intelligence across all areas of your company Issue, event and project management tracking integrated with an inventory management system enables all associates to proactively identify & solve business issues. It increases customer satisfaction Responding to trends, seasonality, promotions & changing marketing conditions results in having the right products in stock for customers Properly identified products available to load enables customers to order & receive the correct Commodity quickly Customer

service tools integrated within an inventory managements equips the entire company to deliver consistent, personalized care for your customers. (PoulH.Zipkin, 2000)

Inventory management helps businesses be successful. That's as much of an understatement as saying the sun's surface is warm. Inventory management is a crucial part of any business" success.

Inventory Balance: Good inventory management helps you figure out exactly how much inventory you have. This makes it easier to prevent product shortages and keep just enough inventories on hand without having too much.

Accurate Planning: Using smart inventory management, you can stay ahead of the demand curve, keep the right amount of products on hand and plan ahead for seasonal changes. This goes back to keeping your customers happy all year long.

Employee Efficiency: You can empower your employees to help you manage inventory. Training employees to use barcode scanners, inventory management software and other tools helps them make better use of their time, and it helps your business make better use of its resources, both human and technological.

Inventory Tracking: If you have multiple locations, then inventory management becomes even more important because you need to coordinate your supplies at each location depending on differences in demand and other factors.

Time Saving: Inventory management is a great time-saving tool. By keeping track of all the products you have on hand; you can save yourself the hassle of doing inventory recounts to make sure your records are accurate. This once again requires inventory management software. (PanosKouvelis, 2002)

2.1.9. Problems of Inventory Control

Inventory Control is the supervision of supply, storage and accessibility of Commodity in order to ensure an adequate supply without excessive oversupply. It can also be referred as internal control - an accounting procedure or system designed to promote efficiency or assure the implementation of a policy or safeguard assets or avoid fraud and error etc. Inventory control not only looks into the physical balance of various commodities, but looks into aspect of minimizing the inventory cost. Avoiding shortages, avoidance

excessive stocking and, increasing inventory turnover are some of the main issues concerning inventory control. (PanosKouvelis, 2002). The inventory control ensures that making is completed as per schedule. Maximum use of storage capacity; one of the objective of inventory control is to make maximum use of storage capacity available. Proper storage of commodity, inventory control function includes supervision and control it is necessary that commodity of a particular type is required is immediately available. Efficient storage is made possible due to inventory control (PoulH.Zipkin, 2000)

Brent and Travis (2008) argued that, the angle of each department in the enterprise is generally different. Each department looks at inventories in a different manner. The production department wants to keep the inventories at a sufficient level at all times. The sales department, on the other hand, is interested in ensuring a maximum number of customer of for which it always wants a good stock of all the finished products. The transport department is interested in keeping its fleet intact and all the time in serviceable condition for which the department needs sufficient stock of spare parts, and consumable items as its disposal. The finance department may all the time feel that inventories are consuming capital and looking up the capital. The individual department thinking poses a problem to the inventory control which has to reconcile the conflicting claims of different departments within the framework of the policies and programmers of the enterprise. It is now being realized that inventory control problems have to be solved while keeping in view the problems of every phase of operation purchase, production, sales and to solve the problems of inventory control keeping the costs at their lowest. This can be achieved by the integrated approach.

2.1.10. Inventory Control Model

The inventory level moves up and down between two set points, the „minimum level" and the „maximum level". Inventory should not exceed the maximum level and should not below the minimum level. The inventory crossing the maximum level means over stocking and when it goes below the minimum level, it could result in stock out. In between two set points, that is, the maximum and the minimum level of inventory, reorder point is set. (G.Handley and T.M Within, 1979)

The minimum level is the level below which the inventory level is not allowed to fall. In case, for any reason, the stock goes below the minimum level, the matter is reported immediately.

Maximum level is a control point to avoid any extra stock. An attempt is made to avoid excessive receiving that may result in crossing the maximum level. Crossing of maximum reflects inadequate inventory control and should not be allowed without proper analysis of overall benefits. Failure to control maximum level results in non-moving or slow moving Commodity and obsolescence. Inventory turnover would be adversely affected in maximum level is not controlled. The maximum level is fixed by taking into consideration the lead time for the Commodity. (PanosKouvelis, 2002)

2.1.11. Inventory Control Technique

There are a number of techniques which play an impotent role in the inventory control program. These techniques are very help full in rationalization of inventory control approach and in formulation of the inventory control policies programs. (G.Handley and T.M Within, 1979)

Overhead charges on storage space: Different types of space are required for storing of various commodities. For example certain Commodity is required to be stored air-conditioned space, and others are part of the overhead cost.

Cost of handling facilities: Store operations involve handing of bulk Commodity, which includes loading and unloading, internal transportation, and shifting. Normally warehouse is equipped wheel-barrows are used in the warehouse for the handing commodity. Equipment requires regular maintenance.

Cost of manpower in stores division: The cost of man power in the stores division depends upon the centralized or decentralized operation of the warehouse more man power is required to manage various activities of receiving commodity, issues of commodity and inventory check if there are number of warehouse or sub-stores. The warehouse location, layout area/size and number influence the inventory carrying cost. If proper attention is not paid to these aspects, the inventory carrying cost will be very high.

Safeguarding Inventory: Inventory can be one of business most valuable assets, making inventory security crucial in a wide range of industries. inventory can be protected in a number of ways and with a number of tools, including technology, manpower and simple common

sense, reviewing a few examples of safeguarding inventory can shed light on common inventory security methodologies, helps to implement the ideal inventory safeguards for business (J.P saxena, Newdelhiviles. 2003)

Security Technology: Technology can be used to protect inventory from internal and external threats security alarms on doors and windows can alert local policies authorities in the case of a break-in. Advanced locks on doors protecting storage areas can reduce incidents of internal theft as well as break-ins. Security cameras can record theft in progress, helping to identify thieves for local authorities. Cameras can also discourage employees from even attempting to steal inventory in the first place. Advances in technology continue to provide new security options. Smart phones provide new opportunities to monitor security alarms and surveillance systems from anywhere in the world at any time (J.P saxena, New delhiviles. 2003).

Inventory Audits: Inventory audits systematically count inventory on hand and compare it with internal inventory records, receive records and Deliver records to spots incidents of theft, spoilage or other forms of shrinkage. Internal audits can act as a powerful psychological deterrent to internal theft, if employees know that there is random inventory counting they may be discouraged from even think about stealing (PanosKouvelis. 2002)

Physical Inventory: Physical inventory is a process where a business physically counts its entire inventory may be mandated by financial accounting rules or the tax regulation. Business may need to count inventory so component parts or Commodity can be restocked. Business may use several different tactics to minimize the disruption caused by physical inventory, Among this tactics inventory control system software is the one, it is a software which can speed up the physical inventory process and the other is perpetual inventory, may be less disruptive-many companies start using cycle count where by certain areas or products are counted on a rotating basis, Doing cycle counts eliminate the need to do a complete inventory count at the end of the year. Taking a physical inventory count at least once throughout fiscal year is a critical part of internal control procedures. An inventory count can confirm the quantity of inventory for financial statement purposes and can identify source of shrinkage and theft.

There are general guide lines for conducting a physical inventory count; the first is identifying what areas to count, many businesses have a multiple ware houses and indeed multiple areas within the same warehouse. Second establish a count date, if counting is going to verify quantities for financial statement purpose the count date should be close to

year end date as possible. Counting is time consuming so doing a count on a busy day is not advisable, pick a day and time of relative calm. Third is deciding who will count usually company staffs are responsible for counting and a supervisor should check counts conducted, to know whether there are discrepancies or not (PoulH.Zipkin, 2000).

Inventory Turnover: Inventory turnover is known as inventory turns, stock turn and stock turnover; It is used to measure the inventory management efficiency of a business. In general, a higher value of inventory turnover indicates better performance and lower value means inefficiency in controlling inventory levels. A lower inventory turnover ratio may be an indication of over stoking which may pose risk of obsolescence and increased inventory holding cost. However, a very high value of this ratio may be accompanied by loss of Deliver due to inventory shortage. (J.P saxena, Newdelhiviles. 2003)

2.2. Empirical Evidences

A study carried out by Bhausaheb and Routroy (2010) shows that companies are keen in managing their inventory so as to reduce costs, improve the quality of service, enhance product availability and ultimately ensure customer satisfaction. Rosenfield and Simchilevi (2010) founded that inventory management has a huge financial implication on both the customer satisfaction and financial performance of an enterprise. In Uganda, (Namagembe, 2010) her study revealed that a significant positive relationship between information sharing and inventory management. That means that if chain partners implement information technologies and collaborate among each other, then inventory management could improve. The study also indicated that a significant positive relationship between inventory management and customer satisfaction means that in order to obtain high levels of customer satisfaction there is need for better inventory management.

Victoire (2015) investigated the impact of inventory management on profitability in Rwanda using a manufacturing company as case study. The findings indicate that inventory management had significant impact on the company's financial performance. Morgan (2009) conducted a research study in United States of America on inventory management performance in case of Alien Technology Corporation. The findings revealed that efficiency inventory management of the Alien Technology Corporation is achieved by applying just in time purchase by assuring smooth and well maintained relationship with suppliers of materials to ensure constant supply when the corporation is in need of raw

materials to facilitate production. The researcher concluded that for any company to grow should take greater control on inventory because inventories are heart to the manufacturing companies for the purpose of meeting customer demand without running stock out or over stock situation.

The research done by Gashu (2016) at the Addis Ababa University entitled "Improving Inventory Management at SUR Construction Company" indicate that major inventory management techniques such as minimum-maximum level, safety level, lead-time analysis, inventory cost decision and economic order quantity are not applied in the company. Hence, researcher concludes that the main contributing factor for inventory management in effectiveness to the construction company, which results in high stocks outs and non-moving obsolescence items, rush ordering, unplanned and urgent purchasing items, is the staff development and capacity incompetence.

Ackahand Ghansha (2016) studied on the title of Assessment of Inventory Management; the researchers assessed the Performance of the Production Sector to find out how the management of inventory within work would be effective and bring a lot of cost savings for the organization to increase organizational profitability. In order to reduce the cost of holding to ensure the continuity of supply at the same time shows, how the management of inventory within operational works would be effective and bring a lot of cost savings to the organization. Therefore increasing organizational profitability since inventory represents the asset account. Despite the growing concern for non-stock procurement policies, inventory continues to play a vital role within organization supply chain

Ogbo and Ukpere (2014) studied on the assessment of inventory control management; according to their finding ineffective inventory control system drives high inventory cost and storage cost that decreases the organization profitability. More importantly, they found that improving inventory control system has a benefit of cost reduction improvising sales effectiveness, reduction of waste, transparency and accountability, easy storage and high inventory utilization .They recommend that in order to achieve all these organizations have to maintain flexible inventory services. Keitany et al. (2014) in their study showed that inventory control systems and lead time in materials management, an organization can achieve the benefits of effective use of labor, providing system flexibility, increasing

productivity, decreasing lead times, reduction in wastes, reduction in production costs, increased product quality are achieved. The ratings showed that inventory control systems played a vital role in organizational performance, and as such, organizations must ensure that inventory controlling system are highly involved in material management activities hence achieving higher organizational performance.

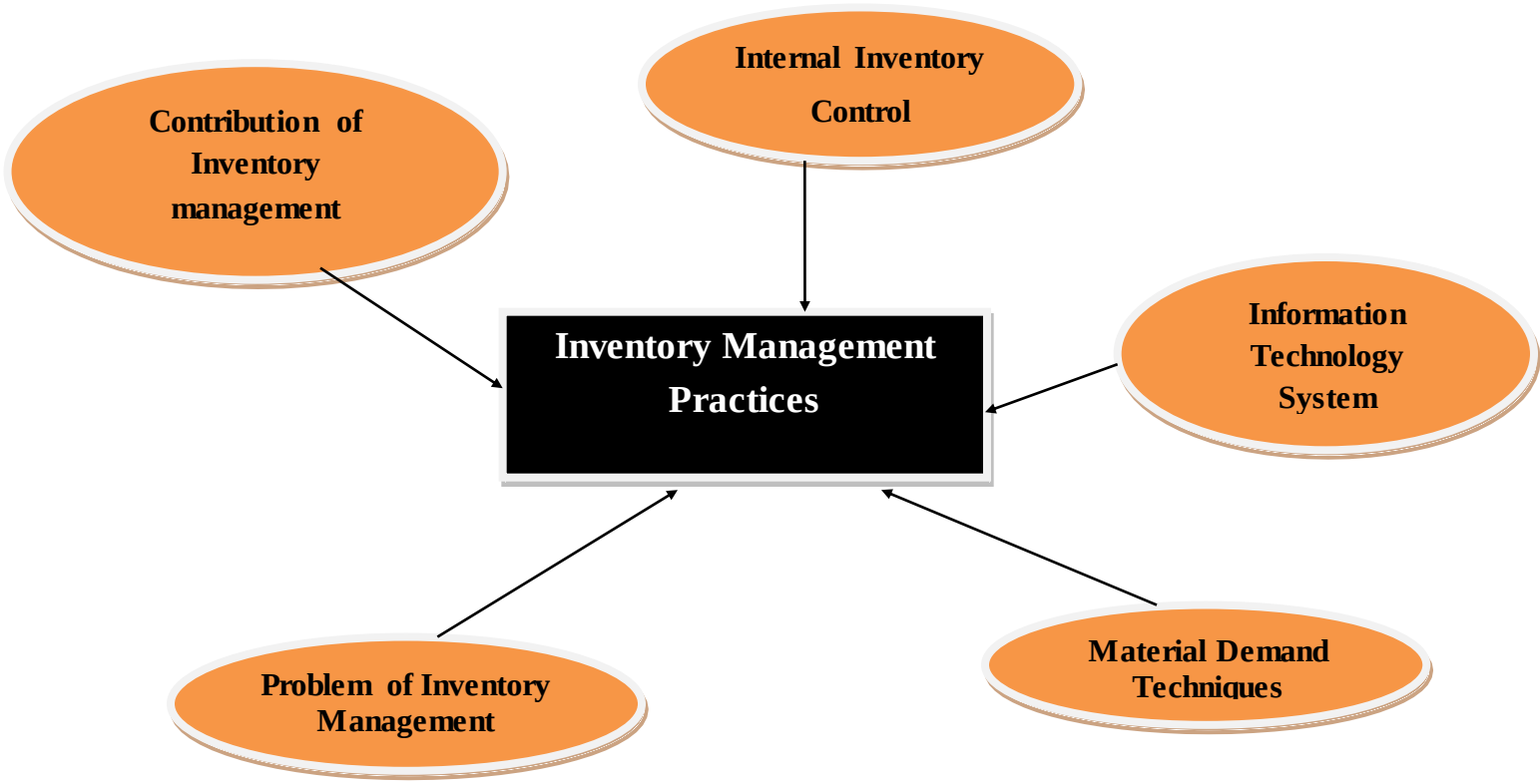
Nyambere (2015) investigated the Inventory Practices and Productivity of Large Manufacturing Firms in Nariobi, Kenya. The Research design used was descriptive design.. The sample size of the study included 50 large manufacturing companies. The study used primary data which was collected using a questionnaire and data was analyzed using descriptive statistics including mean and standard deviation by using Statistical Package for Social Sciences (SPSS) program. The study concluded that inventory management practices positively affect the productivity of large manufacturing firms in Nairobi, Kenya. Effective inventory management has become a critical issue for firms' productivity. Large manufacturing firms have saved millions of dollars in costs and decreased inventories while improving efficiency and customer satisfaction though inventory management practices. Inventory management has resulted to integration of better production methods to minimize costs and wastages.

2.3. Conceptual Framework

From the theoretical and empirical literature reviews the study realized that, inventory management notably important to organizations as it can result to minimize operational risks related with production losses, continues at an economic, customer satisfaction and sources of competitive advantage. Especially, PanosKouvelis (2002) discussed the inventory management system of the organization in four dimensions: internal inventory control system, contribution of inventory management system and problems of inventory management. Moreover, Alie et al. (2017) notified that information technology system is one of the one of the important factor for the successful inventory management practices particularity Ethiopian basic metal industries.

Therefore, based on the above themes the diagrammatic representation of the conceptual framework of the study is indicated below.

Figure 2.1: Conceptual Frameworks of the Study



Source: Customized inventory management practices (PanosKouvelis, 2002)

CHAPTER THREE

RESEARCH METHODOLOGY

This chapter describes in detailed about the execution of the study objectives such as research design, population and sampling technique, data sources and type, procedure of data collection, method of data analysis. Interview result and survey result are reported together in related to each research design.

3.1. Research Design

According to Kothari (2004) a research design is the conceptual structure within which research is conducted, it contribute the blue print for the process of collections, measurement and analysis of data. Thus, this study is applied a descriptive survey design because it enables the researcher to collect data from large population and to look a bigger overview about the subject matter, inventory management system of Habesha Steel Mills PLC.

Also, the study used mixed approach. Thus, the quantitative approach became suitable in gathering information on the subject matter from a wider section of the population via questionnaire. Parallelly, so as to have more detailed information on the subject issue and to discuss the open ended and interview questions the study applied qualitative approach.

3.2. Population and Sampling Techniques

3.2.1. Target Population

According to Mugenda and Mugenda (2003), a population is a well-defined or set of people, services, elements, and events or group of things that are being investigated. Accordingly, the population for this study consisted of management and staff of Habesha Steel Mills PLC with a population of 280 permanent skilled staffs from six departments. This research targeted the departments which have a direct relation to the inventory management system specifically: Operation and product quality department, Supplies and Logistic department, and Technique department. Moreover, the study did notincorporate15 staff divers from the target divisions because they might not respond back the way the study desire**s**. Therefore, the target population is 204 skilled permanent employees who have a direct relation to the study subject matter.

3.2.2. Sample Size and Techniques

Sample size is the number of items to be selected from the universe to constitute a sample. An optimum sample is one which fulfills the requirements of efficiency, representativeness, reliability and flexibility. Budgetary constraint must invariably be taken into consideration when we decide the sample and the sample size (Kothari, 2004).

Based on the Yamane (1967) the formula to find out the sample size (n) population is given as under at 95% confidence level with the degree of variability = 0.05

$$n = \frac{N}{1 + N(e)^2}$$

Where:-

n = Desired sample size

N =Total population size

e = Accepted error limit (0.05)

$$n = \frac{204}{1+204(0.05)^2}$$

$$n = \frac{204}{1.5100}$$

n = 135.0993

n = ~ 135 +5% (135)

n= 143

As a result, based on the formula this study needs a sample of 143 employees at 95% confidence interval. Consequently, the researcher distributed the questionnaire for one hundred forty three (143**)** sampled respondents.

Proportionate stratified sampling is applied in picking the respondents from samples. Each of the target departments treated as a separate stratum from where the respondents selected according to the proportion of the employees.

Table 3.1: Proportional Sample Size distribution

No.	Sub city	Population (Staff members)	%age from the total population	Sampled Staffs
1	Operation and product quality department	137	67.15	96
2	Supplies and Logistic department	13	6.37	9
3	Technique department	54	26.48	38
	Total	**204**	**100**	**143**

Sources: Own Survey , 2018

3.3. Sources of Data and Types

In this study both primary and secondary sources of data are employed. Primary data is collected by semi structured questionnaires and key informant interview. The secondary data is gathered from different books, research findings, and other various materials that relevant to this study.

3.4. Procedures of Data Collection

A semi structured questionnaire is chosen as the main data collection instrument. According to Kothari (2004) questionnaire has a specific concrete and predetermined questions to ensure that all respondents reply to the same set of questions. Therefore, the study data is gathered with the aid of questionnaires to assess the respondent's views on the inventory management system of Habesha Steel Mills. The questionnaire is organized in line with the study objectives and it composed of two sections. The first section of the survey questionnaire portrayed the general demographic information of the sampled respondents.

The second part contained the main questions which are linked directly with the research specific objectives. Some of the main questions were Likert scale rating format ranging from 1 to 5 where; strongly Agree (SA) = 5 and Strongly Disagree (SD) = 1. The use of Likert scale is to make easier for respondents to answer question in a simple way and the questionnaire is prepared in both Amharic and English language.

According to Sekaran (2003), the purpose of the pre-test activity is to ensure that the questionnaires are meaningful, easily understood and to achieve face validity. He also pointed out the minimum number for a pilot study is 15-30. This is in line with the recommendation by Malhotra (2008) that the sample size for pre-test is normally small,

ranging from 15-30 respondents. Thus, a pilot survey is conducted on minimum of 15 respondents prior to administrating the questionnaire to the sampled respondents. This activity is enabled the researcher to become more familiar with items of the questionnaires and prepare them accurately for main fieldwork. After this exercise, some of the items in the questionnaire are deleted and others improve upon so as to ensure both the validity and reliability of the data collection instruments.

After validation of the research instrument, requisite consents is obtained from the concerned management of Habesha Steel Mills PLC. After having permissions the questionnaires were distributed to the sample respondent's. To supplement the gap that are captured by the data that from questionnaire, key informant interview with Finance manager, Supplies and logistics manager are conducted. Finally, the researcher is performed the data coding, entering, editing and cleaning activity in order to check the consistency of the data which is collected from the respondents. Then after statistical package for the social sciences (SPSS) version 23 is applied for the purpose of processing and analysis of the results.

3.5. Method of Data Analysis

Sullivan (2001) opined that data analysis can be the most challenging and interesting aspect of research. It refers to deriving meaning from the data that had been collected in a study and the analysis assumed many forms. To achieve the research objectives both of qualitative and quantitative methods of data analysis is applied. In order to analyze the questionnaires quantitative the study is used simple descriptive statistics such as frequency, tables, and percentage. Also, the qualitative explanation is employed for key informant interview responses and open-ended questions which are analyzed thematically.

3.6. Validity and Reliability Test

3.6.1. Validity

Content validity refers to the extent to which an instrument represents the factors under study (Mugenda and Mugenda, 2003). In this study, content validity is applied by consulting the Advisor and inventory management experts. In order to improve the instruments, these experts and the research advisor looked at every question in the

questionnaire and forward comments to ascertain that the questions answer research objectives.

3.6.2. Reliability

Reliability of measuring instrument is its ability to produce consistency measurement each time when we administer an instrument to the same population and contain similar results then we say that the instrument is reliable (Kumar, 2005). For this study internal consistence reliability is determined by Cronbach's alpha. It represents number between 0 to 1 and scales with coefficient Cronbach's alpha greater than 0.7 considered as adequate to determine reliability (Zikmund et al., 2010).

Table 3.2: Reliability Test

No.	Items	No of Items	Cronbach's alpha
1.	Information technology	6	0.955
2.	Internal inventory control management	8	0.951
3.	Contribution of inventory management	7	0.929
4.	Overall Items	21	0.975

Source: Own Survey Data, 2018

As indicated in the table above, $\alpha = 0.951$ for internal inventory control management dimensions, $\alpha = 0.955$ for Information technology dimensions and $\alpha = 0.929$ for service contribution dimensions. This show the questions are reliable and have high internal consistency. Moreover, the overall reliability test (Cronbach's alpha) for the items is 0.975. This implies that the items were reliable, clear and easily understandable by the respondents.

3.8. Ethical Consideration

Above all, the researcher did not ask the study participants to engage into risks as a result of participating in this study. Besides, informed verbal consent was obtained from the key respondents during data collection. The respondents were given the right to refuse or take part in the study. All the primary and secondary data collection in the organization was under the permission of the managers and without any offence in ethical rules during the whole research process.

CHAPTER FOUR

DATA ANALYSIS, INREPRETATIONA AND PRESENTATION

The aim of this study is to examine the inventory management system at Habesha Steel Mills PLC. The presentation and discussion of the findings are done using descriptive statistics.

4.1. Response Rate

A total of one hundred forty three (143) questionnaires were distributed, out of which, one hundred thirty two (132) were returned. Among the returned responded questionnaires one hindered twenty seven (127) were successfully completed. In making conclusions, Mugenda and Mugenda (2003) indicated representativeness of the response rate to undergo the data analysis part; a response rate of 50% is satisfactory; a 60% is good, 70% and above is excellent. Based on the assertion of this scholar the response rate of this study is 88.81% which considered being an excellent.

Table 4.1: Response Rate

Response rate	Items Response Rate No.	Percent
Total Sample size	**143**	**100**
Successfully Collected	**127**	**88.8**
Uncompleted and unreturned	**16**	**11.2**

Source: Own Survey Data, 2018

So, the analysis was made based on 127 successfully responded questionnaires and done in line with the research questions and objectives.

4.2. Demographic Characteristics of the Respondents

This section sought to present the respondents relevant profile information related to gender, education, age and department at the Habesha Steel Mills PLC.

Table 4.2: Respondent's Demographic Profile

Characteristics		Frequency	Percentage
Gender	Male	108	85
	Female	19	15
Total		**127**	**100**
Age	18-30 years	46	36.2
	31-40 years	62	48.8
	41-50 years	19	15
Total		**127**	**100**
Education	12^{th} Grade complete	6	4.7
	Diploma	57	44.9
	First Degree	56	44.1
	Second Degree and Above	8	6.3
Total		**127**	**100**
Department	Operation and product quality department	56	44.1
	Supplies & logistics Department	21	16.5
	Technical Department	38	29.9
	Other	12	9.5
Total		**127**	**100**

Source: Own Survey Data, 2018

From Table 4.2, the study found that 85% of the respondents were male and 15% were female. This indicates that males form the largest number of workers at Habesha Steel Mills PLC in comparison to females. Therefore, measures should be put in place to attract more female workers.

In aspect of age, the majority (48.8%) of respondents were fall into the 31- 40 years age group followed by 18-30 years of age group (36.2%). Also, representing 15% respondents were under age group of 41-50 years. This asserted that most of the respondents employed at Habesha Steel Mills PLC are energetic and active economic agents.

Pertaining to the highest level of education, the majority of the respondents were diploma as shown holders (44.9%), 44.1% of the respondents have obtained first-degree, 6.3% of the respondents hold Masters Degree and 12^{th} Grade complete certificate holders (4.7%). This implies that the majority of respondents were BA/BSC and Diploma holders.

From the total number of the respondents, 44.1% were worked at operation and product quality department, Supplies & logistics Department accounted for 16.5% while 29.9%

were Technical Department. The rest of the respondents representing 9.5% were kept salient.

4.3. Method of Inventory Management

With this regard the researcher sought to reflect the respondent's feedbacks on the method/technique applied to ensure the demand material in line with customer's need.

Table 4.3: Methods of Inventory Management

Methods	Frequency	Percentage
Economic Order Quantity (EOQ)	3	2.4
Just In Time (JIT) Philosophy	3	2.4
The ABC inventory technique	117	92.1
Materials Requirements Planning (MRP)	4	3.1
Total	**127**	**100**

Source: Own Survey Data, 2018

The result showed that a total of 92.1% of the respondents replied that Habesha Steel Mills PLC used ABC inventory technique in determining demand of materials needed and 3.1 % understood that the Company applied Materials Requirement Planning (MRP) to determine required materials needed. The remaining Economic Order Quantity (EOQ) and Just In Time (JIT) Philosophy technique the respondents scored an equal percentage (2.4%). According from the finance and supplies and logistic department heads through interview, the company has used ABC inventory technique in determine material needs of the customers.

This designates that in Habesha Steel Mills PLC ABC inventory technique is mainly practical in determining demand of materials need of the customers.

4.4. Problems of Inventory Management System

Equally important, respondents were also asked the root cause for the ineffective inventory management system at Habesha Steel Mills PLC.

Table 4.4: Problems of Inventory Management

Items	Frequency	Percentage
lack of manpower	10	7.9
System	4	3.1
lack of management support and Leadership	82	64.6
Lack of accountability	22	17.3
User department negligence	9	7.1
Total	**127**	**100**

Source: Own Survey Data, 2018

In this regard, the data gathered from the questionnaires were disclosed that lack of management support 82 (64.6%) is the main setback for effective inventory management system at Habesha Steel Mills PLC followed by lack of accountability 22 (17.3%). Correspondingly, lack of manpower 10 (7.9%) and department negligence 9 (7.1%) was mentioned as the third possible cause for ineffective inventory management activities. Based on the interview results, the finance and supplies department indicated that the company inventory management challenged by insufficient qualified staff and lack of training for the employees particularly in the area of inventory management practices.

On the contrary, in the open ended section some of the respondents were reflected that both the department and top managements of Habesha Steel Mills PLC have given a great attention towards the inventory management process the Company. The areas of their support were in terms of giving a direction to lead and organize inventory management teams. Supporting this, the interview conducted with supplies and logistic manager of Habesha Steel Mills PLC confirmed that the top management assists the inventory process and recently the top management designed a structure to split the supplies and logistic departments as independent division to improve the inventory management process the company.

Wholly the analysis indicates that the biggest problems of inventory management system at Habesha Steel Mills PLC are lack of management support, insufficient qualified staff, and shortage of training as confirmed by respondents and interviewees.

4.5. Information Technology System

The extent to which the respondent's agreement on the statements concerning information technology related to inventory management is presented in the table below using percentage and frequency.

Table 4.5:Assessment of Information Technology Practices

Items	Level of Agreement										Total	
	SA		A		N		DA		SD			
	F	%	F	%	F	%	F	%	F	%	F	%
Availability of IT to control inventory management systems.	11	8.7	89	70.1	21	16.5	6	5.2	0	0	127	100
Data accuracy on inventory control system.	23	18.1	71	55.9	6	4.7	11	8.7	16	12.6	127	100
Generating of real time inventory reports	22	17.3	75	59.1	6	4.7	0	0	24	18.9	127	100
Improving coordination between departments	29	22.8	80	63	12	9.4	2	1.6	4	3.1	127	100
Improving customer services	27	21.3	78	61.4	15	11.8	5	3.9	2	1.6	127	100
Improving company-suppliers relationships	19	15	82	64.6	19	15	3	2.4	4	3.1	127	100

Source: Own Survey Data, 2018

Majority of respondents in this study (78.8%) agreed that Habesha Steel Mills PLC has information technology to control inventory management systems. About 6 (5.2%) of respondents disagreed inventory control was not supported by information technology at Habesha Steel Mills PLC while 21 (16.5%) respondents were indifferent for this issues. The interviewee also assured that the Company has used computerized system to control its inventory management activities. This implies that mass of the respondents and the interview results confirmed that Habesha Steel Mills PLC use information technology to manage its inventory stock

As illustrated on table 4.5 above, only 94 (74%) of the total respondents agreed with the statement "Information technology adopted by Habesha Steel Mills PLC has provided greater data accuracy on inventories control system". The remaining 27 (21.3%) and 6 (4.7%) respondents were disagreed and neutral with this statement respectively. As the interviewee said, particularly when it comes to Habesha Steel Mills PLC has utilized IT system to record and integrate inventories data to control easily the entire inventory

management activities. This deduces that inventory records were adequately accomplished due to the availability of automation of inventory control systems.

With respect to the application of IT to generate inventory reports, about 97 (76.4%) of the respondents were agreed that the information technology adopted by Habesha Steel Mills PLC useful to prepare real time inventory report. Representing 24 (18.9%) of the respondents disagreed that IT system generate real time inventory reports. Almost 6 (4.7%) of the participants became neutral with this concern. Moreover, the interviewee replied that the IT system of the Company enables to prepare a summarized real-time data and reduces bottlenecks that come from slow information flow. This shows that the information technology system of the Company save time to consolidate reports precisely.

Concomitantly, the majority of the respondents 109 (85.8%) were consented that the Company information technology system improved coordination among departments in aspect of inventory management. Insignificant numbers of respondents (4.7%) were disagreed whereas 14.7% respondents were indifferent. Along with, the analysis revealed that 105 respondents representing 82.7% were agreed that information technology system improved customer service and 7 respondents representing 5.5% were opposed while 15 (11.8%) were neutral. Also, most of the sampled employees 79.6% were agreed that information technology of Habesha Steel Mills PLC maintain a smooth supplier relationship.

The interview with the finance and supplies and logistic managers explained that the information technology system of the Company helps to save time and money boost productivity and maintain good supplier's relationship.

4.6. Internal Inventory Control System

In sourcing respondents' opinion, the response towards the inventory control activities used at Habesha Steel Mills PLC presented in the consecutive tables 4.6a and 4.6b

Table 4.6 (a): Internal Inventory Management

Items	Level of Agreement										Total	
	SA		A		N		DA		SD			
	F	%	F	%	F	%	F	%	F	%	F	%
Inventory items are aligned with the annual plan of the company.	25	19	82	64.6	14	11	2	1.6	4	3.1	127	100
Inventory management mitigates uncertainty in future demand.	33	26	69	54.3	19	15	1	0.8	5	3.9	127	100
Use strategic supplier partnership in managing inventories.	35	27.6	70	55.1	16	12.6	4	3.1	2	1.6	127	100
Controlling overstocking and under stocking of inventory.	34	26.8	68	53.5	6	4.8	5	3.9	14	11.1	127	100

Source: Own Survey Data, 2018

Zongjian (2013) defined inventory management as the continuing process of planning, organizing and controlling inventory aimed at minimizing the investment of inventory by balancing supply and demand. So, in order to bring a coordinated action it is essential for organizations to integrate inventory process in their annual plan initiatives. In the table 4.5a above, the opinion of employees disclosed that majority 107 (85%) of employees were agreed the inventory process are aligned with the annual plan of the Company, 4 (4.7%) disagreed, and 14 (11%) respondents were indifferent. This revealed most of the respondents replied that inventory items are linked with annual plan of the Company achievement.

The interview result disclosed that Habesha Steel Mills has an established comprehensive plan for each unit function to guide the company in one direction. This corporate plan is aligned both horizontally and vertically with the Company's activities, goals and objectives to achieve and sustain competitive advantage. As of per them explanation, the supply and logistic work plans specifically the inventory management activities of Habesha Steel Mills are linked with the corporate plan.

Inventory control involves ensuring that just enough inventory stocks are held by the company to meet both the current and future demand. Therefore, it is better to companies to visualize at all times to react accordingly to tackle the sudden changes in demand. In this

regard most of respondents 102 (80.3%) were agreed that for the statement the Habesha Steel Mills is maintained inventories to mitigate future demand uncertainty, while 4.7% respondents were disagreed, and 19 (15%) were indifferent. This indicates that considerable respondents affirmed that inventory is held at Habesha Steel Mills to smooth unexpected future customers demand. In line with this, the interview result revealed that the Company working the collaboration with stakeholders to build contingency planning capabilities. As per interviewee, this activity is undertaken to mitigate uncertainty of demand and to make quick decisions in order to optimize efficiency and customer requirements.

Involving suppliers early in the company's inventory process help to build good and permanent relationship with suppliers. A total of 105 (82.7%) of the respondents were agreed that Habesha Steel Mills PLC links inventory activities with its suppliers. About 16 (12.6%) of the respondents were neutral while 6 (4.7%) of the respondents disagreed. This implies that Habesha Steel Mills PLC ensures strategic supplier partnerships as an inventory management system. According to the interviewee, strategically the company interacts with its suppliers to ensure the competitive advantage and manage arm-length relationships based on win-win relationship.

Maintaining optimum levels of inventory helps to balance supply and demand by establishing minimum holding inventory stock and controlling under stocking of inventory. Concerning this issue, as indicated in the table 4.6a representing 34 (26.8%) of the respondents strongly agree, 68 (53.5%) of the respondents agreed, 6 (4.8%) of the respondent were neutral, 14 (11.1%) of the respondents disagreed and 5 (3.9%) were strongly agreed. This suggests the majority of the respondents replied that Habesha Steel Mills PLC properly manage overstocking and under stocking of inventories. Moreover, the interview with the supplies and logistic manager assured that there is a practice of control and follow up of overstocking and under stocking of inventory items responding to the unexpected demand of the customers as well as to reduce unnecessary inventory costs.

Table 4.6(b): Internal Inventory System

Items	Level of Agreement										Total	
	SA		A		N		DA		SD			
	F	%	F	%	F	%	F	%	F	%	F	%
Protect damage and obsolete.	34	26.8	70	55.1	17	13.4	5	3.9	1	0.8	127	100
Take less time to retrieve inventory information	50	39.4	60	47.2	11	8.7	5	3.9	1	0.8	127	100
Inventory items properly recorded and up to dated.	39	30.7	63	49.6	4	3.8	7	4.86	12	10.2	127	100
Internal auditors made surprise physical count of inventories.	45	35.4	53	41.7	6	4.7	13	10.2	10	7.9	127	100

Source: Own Survey Data, 2018

Highly efficient and effective material handling system leads to competitive advantage by making the distribution process quick, easy and minimizing inventory holding cost. In line with this, the respondents were also asked whether or not there is an effective inventory handling system to protect from damage and obsolete. The majority of 104 (81.9%) respondents were agreed, 6 (4.7%) were disagreed, and 17 (13.4%) were indifferent. This disclose that handling of inventories at Habesha Steel Mills PLC is carefully performed to protect inventories from any damages and stock out on time to avoid obsolete.

According to the information obtained from the interview, the finance and supplies and logistic heads, one of the aims of inventory management at Habesha Steel Mills PLC is to hold inventories at the lowest possible cost. That is avoid and clears the obsolete stocks and protects on hand inventories of the company from damages and ensure the right amount of stock in the right place at the right time.

Most of the respondents 110 (86.6%) were agreed that at Habesha Steel Mills PLC inventory items arranged properly and easy to get any information on inventory items when needed. The response also portrayed that 6 (4.7%) of the respondents were disagreed and 11 (8.7%) of the respondents were neutral. This revealed that the Company's activity on the inventory management is well organized to retrieve any items easily with no taking time much.

One of the main objectives of inventory recording is to keep an updated record on the items received, items in stock, items issued, informing of all movement of stock to the

management, and giving account of transactions to users upon request. The table above 4.6b illustrates that there is a high level agreement 102 (80.3%) for statement made about inventory records are properly up to dated of which 39 (30.7%) of the respondents strongly agreed. On the other hand, 6 (3.8%) of the respondents were neutral and 19 (15%) of the respondent were disagreed for this issues respectively. This reveals that most of the respondents support the existence of up to dated inventory records.

According to the information acquired from finance manager department head through interview conducted, the manager expressed that sometimes there is repetition of inventory items record. In the sense that one inventory items registered twice while existing one due to the negligence of employees to record the inventory items properly.

Respondents were asked on the issue of whether or not physical count inspection made on inventory stocks by internal auditors. Accordingly, 45 (35.4%) respondents were strongly agreed that there are unexpected audit practices in Habesha Steel Mills PLC whereas 53 (41.7%) of them were agreed. On the other hand, 23 (18.1%) of the respondents were disagreed while 4.7% of respondents were kept salient. From this one can infer that the internal auditor of the Company made surprise physical count on inventory items.

Related to internal audit inspection, the researcher interviewed the finance team leader to explain inventory physical counting practices of Habesha Steel Mills PLC. He clarified that there is a procedure and surprise auditing of stocks in different times throughout the year. Sometimes there is difference between inventory physical counting and stock balance. Then after the department give instruction to the concerned department office to correct timely so as to clean the financial statement.

4.7. Contribution of Inventory Management

The study pursued to analyze the responses the respondents on the contribution of inventory management to various aspects based on five-point Likert Scale.

Table 4.7: Contribution of Inventory Management

Items	Level of Agreement										Total	
	SA		A		N		DA		SD			
	F	%	F	%	F	%	F	%	F	%	F	%
Helped its inventory planning and scheduling.	14	11	77	60.6	32	25.2	1	0.8	3	2.4	127	100
Enhanced its service delivery.	30	23.6	71	55.9	21	16.5	4	3.1	1	0.8	127	100
Improved its customer service.	36	28.3	58	45.7	29	22.8	0	0	4	3.1	127	100
Reduced operational and inventory costs.	43	33.9	62	48.8	16	12.6	5	3.9	1	0.8	127	100
Improved management of information reports.	40	31.5	64	50.4	17	13.4	3	2.4	3	2.4	127	100
Minimized Wastages and damages.	47	37	56	44.1	18	14.2	4	3.1	2	1.6	127	100
Improved company's supplier relationship.	51	40.2	56	44.1	16	12.6	1	0.8	3	2.4	127	100

Source: Own Survey Data, 2018

Inventory management has to be systematically scheduled and guided by plan because it determines and regulate which items to order, when to order, what should be kept in stock and what quantities of them are stocked. As exhibited in the Table 4.7, the findings showed that majority of the respondents, 91 (71.6%) were agreed that inventory management system at Habesha Steel Mills PLC has helped in planning and scheduling of inventory. On the study 17.5% respondents were kept salient and 4 (3.2%) respondents disagreed. This implies that inventory management has the role on the inventory planning and scheduling.

The respondents were also asked to give an indication on the contribution of inventory management system of Habesha Steel Mills PLC related to service provision. The finding is summarized in table 4.7, most of the respondents 101 (79.5%) opined that the inventory management system of the Company has improved the activities through strengthen its service delivery. Representing 5 (3.9%) said that it did not help to improve service delivery whereas 21 (16.5%) respondents were neutral. This shows a great number of employees assured that at Habesha Steel Mills PLC the inventory management system plays role in enhancing the service provision.

Customer service level is one of the most important measurements of organizational performance because if the organization's does not have what its customers want, when they want it, they will probably look or the product elsewhere. As indicated in the table 4.7, the highest number of respondents 94 (74%) stated that Habesha Steel Mills PLC has improved the customer service. About 4 (2.7%) of respondents were strongly disagreed on

customer services progress and the remaining 29 (22.8%) replied neutral on this issue. This infers that sizable number of respondents indicates that inventory management system benefited the Company in advancing the customer satisfaction level.

According to Stevenson (2009), poor inventory management hampers operations, diminishing customer satisfaction and increasing operating costs. On the other hand, Wild (2002) added that effective inventory control supports the organizations to optimize the three targets; customer service, inventory cost and operating cost. These explanations are supported by 82.7% of respondents who said that inventory management reduced operational and inventory costs. Only 16 (12.6%) respondents were indifferent for this issue. The remaining 6 (4.7%) said that inventory management activities at Habesha Steel Mills PLC has no importance in reducing inventory costs. This entails most of the respondents confirmed that inventory management system has a role in cutting operational and inventory costs of the Company.

As tabulated in the table 4.7, 104 (81.9 %) of the respondents were agreed the statement that inventory management system of Habesha Steel Mills PLC improved management of information reports, of which 31.5% strongly disagreed. On the contrary, from the total respondents 6 (4.8%) respondents were disagreed and the rest 17 (13.4%) disclosed that they are neither agreed nor disagreed towards improving management of information reports. This specified that, significant number of respondents were agreed that on inventory management system of Habesha Steel Mills PLC improves to bring management of information reports.

Inventory costs is used to measure the extent to which an inventory management activities in position to keep the right quantity, the right place and the right time to decreases inventory wastage and damages. Related to this, the respondents representing 103 (81.10%) were agreed that inventory management system of Habesha Steel Mills PLC minimize costs in terms of lessening Wastages and damages. The remaining 6 (4.7%) and 18 (14.2%) respondents were disagreed and remain silent on the raised issue respectively. This designates majority of the respondents were consented that the inventory management activities of Habesha Steel Mills PLC is enabled to reduce inventory damages and wastages.

Effective inventory management has become a critical issue for company's' productivity because it has saved millions of dollars by maintaining a smooth relationship with their suppliers in various inventory management process. With respect to supplier relationship, From Table 4.7, the majority 107 (84.3%) of the respondents were agreed that inventory management system of at Habesha Steel Mills PLC consolidated the supplier relationship. About 16 (12.6%) were neutral while 3.2% of the respondents indicated that the Company's supplier relationship was poor. This implies that through inventory management system Habesha Steel Mills improve strategic supplier relationship at higher level.

Finally, managers at finance and supplies and logistic department were asked on the contribution of inventory management system at Habesha Steel Mills PLC. The Managers replied that better inventory management system enhances the overall performance of the Habesha Steel Mills. Particularly, in terms of indictors such as service delivery, customer services, stakeholder's relationships, costs and damages, they assured that the inventory management system benefited the company by improving these listed contribution dimensions.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

This chapter consists of three sections which include summary of the findings, conclusion and recommendations.

5.1. Summary of the Findings

As a result of the analysis and interpretation, the major findings of study are summarized below.

- It proved that ABC inventory technique is focal methods to determine the materials demand of the customers at Habesha Steel Mills PLC.
- Above average the result indicated that lack of management support, unqualified staffs and shortage of trainings are the major cause which affects effective inventory management system at Habesha Steel Mills PLC.
- The highest number of respondents assured that Habesha Steel Mills PLC use information technology to manage its inventory stocks.
- The survey result revealed that information technology adopted by Habesha Steel Mills PLC has greater data accuracy. Even if a significant number of respondents (21.3%) were disagreed.
- The majority of the respondents replied information technology of Habesha Steel Mills PLC is enabled to maintain good supplier relationship, improve interdepartmental coordination and increases customer service.
- Most of the respondents disclosed that information technology system of the Company save time to prepare inventory reports while sizable respondents (18.9%) were disagreed.
- The utmost of respondents were agreed that Habesha Steel Mills PLC held inventories to mitigate current and future demand uncertainty.
- The highest number of the respondents agreed that Habesha Steel Mills PLC applied strategically supplier partnership in each inventory process.
- The majority of the respondents replied that Habesha Steel Mills PLC properly managed its overstocking and under stocking of inventories. Whereas noticeable respondents (15%) were disagreed.

- The finding shows that inventory processes are aligned with the annual corporate plan of the Company.
- Most of the respondents disclosed that handling of inventories at the Habesha Steel Mills PLC is carefully performed to protect inventories from any damages and outdated.
- A substantial number of respondents revealed the internal control inventory management at Habesha Steel Mills PLC is well organized to retrieve any items easily with no taking much time.
- Largely, respondents were also indicated that at Habesha Steel Mills PLC physical counting inventory done by internal auditors while noticeable respondents (18.1%) were disagreed.
- The finding displays that there is a high levels of agreements for inventory items are recorded properly and up-to-date while a number of respondents (15%) were disagreed and it is also supported by the interview result.
- From the analysis, substantial number of the respondents supported that inventory management system of Habesha Steel Mills PLC contributed in improving service deliver there by advances customer satisfaction and maintains company- supplier relationship.
- The greatest number of employees agreed that in Habesha Steel Mills PLC the inventory management system plays a role in reducing damages and wastages as well as minimized unwanted operational and inventory costs.
- Significant numbers of respondents were opined that inventory management system of Habesha Steel Mills PLC improves both management of information reports and inventory planning and scheduling.

5.2. Conclusion

Based on the major findings of the study, the following conclusions are drawn:

This study tried to examine the inventory management system at Habesha Steel Mills PLC. In particular, the first objective was to assess the information technology system adopted at Habesha Steel Mills PLC. Therefore, the study result revealed the Habesha Steel Mills PLC has used information technology. It is highly effective in data accuracy, real time inventory reports, service provision, customer service and interdepartmental coordination. However, further upgrading is required to improve the data accuracy and real time report of inventory management system of the company.

The second objective was to examine the internal controls in the inventory management practices of Habesha Steel Mills PLC. The finding disclosed that the Company is largely effective in inventory internal controls related to mitigating unexpected demand uncertainty, taking strategic inventory supplier partnership, managing overstocking and under stocking of inventories, protecting inventories from damages and obsolete, retrieving inventory items easily, inspecting physical count and recording up to date inventory items. Nevertheless, a noteworthy number of respondents were claimed that the internal inventory control of the Company is weak to record inventory items properly up to date, inspect the physical inventory items timely and handle overstocking and under stocking of inventories.

The third objective was show the contribution of inventory management system of Habesha Steel Mills PLC towards its performance. Based on the findings, it can concluded that theinventory management system at Habesha Steel Mills PLC has a contribution in improving the company's overall operational activities in terms of service delivery, customer service, suppler relationship, management of information reports and inventory planning and scheduling. Besides, it has a role in reducing damages and wastages as well as minimizing unwanted operational and inventory costs.

Furthermore, the rest of the objectives were on the methods and problems of inventory management system of Habesha Steel Mills PLC. Through the findings the study revealed that ABC inventory techniques the main methods to determine the materials demand of the customers. More importantly, from the interview feedbacks and respondents; lack of management support, insufficient qualified staffs and shortage of training are considered as

the main problems for effective inventory management system of Habesha Steel Mills PLC.

To conclude, inventory management system at Habesha Steel Mills PLC is effective and has a great contribution on the company's overall accomplishments

5.3. Recommendations

Based on the conclusions of the Study, the researcher recommends the following:

The finding indicated that though information technology system of Habesha Steel Mills PLC is highly effective still some of the employees of the company did not support specifically in data recording accuracy and preparing real time of the IT system. Therefore, the managements of the company should give better attention just by arranging meeting with the employees to review the problems, find out why the IT system inefficient to record inventory items accurately, generate real time reports appropriately and take a remedial action.

Most of employees confirmed that the existence of sudden inventory physical inspection and proper inventory items record but still there is inconvenience in works of the internal inspection and repetition of inventory items record. Therefore, the management of Habesha Steel Mills PLC has to follow up the operations of the inventory management process by strengthening the internal auditor teams and create accountability for those staffs who are negligent to record inventory items properly.

Based on the analyses, Habesha Steel Mills PLC should try to align its internal inventory management operations, especially in managing overstocking and under stocking that can lead to achieve competitive advantage. In this regard, the managements of the Company has to ensure that inventory items are at the right place, at the right time and in the right quantity just by consolidating strategic orientation and creating accurate inventory data to forecast demand.

The finding also indicated that lack of management support is the major cause for ineffective inventory management system at Habesha Steel Mills PLC. Hence, the management has to fully participate in inventory management process in creating safe workplace and follow upping the appropriateness and implementation inventory procedures.

Habesha Steel Mills PLC need to invest towards creating learning capabilities in general and inventory management learning capability in particular for supplies personnel and other staffs via availing various trainings so that such capabilities can contribute for the effective of inventory management.

Policy objectives of the GTP II entail maintaining encouraging main sectors of the economy, manufacturing sector. Looking this, the need to assess periodically the inventory management system is not only the issues of Habesha Steel Mills PLC but also the main concern in GTP II agenda. Therefore, policy analysts must look at a wider range of issues than those highlighted here. Nevertheless, the importance of this benchmark analyses should not be minimized. It provides useful way to focus on policy work by indicating some area of inventory management practices improvements.

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APPENDICES

Appendix 1

ST. MARY'S UNIVERSITY

SCHOOL OF GRADUATE STUDIES

Questionnaire for Sample Employee Respondents

Dear respondents:

This survey is developed with an objective to conduct a research on ***Assessment of Inventory Management Practices for the Case of Habesha Still Mills PLC.*** It helps to complete Master of Business Admiration at St. Mary's University**.** Therefore, your response in this regard has a paramount importance for the achievement of the research objectives. The data is meant purely for the academic purpose only so that you are required to provide your genuine response for each of the question appeared on the questionnaire. Finally, I hugely appreciate in advance for your willingness in responding to the questionnaire

If you would like further information about this study, or have problem in completing this questionnaire please contact me via +251-930-32-81-54

Thank you in advance!

Instruction

- As for the guarantee of confidentiality you are not required to give your name.
- You may decline or leave any questions blank that you do not wish to answer.
- Please use cross mark (√) in the relevant boxes to indicate your response

Part One: Demographic Characteristics

1. Sex: ☐ Male ☐ female

2. Age: ☐ 18-30 years ☐ 41-50 years

☐ 31-40 years ☐ Above 50 years

3. Educational Level:

☐ Below12th Grade complete ☐ 12th Grade complete

☐ Diploma ☐ First Degree

☐ Second Degree and Above

4. Department:

☐ Operational and product quality Department

☐ Supplies & logistics Department

☐ Technical Department

Other_____

Part Two: Method and Problems of Inventory Management

5. What are the methods/ techniques your company employs to determine the demand of materials your customers need?

☐ Economic Order Quantity (EOQ)

☐ Just In Time (JIT) Philosophy

☐ The ABC inventory technique

☐ Materials Requirements Planning (MRP)

Others (please specify):_____

6.What do you think the root cause for the effective inventory management system at Habesha Steel Mills PLC?

☐ Lack of manpower

☐ The pitfalls of the system

☐ Lack of management support and leadership

☐ Lack of accountability

☐ User department negligence in ordering, planning, specifications

Others (please specify):_____

Part Three: Please rank your level of agree or disagree with the following statements.

1= strongly disagree 2= Disagree 3= Neutral 4= Agree 5= strongly agree

	Information Technology (IT)	1	2	3	4	5
7.	The Habesha Steel Mills PLC has Information Technology to control inventory management systems.					
8.	The Information Technology adopted by Habesha Steel Mills PLC has provided greater data accuracy on inventories control system.					
9.	IT has enabled generation of real time inventory reports for effective inventory management processes					
10.	Information Technology has improved coordination of inventory management decisions between departments involved in inventory management					
11.	The Information Technology adopted by Habesha Steel Mills PLC has improved speed of service to customers					
12.	The Habesha Steel Mills PLC computers are linked with those of suppliers in a real time environment.					
	Internal Inventory Control Management					
13.	In our organization, the inventory items are aligned with the annual plan of the company.					
14.	In our organization, inventory management maintained to mitigate uncertainty in future demand.					
15.	In our organization we use strategic supplier partnership in managing inventories.					
16.	In our organization, the supervisors control and follow-up overstocking/under stocking of inventory.					
17.	In our organization, there is an effective inventory handling system to protect damage and obsolete.					
18.	In our organization, retrieval of information in inventory store takes not much time.					
19.	In our organization, records in the inventories are properly up to dated.					
20.	In our organization, internal auditors made surprise physical count of inventories.					

	Contribution of Inventory Management System					
21.	Inventory management system of Habesha Steel Mills PLC helped its inventory planning and scheduling.					
22.	Inventory management system of Habesha Steel Mills PLC enhanced its service delivery.					
23.	Inventory management system of Habesha Steel Mills PLC improved its customer service.					
24.	Inventory management system of Habesha Steel Mills PLC reduced operational and inventory costs.					
25.	Inventory management system of Habesha Steel Mills PLC improved management of information reports.					
26	Inventory management system of Habesha Steel Mills PLC minimized Wastages and damages.					
27.	Inventory management system of Habesha Steel Mills PLC improved company's supplier relationship.					

28. Could you provide any suggestions for effective inventory management at Habesha Steel Mills PLC?

_____

_____

_____

_____

Appendix 2

ST. MARY'S UNIVERSITY

SCHOOL OF GRADUATE STUDIES

Interview Questions for Targeted Department's Managers

1. How do you describe the internal inventory management system Habesha Steel Mills PLC?
2. Does the company use the information system to manage its inventory?
3. Are there any problems on the inventory management system of your company?
4. Did you observe the contribution of inventory management system on the performance Habesha Steel Mills PLC?
5. What type of inventory management techniques does Habesha Steel Mills PLC used in handling inventory?

Appendix 3

Frequency Table

Reliability Statistics

Cronbach's Alpha	N of Items
.975	21

Reliability Statistics

Cronbach's Alpha	N of Items
.955	6

Reliability Statistics

Cronbach's Alpha	N of Items
.951	8

Reliability Statistics

Cronbach's Alpha	N of Items
.929	7

IT to control inventory management systems.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly disagree	4	3.1	3.1	3.1
	disagree	2	1.6	1.6	4.7
	neutral	21	16.5	16.5	21.3
	agree	89	70.1	70.1	91.3
	strongly agree	11	8.7	8.7	100.0
	Total	127	100.0	100.0	

IT provided greater data accuracy on inventories control system.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly disagree	4	3.1	3.1	3.1
	disagree	2	1.6	1.6	4.7
	neutral	27	21.3	21.3	26.0
	agree	71	55.9	55.9	81.9
	strongly agree	23	18.1	18.1	100.0
	Total	127	100.0	100.0	

IT has enabled generation of real time inventory reports

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly disagree	6	4.7	4.7	4.7
	neutral	24	18.9	18.9	23.6
	agree	75	59.1	59.1	82.7
	strongly agree	22	17.3	17.3	100.0
	Total	127	100.0	100.0	

IT improved coordination of inventory management decisions between departments

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly disagree	4	3.1	3.1	3.1
	disagree	2	1.6	1.6	4.7
	neutral	12	9.4	9.4	14.2
	agree	80	63.0	63.0	77.2
	strongly agree	29	22.8	22.8	100.0
	Total	127	100.0	100.0	

IT improved customers services.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly disagree	2	1.6	1.6	1.6
	disagree	5	3.9	3.9	5.5
	neutral	15	11.8	11.8	17.3
	agree	78	61.4	61.4	78.7
	strongly agree	27	21.3	21.3	100.0
	Total	127	100.0	100.0	

Computers linked with those of suppliers in a real time environment.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly disagree	4	3.1	3.1	3.1
	disagree	3	2.4	2.4	5.5
	neutral	19	15.0	15.0	20.5
	agree	82	64.6	64.6	85.0
	strongly agree	19	15.0	15.0	100.0
	Total	127	100.0	100.0	

In our organization, the inventory items are aligned with the annual plan of the company.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly disagree	4	3.1	3.1	3.1
	disagree	2	1.6	1.6	4.7
	neutral	14	11.0	11.0	15.7
	agree	82	64.6	64.6	80.3
	strongly agree	25	19.7	19.7	100.0
	Total	127	100.0	100.0	

In our organization, inventory management maintained to mitigate uncertainty in future demand.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly disagree	5	3.9	3.9	3.9
	disagree	1	.8	.8	4.7
	neutral	19	15.0	15.0	19.7
	agree	69	54.3	54.3	74.0
	strongly agree	33	26.0	26.0	100.0
	Total	127	100.0	100.0	

In our organization we use strategic supplier partnership in managing inventories.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly disagree	2	1.6	1.6	1.6
	disagree	4	3.1	3.1	4.7
	neutral	16	12.6	12.6	17.3
	agree	70	55.1	55.1	72.4
	strongly agree	35	27.6	27.6	100.0
	Total	127	100.0	100.0	

In our organization, the supervisors control and follow-up overstocking/under stocking of inventory.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly disagree	3	2.4	2.4	2.4
	disagree	3	2.4	2.4	4.7
	neutral	19	15.0	15.0	19.7
	agree	68	53.5	53.5	73.2
	strongly agree	34	26.8	26.8	100.0
	Total	127	100.0	100.0	

In our organization, there is an effective inventory handling system to protect damage and obsolete.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly disagree	1	.8	.8	.8
	disagree	5	3.9	3.9	4.7
	neutral	17	13.4	13.4	18.1
	agree	70	55.1	55.1	73.2
	strongly agree	34	26.8	26.8	100.0
	Total	127	100.0	100.0	

In our organization, retrieval of information in inventory store takes not much time.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly disagree	1	.8	.8	.8
	disagree	5	3.9	3.9	4.7
	neutral	11	8.7	8.7	13.4
	agree	60	47.2	47.2	60.6
	strongly agree	50	39.4	39.4	100.0
	Total	127	100.0	100.0	

In our organization, records in the inventories are properly up to dated.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly disagree	1	.8	.8	.8
	disagree	5	3.9	3.9	4.7
	neutral	19	15.0	15.0	19.7
	agree	63	49.6	49.6	69.3
	strongly agree	39	30.7	30.7	100.0
	Total	127	100.0	100.0	

In our organization, internal auditors made surprise physical count of inventories.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly disagree	1	.8	.8	.8
	disagree	5	3.9	3.9	4.7
	neutral	23	18.1	18.1	22.8
	agree	53	41.7	41.7	64.6
	strongly agree	45	35.4	35.4	100.0
	Total	127	100.0	100.0	

Ims helped its inventory planning and scheduling.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly disagree	3	2.4	2.4	2.4
	disagree	1	.8	.8	3.1
	neutral	32	25.2	25.2	28.3
	agree	77	60.6	60.6	89.0
	strongly agree	14	11.0	11.0	100.0
	Total	127	100.0	100.0	

Ims enhanced its service delivery.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly disagree	1	.8	.8	.8
	disagree	4	3.1	3.1	3.9
	neutral	21	16.5	16.5	20.5
	agree	71	55.9	55.9	76.4
	strongly agree	30	23.6	23.6	100.0
	Total	127	100.0	100.0	

Ims improved its customer service.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly disagree	4	3.1	3.1	3.1
	neutral	29	22.8	22.8	26.0
	agree	58	45.7	45.7	71.7
	strongly agree	36	28.3	28.3	100.0
	Total	127	100.0	100.0	

Ims reduced operational and inventorycosts.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly disagree	1	.8	.8	.8
	disagree	5	3.9	3.9	4.7
	neutral	16	12.6	12.6	17.3
	agree	62	48.8	48.8	66.1
	strongly agree	43	33.9	33.9	100.0
	Total	127	100.0	100.0	

Ims improved management of information reports.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly disagree	3	2.4	2.4	2.4
	disagree	3	2.4	2.4	4.7
	neutral	17	13.4	13.4	18.1
	agree	64	50.4	50.4	68.5
	strongly agree	40	31.5	31.5	100.0
	Total	127	100.0	100.0	

Ims minimized Wastages and damages.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly disagree	2	1.6	1.6	1.6
	disagree	4	3.1	3.1	4.7
	neutral	18	14.2	14.2	18.9
	agree	56	44.1	44.1	63.0
	strongly agree	47	37.0	37.0	100.0
	Total	127	100.0	100.0	

Ims improved company's supplier relationship.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly disagree	3	2.4	2.4	2.4
	disagree	1	.8	.8	3.1
	neutral	16	12.6	12.6	15.7
	agree	56	44.1	44.1	59.8
	strongly agree	51	40.2	40.2	100.0
	Total	127	100.0	100.0	