Effect of Inventory Management Practices on the Performance of Manufacturing Company: The Case of Addis Transformer and Switch- Gears

By: Bella Biniyam

A Thesis Submitted to Addis Ababa University School of Commerce
In Presented in Partial Fulfillment of the Requirements of Master of Arts Degree in Logistics and Supply Chain Management

Adviser: Zelalem.Bayisa (PhD)

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Student Declaration

I, hereby confirm that this thesis, The Effect of Inventory Management Practices on the Performance of Manufacturing Company: The Case of Addis Transformer and Switch-gears S.C., is my own original work and has not been submitted for credit towards a degree at another institution of higher learning. All sources used to support this research have also been properly referenced.

Signed: _____ Date: _____

Bella Biniyam

Certification Statement

The present research has been submitted for review with my approval as appointed academic adviser.

Advisor

Zelalem Bayisa (PhD)

_____

Date & Signature

Addis Ababa University
School of Commerce

This is to certify that Bella Biniyam's thesis, titled 'Effects of Inventory Management Practices on the Performance of Manufacturing Companies: The Case of Addis Transformer and Switch-gears S.C.' submitted in partial fulfillment of the requirements of the Degree of Master of Art in Logistics and Supply Chain Management, fulfils with the University's guidelines, and fulfills the standard of excellence in terms of originality and quality.

Signed by the Examining Committee:

Advisor _____Signature _____ Date_____

Examiner (Internal) _____Signature _____ Date _____

Examiner (External) _____Signature _____ Date _____

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List of abbreviations and Acronyms

ATS	Addis Transformer and switch-gears S.C
EOQ	Economic Order Quantity
JIT	Just In Time
IM	Information Management
IS	Information System
KPI	Key Performance Indicator
MROS	Maintenance Repaired and Operation Supplies
SPSS	Statistical Package for Social Science
VIM	Vendor Managed Inventory
WIP	Work In Process (progress)

ABSTRACT

Every manufacturing company's capacity to use resources effectively and efficiently depends on its inventory management practices hence the goal of this study was to investigate how this practice affected the performance of manufacturing companies in the case of Addis Transformer and Switch gears S.C. The study employed a mixed research approaches to obtain both qualitative and quantitative data starting with the general aims and working towards the particular objectives of how inventory management practices impact the operation of the organization. Both primary and secondary data were employed in the investigation process. Questionnaire was used to gather the primary data. 76 questionnaires were distributed and 71 resources were analyzed using correlation and multiple regression methods using SPSS version 20.The study reveals a positive correlation between the dependent variable(performance) and the independent factors (demand foresting, stock-out, holding cost, technology and employee skill) but the independent variable stock-out has negative correlation with the dependent variable performance .However, the result of the regression analysis suggests that the independent variables accounts for 64.6% of the variance on the performance. The study suggested that the manual inventory management methods used by ATS need to be better systematized and supported by software. The study again recommends that the company must update its outdated working practices with more cutting-edge technology. It is preferable to adopt a variety of technological tools so as to improve its performance and the majority of the present employes of the companies are young professionals with limited experiences so providing training and courses will be a great help to improve the employee's skill.

Keywords: Performance, demand forecasting, stock-out, holding cost, technology, employee skill

CHAPTERONE

INTRODUCTION

1.1. Background of the study

All businesses aim to maximize profitability over time, but doing so requires effort, especially in intensely competitive industries. Manufacturing businesses in particular must manage a variety of challenges efficiently if they are to achieve short- and long-term goals. Many companies depend on inventories for the development of products and the delivery of services similar to this every company's use inventory to some level and require effective inventory management control in order to perform efficiently. This perspective explains the research demonstrating that inventory management practices forecasts business or organization performance in service and manufacturing sectors (Nishantha, 2020). This evidence has offered in number of nations including Ghana, Kenya, and Nigeria.

There are two types of inventories in manufacturing organizations. The first is an inventory of the administrative materials needed to carry out other administrative tasks, such as a computer, printer, stationery, and other items. The second and greatest stockpile is employed in production as a raw material and supplies. According to certain research (Heba&Ahemed, 2021) service businesses like banks relay on efficient inventory management techniques because they primarily require the inventory for administrative purpose. In manufacturing business, inventory management may be more significant and have a higher influence on business performance.

Inventory is value or the amount of raw materials, supplies work in process (WIP) and completed program retained or held for the future (Lysons & Gillingham, 2023).Row materials are commodities that are utilized to manufacture the final goods while work in process (WIP) is inventory that is actively being worked on .WIP expenses are made up of raw materials (labor charges) that are still in production at the end of the accounting period .In other words WIP inventory converts all direct and indirect materials used by the organization to manufacture finished items. The finished products inventory is maybe the simplest to comprehend of all inventory types. They are finished items. This category comprehends any item that is ready to sell to your customer. Supplies include products, such as Maintenance Repair and Operating (MRO) inventories that do not go into the end products but are used as a supporting component in the production process.

An inventory is processes that determine what level, when and how much each items should be ordered .As a result inventory management maybe defined as a company's way of monitoring and managing its inventory system (Stevenson,2010) .It entails maintaining tabs on and assessing stock levels, foreseeing demand, and determining the best time and method for placing orders Thus, having a sufficient supply of high-quality commodities on hand is the major purpose of inventory management .

It is well acknowledged that service delivery is often impacted by industrial businesses' poor inventory management. Manufacturing companies often struggle with determining the proper inventory levels to keep in order satisfying customer demands. Finding the right balance between overstocking and understocking is one of the main issues facing manufacturing businesses. Stock-outs often occur when there is a high demand for a product but insufficient inventory for it, which would lead to lost sales and declining consumer loyalty. The cost of storing, processing, and paying interest on short-term borrowings increases when a firm holds more stock than is required. When resources are sold for less than they are worth, a loss could eventually be incurred. Reduce total inventory costs and boost operational profitability are the main goals of inventory management (Mason, 2022). When a manufacturing firm mismanages its inventory, stock-out decreased production and profitability and dissatisfied customers are unavoidable outcomes. The study shows how inventory management practice affects the operation of the manufacturing organization.

1.1.1 Company background

Addis Transformer and Switch Gears S.C. (ATS) is a Company, which is based in the Burayu townTatak industrial zone, was founded in 2010 G.C by a group of technocrats who combined their industry-specific expertise and wealth of experience. The company currently employs 86 people across its various departments. Since its founding, the business has consistently expanded in size and scope, demonstrating its dedication to quality. Through development, manufacturing, supply, installation, the firm provides solutions primarily to satisfy the ever-increasing demands of industrial Automation. With its proactive attitude, it is specialized in taking on the challenges thrown down by the automation in duties in order to produce newer products and become a leader and exclusive supplier in many circumstances. The firm has been recognized for its quality in the design, development, manufacturing, testing, servicing, and delivery of transformers, compact substations, and control panels.

In order to lessen its reliance on transformer manufacturing for delivery and quality ,ATS joined the transformer manufacturing sector in 2011 G.C .today ATS is an Ethiopian Electric Utility certified plant for the design, manufacturing and supply of power and distribution transformer ,with installed capacity to manufacture approximately 860 plus transformer of various ratings annually in the distribution and medium power range and compact substations to manufacture approximately 200 plus transformers of various ratings .

The corporation previously had Indian proprietors; however, the owners have sealed their shares and transferred the factory to local owners in 2017. Transformers, Compact Substations, Electrical Panel Boards, and HV & LT Switchgears may all be manufactured by ATS.ATS Transformer Manufacturing Unit has the credibility of supplying high-quality goods to numerous utility sectors, which are now deployed across Ethiopia in the last decade. Transformers, compact substations, penal boards (pcc panel, mcc panel, capacitor panel, annunciation panel, control and relay panel, feeder pillar panel), bus dust, and switch gears are among the company's key products. Numerous companies, hotels, schools, hospitals, apartments Ethiopian Electric Utility, Ethio-Telecom, and many other governmental and individual companies are customers.

1.2 Statement of the problem

Inventory is a critical component of current assets, especially in industrial or manufacturing firms. Huge sum of money is invested in inventory in order to maintain a steady flow of manufacturing and fulfill customer demand. However, maintaining goods incurs opportunity costs, holding charges, and carrying costs. Inventory management is necessary in order to balance the advantages and disadvantages of keeping inventory. Stock outs, a drop-in productivity and profitability, customer dissatisfaction, order delays, wasted time, and missed sales opportunities are all predictable when companies fail to manage their inventory appropriately, and all of this has an impact on the company's performance.

Companies' effective and efficient inventory management is critical to companies' overall growth. Optimal inventory control is a major challenge for a manufacturing business (Pawletta,2021). Companies are faced with the difficulty of identifying optimum inventory level to ensure customer needs are met. One of the most difficult challenges that manufacturing companies confront is balancing overstocking and under stocking. It is well acknowledged that when manufacturing organizations' inventory management is poor service delivery decreases. Managers of manufacturing firms understand the values of inventory in daily operations of their companies and the use of direct materials in the production process in most manufacturing organizations, influencing company performance (Nsikan, etal., 2015). If Inventory management is inadequate, Systems cause the majority of finished items to remain in the warehouse before being delivered to their final destination, resulting in organizational inefficiency (Yvonne & Ngugi, 2019). Poor inventory management system implementation impairs the company's performance in managing inventories, resulting in lower sales volume.

Ayeni & Adewunmi (2013) claimed that industries in Africa, for example Kenya, have chosen to disregard the issue. Inventory management systems assist in reducing inventory expenses, but they also use more resources to invest in inventory. Companies are unable to satisfy client expectations owing to a lack of inventory, thereby impacting company performance. Addis Transformer and Switch gear S.C is a manufacturing company that produces transformers, compact substations, panel boards, and switchgears. According to my observations and inquiries with several of Addis Transformer and Switch Gears S.C. employees, the company is facing issues Due to improper inventory management practices, the company is losing its sales value, overstocking, and understocking some of the row materials and finished goods, customers complain and shifting to another competitor. There is also a mismatch between the inventory

and the demands of the customers. Overstocking and stock outs are the main challenges that the firm is currently facing. Given these circumstances, the objective of the study was to evaluate how inventory management procedures affected the performance.

Research questions

- How does demand forecasting affect the company's performance**?**
- How does stock out affect the company's performance?
- How does Inventory holding cost affect the company's performance?
- How does technology affect a company's performance?
- How do employee skill affect company's performance

1.3 Objective

1.3.1 General objectives

The Main goal of the study was to determine how inventory management practices affected Addis Transformer and switchgears S. C's performance.

1.3.2 Specific Objectives

- To study the effects of demand forecasting on the performance of ATS
- To study the effects of stock-out on the performance of ATS
- To study the effects of holding cost on the performance of ATS
- To study the effects of technology on performance of ATS
- To study the effects of employee skill on the performance of ATS

1.4 Scope of the study

1.4.1 Conceptual scope

Company performance is relied in many other factors inventory management practice is the main among those factors over stoking and under stoking, demand forecasting, Inventory holding cost are the issues that has been raised while we are taking about the inventory management. A company is losing sales value, customers complain and shifting to other competitor and a mismatch might occur due to improper inventory practices. In this study an effort was made to determine how Addis Transformer and Switch-gears S.C inventory management practices affected the company's performance based on the independent variables demand forecasting, stock-out, holding cost, technology, and employee skill.

Geographical scope

The present study focuses on Addis Transformer and Switch-gears S. C's inventory management approaches and their impact on the company's performance based on the geographical address Oromia region, Burayu town,Gefersa-Nono, Tatek Industry Zone.

1.5 Significance of the study

Inventory management in manufacturing organizations is concerned with having the correct things in the right place at the right time, as well as stock that is neither overstock nor understock. Because of unfit methods for managing inventory in ATS, there is a mismatch between actual demand and estimated demand, resulting in under and over inventory, loss of sales and customer loyalty, and having an adverse effect on the company's performance. The research has been a significant help to the company in enhancing its procedures because of these crucial components of the research's conclusions. Numerous studies have been conducted on the implications of inventory management strategies and their impact on the company's performance and profitability, and some of them suggested that future researchers investigate other variables that affect the company operational performances, such as uncertain demand management (Daniel, 2017). This research works helps the company to improve its inventory management practices in order to improve the company performance and can be used as a reference for future study in the area.

Limitation of the study

Most of the constraints that the researcher encountered in trying to determine inventory management procedures and ATS performance were a lack of appropriate literature specifically related to manufacturing enterprises in this area. In addition, the organization has inadequate information management guidelines, making it difficult to locate previous annual reports, documents, or rules in the industry.

1.6 Definition of terms

- Inventories- An inventory is an amount or proportion of raw materials, goods, work in progress (WIP), and finished goods that are preserved or held for future use (Lysons & Gillingham, 2003).
- **Inventory control** - is inventory management that arranges the availability of items to the organization's clients (Pandey, 2015).

- **Inventory management** Inventory management is a system that integrates data, shipping, purchase, assessment, storage, logistics, assembling, and supply control, as well as inventory security. Inventory management aims to find and sustain ideal levels of investment in all sorts of inventories, in order to maximize the movement of commodities, data, and other related resources such as personnel and power from point of origin to point of ultimate use (Dave, 2001).
- **Firm performance -** Company performance has been described as the degree to which an entity or business meets its economic and productivity objectives (Farzaneh, 2012).).
- **Overstock-**Overstock is stock too much or too many of (something) to get or have excess inventory of (a good or goods) (Lysons & Gillingham, 2003).
- **Inventory forecasting**-. Inventory forecasting refers to making an educated guess about the quantity of inventory ultimately be required to meet demand over a specific time period.
- **Inventory holding cost** -. Calculates the cost of retaining and unused products.

1.7 Organization of the Study

These research studies are divided into five chapters. The first chapter introduces the research issue, the study's background, the declaration of the problem, the scope and goals of the study, as well as the limitations and significance of the study. The second chapter explores relevant literature in the fields of inventory management techniques and company performance. Theoretical and empirical evaluations are included in this chapter, and at the end of this chapter, a conceptual framework is offered. The third chapter covers the study's design and methodology, including the method used, research design, population and sample and data collection techniques. The section further discusses data analysis technique and ethical boundaries employed in this study. The fourth chapter is a summary of the data analysis's outcomes and a discussion based on the results of the findings. The final chapter is tasked with summarizing the study's findings, and the conclusion has been drawn. After that, recommendations are made to improve ATS's performance. Lastly, the researcher expressed her thoughts on future research directions.

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CHAPTERTWO

2 REVIEW OF RELEVANT LITERETURE

This section concentrates on offering theoretical and empirical studies linked to the study area's issue. The chapter also discusses the conclusions of previous studies on the impact of inventory management strategies or practices on the performance of manufacturing organizations.

2.1. Theoretical literature review

2.1.1. Definition of Inventory

The term "inventory" is frequently used to refer to supplies that are accessible. Inventory goods include those that are held for distribution and are in the process of being made, as well as resources that are still not in use (Kumar & Suresh, 2009). Inventories are stockpiles of raw materials, vendors, elements, work in process, and final products that are held at various locations throughout the organization's production process and supply chain (Ballou, 2004). The worth or number of unprocessed supplies, work-in-progress process (WIP), and final products retained for later use is commonly referred to as inventory (Lyons & Gillingham, 1981). Raw resources contain items like lumber and steel, whereas materials include goods such as repairs, maintenance, and operations (MRO) components that are not part of the end output. Work in process elements are elements that are currently partially created but have not yet been completed. Complete products are items that are finished and prepared to ship (Kothari, 1992) A facility for the warehouse, or the preservation of stuff is what an inventory is. These things are kept on hand at or near a store location to meet desire and achieve the company's objectives. In a larger sense, inventory could encompass final products and work in progress, as well as inputs like as cash, space, and employment, as well as equipment and basic supplies. It can also refer to several stages of the production process, such as goods that are semi-finished. (Monk, 2006) define inventories as a set of policies and controls that monitor inventory levels and determine how much should be kept up-to- when stock should be refilled, and how bulk orders should be. Inventories are capable of being divided into several different categories. Yet, one that is frequently used is associated with the transportation of resources from one location to another as well as out of a factory, as stated by (Chandra & Kumar ,2001). He so divides manufacturing company inventories into the following categories:

1. **Raw Materials**- These are acquired resources, parts for components, and parts that are currently supplied but are yet to begin the production process.
2. **Work in Process (WIP)-** Raw supplies which are now being processed or are waiting to be processed.
3. **Finished Goods** – The end results of a production process that are prepared for sale as completed goods. They could be maintained at the manufacturing facility, a large storage facility, or multiple locations.
4. **Distribution Inventories**-. Final products that are part of the logistics system
5. **Maintenance, Repair, and Operational Supplies (MROS)** - Components used in production yet not included in the result. These consist of tools for hand, additional services, oils, supplies for cleaning, and additional items.

2.1.2. Inventory management practice

In order to ensure that there are sufficient supplies available and that the cost of having too many or too few inventories is kept to a least, inventory management involves taking the necessary steps to control the levels of stocks of initial supplies, semi-finished products, and final products (Kotler, 2000). Inventory management's main objective is to strike an equilibrium between conflicting economic factors such that a surplus of inventory is no longer required (Adeyemi, 2010). The process of placing orders is known as inventory management, holding, and utilizing a company's stock, which frequently comprises completed items, administrative supplies, and raw materials. In practice, ordering, storage, and effective product use appear to be the three in practice ordering, storage, and effective product utilization appear to be the three components of stock control. Inventory management may be a critical management challenge for many firms, whether large, medium-sized, or tiny. Stock flow management is a critical aspect in ensuring supply chain efficiency. The management of inventory is concerned with matching the demand and supply sides. A corporation would want to keep enough inventory on hand to ease customer concerns while preventing revenue losses due to stock shortages. However, because inventory is expensive, the organization cannot afford to keep a big amount of inventory on hand. The primary objective is to have sufficient but not too much (Coyle, Bardi, &Langley, 2003).

Inventory control is the practice that facilitating and maintaining continual flow of items or resources to and from existing inventories (Onkundi &Bichanga, 2016). Planning, Procurement, and Transfer are used to manage units during this process in order to minimize over stocking and stockout’s, as well as to conduct inventory and estimate minimum stock levels. Excess inventory

may be expensive and drain a company's cash flow, which could have been better employed to capitalize on profitable possibilities. Inventory management is essential to the achievement of any business and inadequate inventory management leads in customer churn and decreased revenues. Prudent inventory management ensures that resources are available when they are required while minimizing depreciation, theft, and waste (Tandon, 1999). In today's highly saturated and constantly shifting business, inventory management is crucial.

This comprises minimizing stocks costs by maintaining sufficient inventory in the appropriate location, at the proper moment, and at the proper cost to produce the appropriate number of items. High inventory affects efficiency, effectiveness, and functioning, reduces cash flow, and diminishes their turn on acquisitions on retained capital (Koin, Cheruiyot, & Mwangangi, 2014). Inventory control is very important to the achievement and growth of a company yet bad and inefficient inventory management leads in customer loss and revenue loss. Companies' must maintain adequate inventory levels to enable effective business operations if they want to fulfill their goal of reducing inventory-related expenses. Using inventory management techniques such as forecasting and replenishment, a company may learn how much time it takes a supplier to facilitate orders and fulfill deliveries. Inventory management is concerned with finding a happy medium between customer happiness and inventory investment. The purpose of inventory management is to keep as little stock as possible while ensuring that it is constantly available (Kamau & Kagiri, 2015).

Inventory management techniques include decreasing the price of having stocks by retaining only sufficient inventories in the appropriate place, at the proper moment, and at the appropriate cost to make the required amount of items. Large amounts of stock kept on hand have an adverse effect on the procurement of goods out of the capital held, and this has a negative impact on cash flow, leading in decreased productivity, efficacy, and imbalanced functioning (Koin, Cheruiyot, & Mwangangi, 2014). Firms should keep sufficient supplies on hand to sustain smooth company operations in order to meet the goal of lowering stock-related expenses. As a result, a range of approaches for dealing with these expenses have been devised.

Inventory management models widely employed by enterprises, according to (Ayni and Adewunmi ,2019), including the Economics of Order Quantity (EOQ) model, the approach known as ABC, the vendor-managed inventory (VMI), and the Just-in-Time model, are the well-known .

- **Economic order Quantity Model**

Inventory models deal with idle resources such as individuals, machines, and money, unused assets like people, machines, cash, and materials are represented by inventory models. These approaches address two issues: the amount to place an order (buying or making) as well as when to order in order to lower total expenses. In considering a buying choice, there are two major expenses to consider: the cost of holding inventory and buying or ordering costs. The expense of warehousing rises as the order quantity rises, whereas the price of the order falls. The "Order Quantity" is the amount that is manufactured or received during a run of production. The economic quantity of the order is calculated by balancing these two costs,

Economic Order Quantity is a term used to describe the appropriate ordering number for a stock that helps cut costs. This inventory control technique (EOQ) is based on the assumptions that demand for a specific item is known, the time frame for delivery is known and stable, an order is immediately received, price reductions are not anticipated as part of the approach, and inventory shortages do not exist. The EOQ graphs demonstrate how ordering costs, inventory expenses for maintenance, and the economic quantity of orders are related to one another (Nishantha, 2020).

- **ABC analysis**

ABC analysis splits things into three categories: A, B, and C, where A represents most valuable items and C representing items with the lowest value, to maximize inventories in the supply chain of goods. The ABC analysis is an important technique that follows the concept of Pareto in relation to a company's stock structure. Many poor company procedures and errors center on managing A things. While C objects receive the core idea, B items are at the center. The ABC method of evaluation is evaluated using a set of standards: Items only make up 10 to 20 percent of all items supplied yet account for between 70 and 80 percent of the expected yearly consumption of the company. In comparison to C items, which are responsible for 5 percent of yearly use esteem and 50 percent of the total stocked items, B items account for 15–25 present of annual use value and 30 percent of all the stock.

Vendor Managed Inventory

vendor managed inventory places all the responsibility for replenishment and the location where information should be delivered to customers on the vendor (vendors). By bridging the open market's trade gap and giving the client the thing, they want when they need it, this idea improves customer responsiveness. Business partners must communicate their vision of interest, objectives, and criteria in order to determine shared goals. In accordance with (Kotler, 2008), the information

provided to the suppliers. current inventory levels and price business estimates, is the more crucial component of the efficient use of the supplier management inventory. It is crucial for making efficient use of the supplier management inventory.

- **Just in time technique**

The technique known as JIT is a Japanese idea that emphasizes logic in assembling and requires the right materials to be available in the right quantities and of the right quality at the correct moments in time. Using the JIT technique leads to improvements in interaction, reductions in expenses and waste, and rises in quality, revenue, and efficiency. JIT is a procedure which is designed to answer to inquiries immediately eliminating requiring overstocking, either because of anticipation for when a request will be filed or because of fear about unwanted qualities continually, according to (Heba & Ahmed ,2021). Heba & Ahmed (2021) also drew attention to the fact that the JIT technique's main objective is the accomplishment of nil stock not just at the end of but throughout the entire manufacturing network. Although it is changing within administrative organizations as well, it might apply to the assembly procedure within any company.

2.1.3. Purpose of Inventories

If supply and demand could have been perfectly balanced, there would have been no need for inventories. The commodities may be created at the same pace as demand, eliminating the requirement for stockpiling. Sadly, in the actual production environment, this is not always the issue According to (Chase & Jacobs, 2001) For the reasons listed below, companies maintain inventories.

1. **To meet fluctuations in product demand**- A specific need for the product is known, it may be feasible (though not always inexpensive) to make the product to meet the exact requirement; nevertheless, this is often not the case if the demand is not entirely known. In order to take in the variance, a safety margin or buffer must be maintained.
2. **To allow flexibility in production planning** - Keeping inventory on hand relieves the production system of the load of getting goods out. This results in less delays and enhanced production scheduling for smoother operations and reduced expenses due to increased, lower cost manufacturing.
3. **To provide a safeguard against variations in raw material delivery time** - Delays can occur when requesting material from a supplier for a number of causes, including normal time for shipment variations, shortages of goods at the supplier's plant causing delays, a sudden

strike at the supplier's plant or one of the shipping firms, a lost order, or delivery of wrong or inadequate materials.

4. **To take advantage of monetary purchase order size**- The cost of manual labor, telephone calls, writing, and postage are all expenses that come with placing an order. Because of this, fewer requests are written as order sizes increase. Additionally, shipping prices are more favorable for large orders; the cheaper price per unit is the bigger the cargo.

2.1.4. Function of Inventory in manufacturing process

The primary goal of inventory in batch or batch manufacturing is to separate demand from supply. Thus, the goal of stock levels is to act as a buffer between customer demand and final products, between the accessibility of completed goods and components, between the requirements of an operation and the outcome of the previous operation, and between components and materials to begin manufacturing and material supply. Other features of inventories identified by (Kothari, 2001) include It reduces losses caused by insufficient material scrutiny as well as losses caused by depreciation, deterioration, trash, and theft while in storage. It guarantees that the rules governing the procurement and use of substances are followed correctly. It also allows for fast changes in response to shifting market conditions; it also serves as an accurate basis for manufacturing via 'stability of store' data. Inventory allows manufacturing to buy in large values, resulting in cheaper ordering fees in line with unit and quantity reductions, and inventory allows production to run longer manufacturing runs, resulting in lower installation fees.

2.1.5. Key performance indicators for Inventory management

As stated by Saxena (2009), inventories are one of the most important expenses for many firms, hence reducing it is frequently a crucial organizational goal. Fortunately, there are plenty of key performance indicators (KPIs) that may be used to analyze the performance of inventory operations, both concentrating on economy or stock performance, and some of these are given here.

- **Demand Forecast Accuracy –**This inventory management statistic indicates the discrepancy between the real needs of your clients and the expected need or demand at the manufacturing facility. You can improve manufacturing operations using the demand prediction accuracy measure to avoid excess production and stock shortages. Another benefit of employing demand prediction accuracy is that it allows you to save money on logistics inventory holding

expenses. Using forecasting of demand accuracy allows you to buy things as needed, avoiding ordering too small and spending twice as much money for shipping stocks. It also prohibits you from purchasing too much, so you don't hold things that expire after too long in your inventory.

- **Inventory turnover-** Inventory turn is a measurement of how frequently inventory has been sold and replaced over a certain time period. While distance may vary depending on the industry, a low inventory turn may be an indication of storing too much (or the wrong kind of) stock.
- **Stock outs –** When there are stock outs, it means that there is not enough inventory to meet demand. Watching stock outs will show you whether you have the proper balance of stock type and quantity.
- **Service Level -**Can be evaluated per particular consumer by analyzing the number of times a good has been supplied divided by the number of times it has been requested; a low service level indicates that consumers will invariably have to wait for parts, and inventory held may be of the incorrect type**.**
- **Lead time** – is the time it takes to get goods from suppliers; extended lead times can result in surplus inventory (affecting cost and service levels).
- **Customer Satisfaction Levels -**. When customer satisfaction falls, you are more likely to lose customers to opponents, leading to a decrease in sales. As a result, assessing your customer satisfaction level is critical for inventory management. The level or score of customer satisfaction is an indicator of your customers' overall satisfaction with your services, goods, and company. This involves being consistent with client orders, delivery time, client service, and other factors. Conducting a customer satisfaction survey that allows customers to rank their pleasure with your product or organization is the best way to figure out their satisfaction level.
- **Holding costs** –. This KPI, commonly known as inventory holding cost, calculates the cost of storing and unsold inventory. When expressed as a percentage of total inventory value, excess holding costs, which include warehouse labor and insuring expenditures, as well as the cost of damage can have a major impact on profitability.
- **Average inventory** – This KPI is employed for determining the number of stocks a company has on hand at any one time. The purpose is to avoid stock or unexpected drops; the calculation is beginning inventory plus ending inventory divided by two. Among the above-mentioned

inventory KPIs, the researcher focused on demand forecasting, stock out, and inventory holding cost, as well as employee skill and technological advances in the area. The researcher chose the above metrics based on the company's stated problem and the availability of information that can be gathered from the company. Because the company's data recording and administration are less than the researcher's expectations, it is difficult to locate structured secondary data the researcher chose KPIs whose information can be obtained conveniently through questioners from employees and interviewing the management.

2.1.5.1. Demand forecasting

Forecasting demand is a method of projecting how much of an item or commodity purchasers will purchase. Demand forecasting tactics encompass either unstructured approaches such as reasonable assumptions and statistical methods such as using previous sales information or current information from market tests. Demand forecasting is used to calculate cost, estimate future capacity specifications, and decide whether to enter or not to enter a new market (Coyle & Badri ,2003). According to Nishantha (2020), a demand prediction is required in the increasing study of logistics and supply chain management so that organizations can handle changes in demand for their products and resources. The common aim is to have the least amount of inventory to match client demand for your items while minimizing purchasing and inventory costs. A company with excess inventory consults the unjustified expense of excessive storage, inventory deterioration and obsolescence of products with scarcity, acceleration, malice, and lost sales. Reliable projections are required for the firm to succeed and survive.

Demand forecasting is the process of predicting future demand for specific items. It forecasts what consumers now and, in the future, will want to buy and advises industrial enterprises on what to produce. Production companies would ideally wish to be able to precisely estimate customer demand in order to produce the proper quantity of goods. Producing too few items results in shortages of goods and can harm customer relationships. On the other hand, having too much inventory is expensive and may result in excess stock if the goods become obsolete. Demand forecasting can help set pricing for those items as well as determine which markets are best suited for them (Nishantha ,2020),

2.1.5.2. Methods of Demand Forecasting

Demand forecasting has enabled manufacturing to gain insight in to needs for their consumer

using a Varity of forecasting methods include predictive analytics, conjoint analytics, customer intent survey and the Delphi forecasting method (Miller & Modigliani ,1991)

- **Predictive Analytics**-Predictive analytics goes beyond traditional demand forecasting by evaluating why individuals buy. The technique uses mathematical concepts to forecast based on the current as well as past information, predict the buying habit of customers in contrast to traditional forecasting, forecasts what future demand will be like but also why. The overall technique is based on research on the company's products and how customers have engaged with them in the past.
- **Conjoint analysis** -. Use surveys to gather user feedback on the greatest qualities of your products. These polls ask customers how they would utilize and respond to a specific product; it is critical to recognize many significant features that consumers evaluate when making an investment. Settlements occur with all commodities; thus, it is critical for businesses to understand why customers choose certain products over others and which qualities are more valuable. The conjoint analysis can assist the company in going beyond demand forecasts by selecting the most appealing products for consumers. This is accomplished by having customers rate their tastes and targets, which are then converted into a report that shows what consumers desire through analysis.
- **Client Intent Survey** - One Buyer Intent Survey asks the customer what they expect to buy in the future. This strategy is used to determine the client's motivations. To purchase a product that they are interested in. If consumers are thinking about buying a trampoline, they can answer questions on a scale of 0 to 10. If customers respond with a high probability, the firm can do an analysis. You may be required to move forward with a product that the firm is contemplating. It is crucial to remember that consumer intent surveys can assist in determining the Probability of buy, which does not necessarily reflect the actual probability of purchase.
- **The Delphi method** - developed on the assumption that group forecasts are generally more accurate than individual projections. As a result, this system employs a panel of Experts who submit their projections and arguments anonymously. The predictions are then pooled and shared with the rest of the group, allowing each expert. This technique is performed multiple times until agreement is attained. Non-significant modifications to your replies influence consensus. If used appropriately, the Delphi technique can produce the following accurate

forecast that may not have been matched by any one member of the team. The downside of this procedure is that it might take a long time and depend on experience.

Advanced planning and programming software (APS) - advanced planning and scheduling software has become a requirement for contemporary manufacturing facilities as consumer demands for a variety of products, faster delivery, and minimum costs grow more prevalent. These technologies assist Planners in saving time and increasing agility in updating Priorities, production plans, and inventory plans in response to frequent changes. To cover gaps, the APS System may be connected with ERP/ MRP software. Systems lack flexibility, accuracy, and efficiency in planning.

2.1.6. Stock out

A stock out occurs when consumer orders for a product surpass available inventory. This occurs when demand surpasses estimates and the amount of regular and safety stock available is insufficient to meet all demands. A stock can also be formed by a breakdown in the supply chain or a halt in the production procedure. Customers are more likely to go elsewhere or purchase the necessary components if there is an inventory (Stvensson, 2010). Companies are looking for strategies to address the costly issue of stock outs and uncertainty of demand by staging products in containers ahead of consumer demand (Donald & Pendy, 2005). Managers have struggled to match the right amount of inventory to meet erratic consumer demand (Jean,2010). The necessity for periodic and timely restocking in order to maintain lean inventory has also generated difficulties for retailers and suppliers who purchase products from overseas producers (Bruce, 2004). Delays in the supply chain can have serious consequences for efficient businesses. Customers may become unsatisfied and take their business elsewhere if there is insufficient inventory.

2.1.7. Stock out costs

Lysons & Gillingham (2009) defines stock out cost as "the expense related to running out of items." According to (Coyle & Langley, 2003), it additionally includes the cost of lacking a product available when a consumer expects or needs it. When an item is out of stock, a customer may accept a back order for future availability of the desired products, or even acquire (or replace) a competitor's product, immediately profiting from the stock out. If the company loses a client completely to a competitor, its financial loss will be indirect but long-lasting. A stock out on the supply side may result in no new materials, semi-finished items, or parts, leading to idle time for machines or even the closure of a whole facility.

The cost of not having an item available for sale, on the other hand, may be significantly more difficult to calculate. A stock out can cause a firm dealing with supplies or raw materials for the manufacturing process to shut down completely or partially. Such cost savings are especially relevant for organizations that use just-in-time production or assembly. Stock out costs are defined by (Lysons & Gillingham ,2009) as "lost contribution through lost sale caused by stock out, loss of future sales because customers may go elsewhere, cost of production." Stoppages due to a lack of work-in-process and raw materials, as well as the additional expenses involved with urgent, typically small-quantity restocking.

2.1.8. Inventory holding cost.

The fluctuating cost of holding stock, also known as carrying cost, is a sum of costs related to opportunity costs, curiosity on cash invested in the supplies, charges for storage (rent, electricity, etc.), taxes, servicing and running costs, insurance and security, reduction, and other variables. It is among the most expensive logistical expenses (Ballou, 2004). Estimating inventory holding costs, according to (Paule,2015) should not be too difficult. It determines the cost components that make up these holding charges. These are grouped into three categories capital costs (to finance inventories), storage and management costs, and risk costs. When reviewing the many categories listed above, there is no one over all allocation for inventory holding expenditures. The cost of capital is influenced by how a business is supported, whereas storage costs are determined by whether a corporation keeps a warehouse or outsources this activity. Obsolescence expenses are associated with the product or the product life cycle. As a result, it is obvious that inventory holding costs vary greatly in practice. Every business, however, should be able to calculate an appropriate proportion.

2.1.9. Technology

Adeyemi & Salami (2010) describe technology as "equipment that enables the recording, processing, retrieval, and transfer of information or data. “The adaptability of a company's inventory management systems is greatly influenced by technology. It provides a competitive edge to any firm's plan. The technique has a number of major benefits (Battaglia & Gallo 2015) which may include.

- ✓ **Centralization of record-keeping -** The entire system is centrally managed, so employees can work from wherever. Inventory management technologies improve exchange of data across sections, which can improve interaction and collaboration.
- ✓ **Scalability -**. This technology assists businesses in scaling their activities to stay competitive.

A lot of systems enable you choose the functions that will best meet your present requirements while also adding new ones.

- ✓ **Inventory technology management, reporting, and analytical functions-** These skills enable us to obtain important data at the right time, analyzing the data depending on specific factors, and producing helpful findings for the benefit of the company. Utilizing technological innovations in business to connect supplier network members through exchange of data has become a source of competitive advantage over competitors in the exact same industry in the highly competitive business environment of today. IT has been identified as one of today's most powerful commercial influences (Battaglia & Gallo, 2015). According to (Chandera & Kumar, 2001), exchange of data across supply chain participants reduces costs, speeds up stock movements, and improves order processing. Increasing warehouse efficiency is critical to the overall performance of a supply chain since it reduces waste and assures the creation of value or options as your company expands.
- ✓ **Real-time data management-** Data is constantly being revised across all computer systems linked to the network. This method explains both the real amount of inventory and customer purchase his

2.1.10. Employee skill

According to Kumar & Suresh (2009) those who work in warehouses or stores are responsible for the distribution of inventory items to all locations of storage or usage. Warehouse maintenance tasks include Goods acceptance, storage, order selection, and shipment, as well as physical security of material in all branches. maintain correct inventory records, regulate the physical layout of warehouses, including container placement assignments determine how things are physically moved and distributed organization of acceptance and storage of commodities Release of stock products in response to client delivery orders cycle counts, yearly inventories, or both and resolution of inconsistencies between cycle counts and annual physical records. Inventories are all tasks.

According to Lyson & Gillingham (2003), training is a purposeful process that transforms attitudes, knowledge, and behaviors based on learning experiences and results in successful performance in a single or numerous related occupations. Job goals are to help people grow as individuals and to satisfy the organization's current and long-term personnel needs and Employees can take internal training at the business or external training.

2.1.11. Manufacturing Firm Performance

Manufacturing is the value-added production of goods that entails creating things from raw materials utilizing diverse processes including hand tools, machines, or even computers (Saxena, 2009).

Firm performance can be described as the degree to which a business or other entity accomplishes its financial and operational targets (Kotler, 2000). It is a short-term metrics incite that focuses on the company's present functional, advertising (including sales), and financial achievements in the current or previous fiscal year (Saxena, 2009). It varies from business expansion, which is a measure of how effectively an organization enhances its performance over time or in the future. Constructive growth, on the other hand, needs continual high performance. As a result, enhancing both efficiency and expansion is a shared goal for all firms. Firm Performance is a generic measure of a firm's overall success over a specific period that can be used to compare different periods of time and across similar organizations in the same industrial sector. The performance of a company verifies the financial information and acts as an indicator of an organization's financial health and production (Farzaneh ,2012).

An organization's performance is measured by how well it reduces costs or adds value. When evaluating performance, firms utilize three main performance measures: efficiency, responsiveness, and effectiveness (Chase et al., 2002). Efficiency entails minimizing entire system costs ranging from transportation and distribution to raw material, work in progress, and completed goods inventories. Thus, administrative savings and customer service delivery levels may be the best indicators of organizational efficiency.

There are also other common performance indicators that are used when evaluating performance are such as profitability, operational efficiency, and service delivery (Chase et al., 2002). Profitability Is defined as the amount by which the transfer value of items manufactured exceeds their actual production cost. Profit is regarded as the primary metric for assessing the success of a commercial entity (Horenbeek et al., 2014). Operational efficiency refers to the efficient use of resources such as time, people, equipment, inventory, and money to service the business or the firm (Pendy,2015) Service delivery Refers to a business framework that provides products and Services to customers and service delivery have four essential components service culture, staff engagement, service quality, and customer services. (Jean,2010).

2.1.11.1. Profitability

Profitability has been a critical concept in the field of finance since (Miller & Modigliani ,1991) presented the concept of payout irrelevance, which states that a company's performance is characterized by its underlying ability to produce profits and manage business risks. Several studies have been conducted to establish that profitability is a variable that determines a firm's success, including those by (Aqil et al.,2019) and (Battaglia& Gallo,2015). In accordance with (Tandon,1999), one of the goals of financial oversight is profitability in relation to increasing the owner's wealth. Profitability is an important performance metric. An unprofitable enterprise cannot be sustained. In contrast, exceptionally profitable businesses can give their owners substantial returns on their investments. As a result, the goal of a corporate organization is to produce a profit in order to survive in the current market conditions.

Profitability is characterized as profit over a specific time period by (Borio, Gambacorta & Hofmann, 2017) as a business capability. To understand how firms fund their operations, it is necessary to examine the elements that influence profitability. Profits are created when the money produced by business activities surpasses the costs and taxes required to support corporate operations. Through the idea of profitability, the business's success can be judged in terms of the profits it produces from investors, the amount of cash used in the firm, or in relation to sales operations. Because profit is the fundamental purpose of investing, the earnings created by a corporation are used to measure the performance of the capital.

2.1.11.2. Operational efficiency

As defined by (Pauletta ,2011), operational efficiency relates to a company's ability to reduce waste in terms of time, labor, and supplies while still providing excellent services or goods. The ratio between the input required to keep a company running and the output produced is used to calculate operational efficiency. Inputs to a firm include expenses, labor costs, and time, whereas outputs include quick reaction times, excellent quality, significant income, and customer acquisition. A company can improve operational efficiency by cost-effectively streamlining its essential tasks and eliminating superfluous procedures. This is frequently achieved by focusing on resource utilization, manufacturing, inventory control, and distribution.

In operational efficiency

- ✓ Resource utilization is centered on reducing waste in production and operations.

- ✓ Production is concerned with organizing the production environment as much as feasible. This involves ensuring that staff and equipment are operating as effectively as possible in order to improve output.
- ✓ Inventory management is the process of developing and maintaining appropriate inventory to meet demand while minimizing surplus inventory.
- ✓ Distribution is concerned with the effective processing of the finished product, including routing and delivery.

2.1.11.3. Service delivery

Service delivery, as defined by Jean (2010), is a business structure which enables a supplier to give services to a client. It also entails the two parties' continued involvement at the time when the provider provides the service, and the customer acquires it. In essence, a service delivery organization provides something to a customer that they could not generate on their own. This service could include anything from a simple job to modern technology or expertise. It can be categorized into two major groups: General models of reference for any service and technical service-specific models. Typically, Typically, service delivery processes attempt to provide greater value to customers by defining norms, regulations, rules, and limitations to guide all aspects of their organization and customer interactions. In addition to the provider and the consumer, service delivery may occasionally involve a third-party or external supplier, and it may be used to evaluate a company's success.

- **Demand forecasting and firm performance**

Forecasting demand is an essential subject to companies because it affects many internal processes and decisions. This comprises planning a strategy, financial evaluations, marketing management, and the launch of new products. Forecasting methodologies are frequently advantageous because they reduce subjective bias and the influence of irrelevant information (Mason, 2022). According to the literature, the relevant performance evaluated in the context of forecasting is accuracy. When prediction accuracy improves, so do cost and delivery performance. Stock levels, and hence associated expenses, could reduce. Manufacturing procedures are better regulated when equipment utilization grows, and companies may effectively plan activities to be conducted in advance, resulting in lower production and product costs. Forecast accuracy improves delivery performance (e.g., the fulfillment of orders and

delivery speed/punctuality) (Kamou & Kagiri, 2015).

- **Stock out and firm's performance**

Concepts present several arguments regarding the relationship between inventory and company performance. To begin, the anticipatory motivation hypothesis implies a positive relationship between inventory and company performance. This concept proposes that a larger inventory level be kept on hand in order to reduce out-of-stock occurrences (Wen, 2005). An inventory problem can lead a company to lose existing and future consumers' affecting the company's success. As result it may be advantageous to prevent a stock outage. Prevent lost sales. Also, because delivery times are unpredictable simultaneously, this idea predicts a larger inventory level. The most evident effect of stock outs is income loss. Companies will lose sales if a customer tries to place an order when the item is out of stock. Customers can buy lower-priced items. Worse, you may permanently lose a customer, resulting in fewer future recurring sales. A further significant contributor of stock outs is stock accuracy; if the system and genuine stock are not the same, there may be limitations. This allows procedures to be paused, affecting the firm's performance.

- **Inventory holding cost and firm performance.**

Inventory holding cost (IHC) is the variable cost of keeping stock on hand and includes expenditures such as cost of opportunity, preservation, insurance, taxes, loss of volume, and various other variables. When all relevant inventory expenses are accurately assessed, the real value of IHC can be 50% or more of the inventory's worth. An additional component of fixed overhead would be utilities like as energy, heat, refrigeration, and so on, as suited to the kind of inventory, and the longer the materials stay, the higher the expenses would be affecting the firm's performance (Jean,2010).

- **Inventory management Technology and firm's performance**

Inventory management systems aid in establishing a competitive advantage by enhancing resource utilization, increasing customer satisfaction, undertaking thorough analysis, and preventing losses. As a result, most organizations want to optimize their inventory by combining modern technology like real-time monitoring, sophisticated analytics, and data-based demand forecasting. Indeed, current technologies contribute to the optimization and efficiency of inventory management. (Mason, 2022). Businesses can save money by eliminating stock-outs

and overstocks with the help of advanced data analysis and exact estimates, which improves corporate performance.

- **Employee skill and firm performance**

Employee training helps workers satisfy company requirements, reduce cost of replacement, and improve their performance at work. Due to this, lots of leaders are focusing on quipping their teams with tools such as a learning management system. Talent is an organization's most asset, and it must be protected and invested in like any other resource. Training opportunities help to improve staff retention and overall productivity and performance. Because industry-specific software solutions are a reality for most firms, a method for training swiftly and efficiently is required. While technology becomes more intuitive with each passing year, it is also evolving quicker than ever before. Organizations and individuals must be prepared to adapt, which will increase overall organizational performance (Donald, 2006).

2.2. Empirical Literature Review

This subject matter explored the association between the effects of inventory management methods and company performance utilizing the findings of past studies and researchers. (Saxena, 2009) evaluated the impact of excess inventory on long-term stock price and performance in US manufacturing firms.

The purpose of the study was to evaluate how inventory affects stock market performance. He made use of a descriptive design for the survey. The population being studied included 109 manufacturing businesses with a total of 2189 employees. To pick sixty-one organizations, a simple random sampling approach were applied, and 457 employees were sampled. Data collection tools comprise both primary and secondary data. Data was evaluated, presented, and evaluated utilizing qualitative as well as quantitative methodologies. Both inferential and descriptive statistics were employed in the data analysis and presentation. According to the study, long run pricing encourages too many goods to remain in the business, raising holding costs. This influences performance.

As stated by (Stevenson, 2010), ensuring accurate demand in the future improves operational performance. The analysis used a case study with a descriptive research method. However, the study did not go on to identify the approaches that could be used to produce realistic future demands. As therefore, the goal of this study is to use MRP as a tool for demand forecasting

while examining its impact on the operational performance of manufacturing firms.

Holding stock and ordering expenditures may improve an organization's performance, and Inventory control systems, organizational growth, information exchange, and channeled connections all have an impact on manufacturing business performance (Vanhorenbeek & Pintelon, 2014).

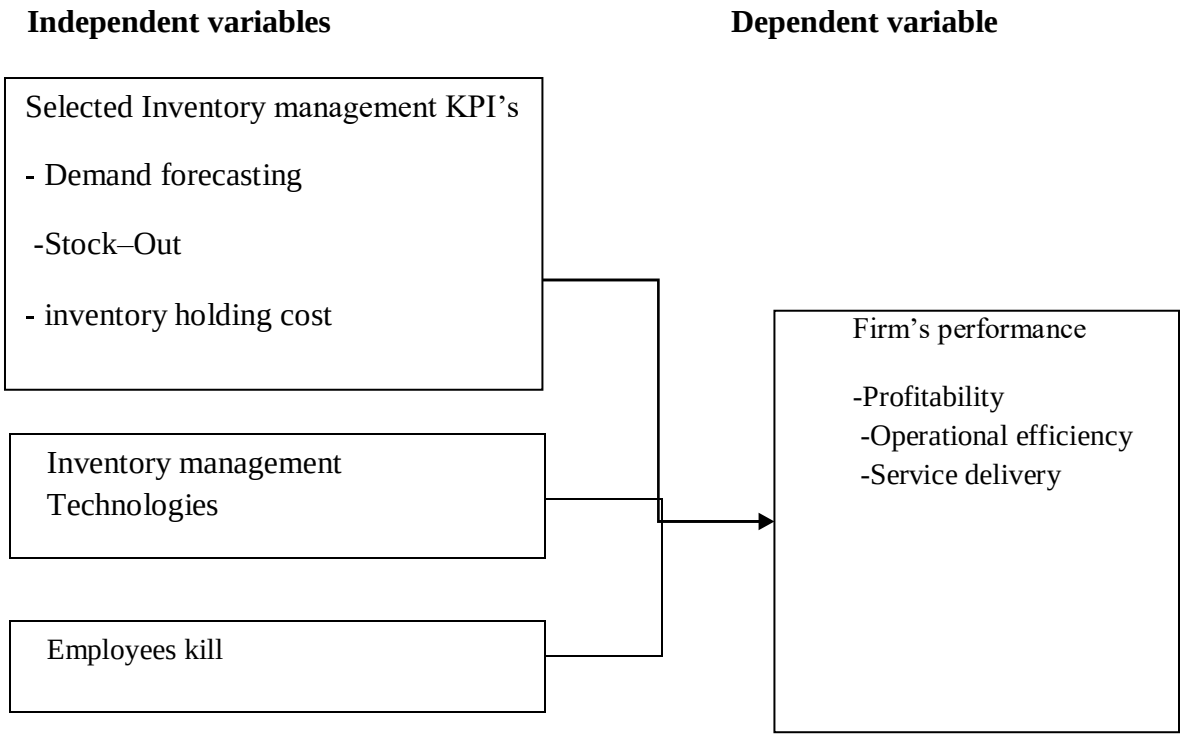
Sushma & Phubesh (2007) discovered that inventory management rules influenced the financial performance of 23 Indian electronic goods manufacturing companies. They looked at 8872 small and medium-sized Spanish firms. Managers may generate value by minimizing the number of days spent with inventory (Nsikan & Tommy, 2014). Using excellent inventory management techniques allows firms to function more efficiently, provide better customer service, minimize inventory and delivery costs, and track items and expiration dates, allowing them to balance supply and demand.

2.3. Research Gap

Addis Transformer and Switch gears S.C. is now experiencing problems related with inventory management practices, despite having a promising future in Ethiopia and competing in a market with few competitors and significant demand but no real study, analysis, or report has been written about the problems with inventory management or any other aspects of the company's problems or regarding the company. This research will plug the gap and urge the organization to focus on those problems. The research will provide recommendations and findings according to the data analysis findings and will serve as a point of reference for subsequent research in the area.

2.4. Conceptual Framework

Conceptual frameworks are used to describe the causal connection between both dependent and independent variables. In the present research, the variable that is dependent is company performance, while the variables that are independent include demand forecasting, stock-out, inventory holding costs, technologies, and employee’s skill. The association between the dependent and independent variables is important because it determines the influence of inventory management practices on the performance of Addis Transformer and Switch-gears S.C.



Source: Adapted and modified from Daniel (2017)

Figure 2.1: Conceptual Framework

CHAPTER THREE

3. RESEARCH METHODOLOGY

3.1. Introduction

This section focused on addressing the research method that was used in conducting the study in Addis Transformer and switch gears S.C, which is located in Burayu town Tatek Industry zone, to figure out the connection between Inventory management practices and company performance, and this chapter is made up of the research approach, research design, aimed population, sources of data and types, and statistical analysis that was used in order to obtain correct information about the study.

3.2. Research Approach

The three main approaches to study are qualitative, quantitative, and mixed methods. undoubtedly, the three techniques are not as separate as they appear. Qualitative and quantitative techniques should not be considered as hard, separate groups, opposites, or divisions. Rather, they indicate opposite ends of a path (Newman & Benz, 1998. Qualitative research is a means of exploring and appreciating the importance that people or communities place on a social or human situation. Quantitative research is a means of analyzing objective ideas by examining the connection between variables. These parameters can then be monitored, frequently utilizing equipment, and the resulting numerical information can be statistically analyzed. Mixed methods research is a form of investigation that entails collecting both quantitative and qualitative data, combining the two kinds of data, and applying distinctive approaches that may contain philosophical presumptions and theoretical frameworks. The basic concept of this sort of investigation is that integrating qualitative and quantitative approaches results in a more comprehensive understanding of the studied issue than either method alone (Creswell, 2018). The researcher employs both qualitative and quantitative research methodologies in this study (a hybrid study methodology). The researcher chooses a mixed research technique based on the study title if the approaches combined will lead to a greater awareness of the research goal.

3.3. Research Design

The research design is the design or plan that the researcher used for conducting the investigation (Kotler,2000). This is mostly related to causal research. The researcher uses design of descriptive and explanatory research.

Descriptive research approaches used to describe the various variables and explanatory research

design used to determine the magnitude, direction, and effects of inventory management practices on the performance of the company. Descriptive research approaches sought to explain a sample's features as well as the between occurrences, settings, and events seen by the scholar (Rubin & Parrish, 2010). This was done by researchers in order to gain a better grasp of how variables spread (Yonne & Ngugi, 2019). Causal research is classed as definitive research since it aims to demonstrate the causal connection between two variables, and this study examined the effects of inventory management practices on ATS performance. The inventory management practice was briefly addressed in this topic, and data collected, analyzed, and examined. The study's process comprises collecting data from primary as well as secondary sources. This information was obtained from the questioner and an examination of reference materials. A questionnaire with descriptive data were utilized in this study because it is an effective tool for acquiring information regarding the current status of inventory management practice in ATS and its impact on the efficiency of operations.

Population and sampling

The participants in the research included Addis Transformer and switch -gears S.CA employees from various departments such as purchasing, logistics and supply chain, stores, production, and top management. Since the total number of staff members in the factory is 86, the researcher did not use any sampling techniques, instead opting for a census and selecting 76 employees who may have direct ties to the area.

Table 3.1: Total employees in the company (ATS)

S. No.	Departments	Number of employees in the department
1	Top Management	7
2	Import team	11
3	Tender	4
4	Finance	10
5	Sales and marketing	14
6	Production	25
7	Store(warehouse)	5
8	Other	10
	Total	86

3.4. Data source and types

The present research combines both primary and secondary data.

3.5.1. Primary data collection methods

There are several methods for gathering primary data, and in the present research, data was acquired from ATS workers by observation, interviewing, and questionnaire, who are thought to provide vital information about the subject under study.

3.5.2. Sources of secondary data

- **Academic sources**

It consists of books, journal articles, reports done previously and research papers.

- **Public source**

Articles from local and foreign newspapers, magazine and websites are consisted in this source.

- **Case company source**

It consists of annual reports, customer data, and supplier data.

3.5. Data collection procedures

This study collected both primary and secondary data to meet the study's objectives. This strategy often comprises an interaction between the researcher and the participant, aided by the adaptable approach and augmented by follow-up inquiries, enquiries into further information, and comments. When gathering primary data, the researcher employs semi-structured quaternaries. Using this strategy, a researcher can collect unstructured data, dig deeper into the experiences of respondents abilities, and frequently sensitive subjects, and explore participants' ideas (Kothari,2004).

3.6.1. Semi-structured interviews

Interviews and discussions were conducted with the company's senior management and personnel as part of this data collecting technique. And this is used to interview staff members in order to obtain crucial information that couldn't be obtained through questionnaires.

3.6.2. Observation

As an engaged observer, the researcher collected data and conducted an evaluation by seeing how the current scenario affected the company's performance.

3.6.3. Questionnaires

A questionnaire is a set of questions intended to collect replies from respondents and pose numerous questions regarding the study topic. A range of questions are posed to the participants, and the answers are frequently expected to be verbal or digitally (Tandon, 1989). The following questions are straight forward yet rationally constructed to make it easy for people to grasp. They will be tasted initially on a small number of respondents to gauge acceptance before being given to all of them. The provided questionnaires pertain to inventory management practices and company performance, with a primary emphasis on the chosen variables. The researcher will give the questionnaire to the ATS staff and management.

3.6. Validity and Reliability

Kothari (2004) defined reliability as the extent to which a study's results are consistent across time and accurately represent the entire population being investigated. The Chronbach alpha statistic is a reliable method for measuring research that is frequently used in the scientific literature to examine scale reliability and stability. A realistic scale must have a Chronbach Alpha of at least 0.70; any scale with a Chronbach Alpha below this level should be avoided. In order to guarantee reliability measurement as well as evaluation of the real situation takes place in ATS.

Table 3.2: Reliability Statics Test Result

No.	Variables	Cronbach's Alpha	Number of questions
1	Demand Forecasting	.918	5
2	Stock-Out	.965	5
3	Holding Cost	.788	5
4	Technology	.855	5
5	Employees Skill	.845	5
6	Firm's Profit	.814	4
7	Service Delivery	.827	4
8	Operational Efficiency	.756	4

Source: ATS employee's data analyzed using SPSS version 20

The aforementioned table, (Table 3.2) shows that there is internal consistency between the dependent and independent variable. Among the given variables, the stock-out has a higher reliability rating with Cronbach's Alpha =. 965. Before applying the instrument to the study population, the researcher conducted a pilot survey to ensure the data's reliability.

The term validity, which comes from the Latin word validates, meaning "strong," is used in qualitative as well as quantitative studies. As stated by Kothari (2004), validity implies that a result can never be legitimately shown; it can only be contested. As a result, the validity of a research instrument includes components such as construct validity, which deals with the consistency of the questions with the desired responses of the researcher. The questionnaire's validity is ensured by designing it in accordance with the appropriate objectives. Other consideration is the validity of the content, which is ensured by using questions that are closed-ended to exclude insignificant responses to ensure internal validity; researchers also transmit the draft survey to the adviser. This was included in the final questionnaire for evaluation and feedback. Construct validity is achieved by rearranging the questions in accordance with the responses of the respondents in order to preserve the flow of questions. The survey questionnaires are valid in this regard because they have been used by many studies and are supported by literature. As a result, the researcher is confident that the constructs can analyze the impact of inventory management practices on ATS performance.

3.7. Data Analysis

Once collecting the data via interviews, questionnaires, direct observation, and secondary sources, it cleaned up and coded to remove mistakes, ensure consistency, and display the data in tabular form with meaningful categories, which was aid the researcher in identifying significant trends. The coded data was entered into the SPSS (Statically Package for Social Science) computer program and evaluated. This study used correlation and regression analysis to show the connection within the dependent and independent variables inventory management practice and performance.

3.8. Ethical consideration

Everyone who participated in this study gave their agreement to participate in this study, and they were free to discontinue at any time. They all also received information on the study, allowing them to understand its significance without having to seek it. The study concentrates on how inventory management practice affects ATS performance, and the respondents are also employees of ATS and thus closely related to the company, they will also benefit from the study's conclusions and recommendations. There was no offensive, discriminatory, or objectionable languages in the surveys, and the focus is on group questions. Furthermore, the study ensured the anonymity of the recordings and that no records revealing the identities of the participants were maintained. Furthermore, this study will be used as a reference for the company and other researchers.

CHAPTER FOUR
PRESENTATION, INTERPRETATION AND ANALYSIS OF FINDINGS

This section examines the analysis, and interpretation of data acquired by questionnaire as well as document analysis.

4.1 Introduction

This section concentrated on laying out and analyzing the results of the study so as to assist the study's user recognize the research topic, which is the Effect of Inventory Management Practices on the Performance of Manufacturing Company Addis Transformer and Switch Gears S.C. The first portion of the chapter focuses on providing demographic details on the respondents, while the second section gives the results of the specific objectives of this study. Using SPSS version 20, the data was analyzed using descriptive statistics and graphic presentation methods such as histograms, scatter plots, tables, frequency, mean, and standard deviation. The following are the study objectives established in chapter one that should be completed in this chapter.

4.2 The Response Rate of the Study

The survey comprised 76 respondents from senior management, the import team, the tender team, finance, sales and marketing, production, and the store (warehouse) departments. Complete questionnaires were returned by 71 respondents, which were judged sufficient for data analysis. This led to a response percentage of 93.5%. This rate of response was regarded adequate for making conclusions regarding the research study. (Creswell ,2018) state that a response rate of 50% is enough to conduct an analysis and report the outcomes; however, a rate of 60% is considered to be good, and a rate of 70% or higher is deemed outstanding. In this regard, the study's response percentage was remarkable.

Table 4.1: Questionnaire Response rate

Response	Number	Percent
Total distributed Questionnaires	76	100%
Questionnaire Returned	73	96.05%
Incomplete Questionnaires	2	2.63%
Total used questionnaires	71	93.5%

Source: ATS employee's data analyzed using SPSS version 20

4.3 Demographic Data

Demographic data is essential for figuring out if the set of respondents offered by a research study appropriately represents the target community. The demographic data further allows the researcher to assess the participants' qualification to reply to the research questions in order to generalize the results of the research. Gender, age, level of education, and employment experience were among the demographic data collected in this study.

Table 3.2: Gender of the respondents

Gender of the respondents		Frequency	Valid Percent
Valid	Male	52	73.2
	Female	19	26.8
	Total	71	100.0

Source: ATS employee's data analyzed using SPSS version 20

Participants were requested to state which gender they were on the questionnaire. As shown in Table 4.2, the survey had 73.2% male and 20.7% female respondents. The table above also shows that at ATS, male employees exceed female employees. Yet, given that both men and women participated in the study, it is disputed that the research study's conclusions were not influenced by gender bias.

Table 4.3: Respondents Age

Age of the respondents		Frequency	Valid Percent
Valid	18-30	18	25.4
	31-40	34	47.9
	41-50	13	18.3
	51 and above	6	8.5
	Total	71	100.0

Source: ATS employee's data analyzed using SPSS version 20

According to According to Table 4.3, nearly half of respondents (47.9%) were between the ages of 31 and 40, while workers between the ages of 18 and 30 are (25.4%) and (18.3%), respectively,

and employees over 51 are (8.5%). This could imply that a significant percentage of ATS employees are between the ages of (31-40). Employees between the ages of 18 and 30 make up the second largest group. It might be a sign that ATS is now accepting personnel of a younger age range.

Table 4.4: Level of education

Employees Education level		Frequency	Valid Percent
Valid	Complete grade 12	9	12.7
	Certificate	5	7.0
	Diploma	17	23.9
	Degree	35	49.3
	Masters	5	7.0
	Total	71	100.0

Source: ATS employee's data analyzed using SPSS version 20

According to Table 4.4, 49.3% of respondents have a first degree, 23.9% have a diploma, 7% and 12% have a certificate and Grade 12 completed workers, respectively, and the remaining 7% have a master's degree.

Table 4.5: Work experience

Working Experience of employees		Frequency	Valid Percent
Valid	up to 6month	17	23.9
	6 months up to 5 years	26	36.6
	6 years up to 15 years	28	39.4
	Total	71	100.0

Source: ATS employee's data analyzed using SPSS version 20

Table 4.5 shows that 39.4% of employees have (6 -15 years) of experience, 36.6 % have (6 Month-5 years) of experience, and the remaining 23.9 % have (up to 6-month experience).

4.4. Descriptive analysis

This part provides descriptive analysis of model variables. This part has been divided into two parts: descriptive analysis for variables that are independent and dependent. Demand forecasting, stock-out, holding cost, technology, and employee's skill are among the independent variables were as under company performance profitability, service delivery and operational efficency were analyzed.

(Field ,2016) used an established rule of reference to create equal ranges for a scale made up of five Likert points (which spanned from strongly disagree to strongly agree in the survey questionnaire). A computed mean score of (1 to 1.80) denotes substantial disagreement, whereas mean values of (1.81 to 2.6), (2.61 to 3.4), (3.41 to 4.2), and (4.21 to 5.00) expressed respondents' judgments of disagree, somewhat agree, agree, and strongly agree as quoted. Standard deviation was utilized in the data analysis procedure. Smaller standard deviations (compared to the mean value) suggest that data points are concentrated around the mean, whereas big standard deviations (in comparison to the mean) indicate that data points are spread apart. The mean is a poor match to the data. The standard deviation is an indicator of how effectively the mean matches the data (Cooper & Schindler ,2006).

Table 4.6: Descriptive Statistics

Variables	N	Mean	Std. Deviation
Demand forecasting	71	3.4887	.71205
Stock-out	71	2.8834	.87700
Holding cost	71	3.6620	.54363
Technology	71	3.1604	.56225
Employees skill	71	3.5237	.62071
Performance	71	3.4686	.47687
Valid N (listwise)	71		

Source: ATS employee's data analyzed using SPSS version 20

As a result, the mean value of demand forecasting, stock-out, holding cost, technology, employee skill, and performance variables show that the replies corresponded to some extent agreed with the questionnaires' views. The standard deviation also indicates that the mean values reflect the data well.

4.4.1 **Descriptive Analysis for Independent Variables**

4.4.1.1 **Demand forecasting**

The mean results across all demand forecasting questions show that respondents' answers range from slightly agree to agree.

Table 4.7: Descriptive Statistics of Demand forecasting

Demand forecasting	N	Mean	Std. Deviation
The company conducts sufficient researches and involves sales team members, outside experts, and market researchers in order to understand what their consumers want.	71	3.52	.753
The company relies on clean, prepared, measured, and accurate data in order to forecast demands and reduce lost sales	71	3.54	.790
The companies demand forecasting is flexible and drives by the needs of the customers	71	3.55	.858
The company tries to use strategic demand forecasting methods in order to have effective demand forecasting's	71	3.61	.886
The companies forecasted demand is mostly accurate and customers will get the right product at the right time	71	3.20	.768

Source: ATS employee's data analyzed using SPSS version 20

The above table (Table 4.7) shows the descriptive statistics of demand forecasting components. The table displays the mean score of participants, with the mean score of responders for demand forecasting components ranging from (3.20 to 3.61)., indicating that the respondents are either agreed or somewhat agreed on the dimensions. The mean value of the companies forecasted demand is mostly accurate and customers will get the right product at the exact time is the lowest mean value by 3.20, while the company tries to use strategic demand forecasting methods in order to have effective demand forecasting's is the higher mean value by 3. 61 Also by mean score 3.54, respondents agreed that the company relies on clean, prepared, measured, and accurate data in order to forecast demands and reduce lost sales. Respondents agreed that the companies demand forecasting, method is flexible and drives by customers' needs by mean value of 3.55, and the respondents agreed that the company conducts sufficient researches and involves sales team members, outside experts, and market researchers in order to understand what their

customers wants by mean value of 3.52.

4.4.1.2 Stock-out

The mean values for all stock-out questions demonstrate that respondents' responses fall to slightly agree This means that the company is currently facing stock-out problem in somewhat extent and due to these there is time that employees and machine will be in idle condition. the Company's inventory policy might be the possible cause for this problem, and this leads the customers to shift to other competitors and this have a huge effect on the company's performance.

Table 4.8: Descriptive Statistics of Stock-out

Stock-out	N	Mean	Std. Deviation
The company mostly Running out of inventories or stocks	71	2.89	.903
Loss of sales resulting from shortage of inventories(stock)	71	2.87	.877
Stock-out results customer complain by longer lied time and make them to shift to competitors	71	2.90	.928
The company's inventory policy is one of the elements contributing to stock out and decreases in Profitability.	71	2.92	.922
Employs and machine will stay idle due to the stock out conditions	71	3.01	1.007

Source: ATS employee's data analyzed using SPSS version 20

(Table 4.8) provides the descriptive statistics of stock-out measurements. Based on the data, the participant's mean score for stock-out measurements is in the scale of (2.87 to 3.01), showing that the dimensions are slightly agreed upon. The respondents somewhat agreed on employees and machine will stay idle due to the stock out condition in the company in the mean value of 3.01 since this idle time affects the performance of the business, in the mean value of 2.89 the participants somewhat agreed that the company mostly running out of stocks or inventories as a result employees in the company and machines will stay idle and while interviewing some of the respondents they also mentioned that the company mostly running out of inventories because of the week planning an trend and due to this the company will lose sales and this affect the company's performance and also the respondents somewhat agreed by the mean value of 2.90 that this stock out situation results customers complains by longer lead time and make them to

shift to shift to other competitors and this prevents the company's market share growth and affects the company's performance . Respondents somewhat agreed by the mean value of 2.87 that loss of sale is resulting from shortage of inventories stock) the researcher understand by the checklist questions that stock-out is not the only thing for the company's loss sales, marketing, customer service Issues and overstocking on one type of item is also the other reason for the loss sales of sales. With a mean value of 2.92, respondents agreed that the business's inventory management is one of the factors contributing to stock out and decreased profitability, hence affecting the company's performance.

4.4.1.4 Holding cost.

The mean values for all holding cost questions show that respondents' responses agree, indicating that putting excessive funds tied up in stock reduces the company's available cash flow. Furthermore, having too much inventory results in the risk of price declines and quality problems, so keeping the caring costs as low as possible could have a big impact on the general success of the company.

Table 4.9: Descriptive Statistics of holding cost.

Holding cost	N	Mean	Std. Deviation
Getting caring costs as low as possible can have a significance impact on the overall profitability of the company	71	3.77	.637
Having too much money tied up in inventory can reduce available cash flows so that affects the company's financial performance	71	3.68	650
Holding inventory may increase the risk of decline in price, due to increase the supply of products in the market by compotators	71	3.79	.695
Storing excess stock can lead quality problem	71	3.72	.881
Automating inventory holding and cost will also help to improve productivity and reduce operational costs.	71	3.92	.627

Source: ATS employee's data analyzed using SPSS version 20

(Table 4.9) shows the descriptive statistics of holding cost dimensions. According to the table, the participants mean score for holding cost measurements is in an interval of (3.68 to 3.92), and the respondents agreed by a mean score of 3.77 that getting holding costs as low as possible can

have a significant impact on the company's profit margins in general, so that it has a significant impact on performance. The respondents agreed that having excessive cash held up in inventories may reduce available cash flows, affecting the company's financial performance by an average score of 3.68.respondents agreed by the mean value of 3.72 storing excess sock lead quality problems meanly in case of ATS transformer oils should not be stored for long time and also respondents agreed by the mean value of 3.92 that automating inventory holding and cost will help to improve productivity and reduce operational costs and improves firms performance.

4.4.1.4 Technology

The mean values for all technology questions demonstrate that respondent' responses fall among disagree, somewhat agree and agree. meaning the respondents response showed that the company currently facing drawbacks regarding technologies, warehouse management technology software, regarding updated data, information flow system, in reporting and data analysis features of technologies. but the company is trying to improve its inventory management practices regarding to technology.

Table 4.10: Descriptive Statistics of Technology

Technology	N	Mean	Std. Deviation
The company use warehouse management software in order to find which item is located where	71	2.48	.629
In the company data is updated in real-time through every computing system connected to the network. and provides greater clarity on actual inventory level and customer sales order history	71	2.96	.818
In the company information technology allows for information sharing and boosts communications between departments	71	2.79	.607
The company makes use of technology's analysis and reporting functions, which assist in gathering the correct data at the appropriate moment and analyzing the data.	71	2.83	.654
The company is working to improve its inventory management practices regarding to technologies	71	3.63	.960

Source: ATS employee's data analyzed using SPSS version 20

(Table 4.10) shows the descriptive statistics technological dimensions. According to the table the participants mean score for technological aspects ranges from (2.48 to 3.63), and the participants disagreed that the organization uses warehouse management software to determine which item is situated where. By a mean score of 2.48 respondents somewhat agreed that the firm data is updated through every computing machine connected to the network. Furthermore, the mean value of 2.96 offers clarity on actual inventory and client sales order history and the respondents somewhat agreed, with a mean value of 2.79, that the company's information technology allows information sharing and boosts communication between departments, and that the company uses analysis and reporting features of technologies that help to gather the right data at the right time and analyze the data. By a mean score of 3.63, respondents agreed that the company is working to improve its inventory management practices in terms of technologies.

The researcher while assessing the checklist questions respondents mentioned technology as one of the biggest problem of the company and this problem have a big result on the performance of the company .similarly with the technology dimension they said that the company is not using any inventory management system or software's they manually use excel to register the items or to make balance sheets .this makes a lot of mistakes ,it's difficult to know the exact amount of items in the stock ,gives wrong data's for planning and this results incorrect information and leads to forecast demeaned based on incorrect data , the company faces stock-out as a result and the companies profit, service delivery and operational efficiencies will reduce and this have a huge impact on the performance of the company .

4.4.1.5 Employees skill

The average answers for all questions on an employee's skill range from slightly agree to agree, according to the data. Employees generally felt that it was important to be able to quickly adjust to technological developments and to creatively apply the knowledge and skills they had learned in school and at work.

Table 4.11: Descriptive Statistics of Employee skill

Employees skill	N	Mean	Std. Deviation
Most employees of ATS have good computer skill	71	3.63	1.058
Employees have the ability to creatively apply the knowledge and skills they have learned via their training at work and quickly adapt to changes in technology.	71	3.35	.739
Most employees of ATS have enough academic knowledge and expertise on the area of their tasks	71	3.48	.772
Employees have willingness to get new skills and information that improve abilities	71	3.55	.789
Employees have good communication skill, collaborate with team member, share information and solve problem efficiently.	71	3.58	.710

Source: ATS employee's data analyzed using SPSS version 20

(Table 4.11) displays descriptive statistics for employee skill. The average score of the participants for employee skill aspects is in an interval of (3.35 to 3.63), the table indicates. By an average score of 3.63, respondents concur that ATS employees are computer literate; by a mean value of 3.48, respondents were almost in agreement that most ATS employees have adequate academic knowledge and expertise in the fields in which they work., The respondents agreed by the mean value of 3.55,3.58 , 3.35 respectively, indicating that developing employee skill is essential to achieving the organization's or the firm's goals and improving performance. Employees' willingness to acquire academic knowledge and information that enhances abilities and having good communication skill, collaborate with team members, share information, and solve problems efficiently have positive impact on the performance of the firms.

4.4.2 Descriptive Statistics for Dependent variable (performance)

The performance of Addis Transformer and Switchgears S.C is the study's dependent variable, and in this study, performance was assessed in terms of firm profit, service quality, and efficiency in operations. Following is a discussion of the descriptive analysis for each company performance metric.

4.4.2.1 In terms of Firm profit

Majority The majority of respondents indicated that the companies' sales volume had increased over the previous year, that the company lost sales as a result of a discrepancy between anticipated consumer demand and actual output, and that inventory-related costs, both direct and indirect costs, had an effect on a company's profitability, with average scores of 3.54, 3.56, and 3.86, accordingly Yet, the mean score of the company's market share had increased over the previous year has a mean value of 3.27.which means the participants slightly agreed on the idea.

Table 4.12: Descriptive Statistics of Firm profit

Firm profit	N	Mean	Std. Deviation
Inventory-related costs both direct and indirect costs have an impact on a company's profitability	71	3.86	.883
The company loses sales Due to a mismatch between predicted consumer demand and actual output,	71	3.56	.806
Over the years, the company's sales volume has been increased	71	3.54	.939
The company's market Share increased over the past years	71	3.27	1.028

Source: ATS employee's data analyzed using SPSS version 20

4.4.2.2 In terms of Service delivery

In accordance to the responses given by the participants, the average score is in the range of 3.01 and 3.38, indicating that they were somewhat in agreement with providing customers with the right products at the right time, effectively addressing specific customer concerns, improving communication with them, and providing them with efficient, quick, and friendly services in addition to forging strong relationships with them, as indicated by the mean scores of 3.27, 3.01, and 3.32, accordingly By scoring 3.42 the respondents concur that the company identify and address any obstacles to providing great services.

Table 4.13: Descriptive Statistics of Service delivery

Service delivery	N	Mean	Std. Deviation
The company provides the correct products in the right time for the clients	71	3.27	.956
The company responds efficiently to specific customer concerns and provides better communication with them	71	3.01	‘643
The company identify and address barriers to quality service	71	3.38	.618
The company provides efficient, quick, and friendly services to customers as well as build strong relationship with them	71	3.32	.713

Source: ATS employee’s data analyzed using SPSS version 20

4.2.2.3 Operational Efficiency

Based to the responses given by the participants, the average value is between 3.63 and 4.32, indicating that they agreed or strongly agreed with the given demonstration.

Table 4.14: Descriptive Statistics of Operational efficiency

Operational efficiency	**N**	**Mean**	**Std. Deviation**
The availability of inventory as per the production schedule increases the overall manufacturing productivity and lifting up labor productivity	71	4.32	.713
The production interrupted by stock out	71	3.92	.751
The company manufactures high-quality items in and delivers to its clients	71	3.63	.945
Improving demand forecasting and inventory management practices reduce waste in production area.	71	4.32	.692

Source: ATS employee’s data analyzed using SPSS version 20

(Table 4.14) shows the descriptive statistics of operational efficiency dimensions. As shown in the table, the participant's average rating for operational efficiency aspects ranges from (3.63 to 4.32). The respondents completely concurred that having inventory available according to the manufacture schedule boosts overall manufacturing productivity while increasing labor

productivity, improving demand forecasting, and inventory management practices reduce waste in the production area by an average score of 4.32. Participants agreed that stock-outs might disrupt production, and the company made high-quality products and delivered them to its customers by a mean value of 3.92 and 3.63, respectively.

4.5 Correlation Analysis

As stated by Marczyk et al. (2005), correlations are a particularly essential and important indicator of the connection between variables. The coefficient of correlation is a unit of assessment utilized to determine the degree of the linear association between the variables .in a correlation analysis is quite simple to recognize as it is denoted via the letter r as well as tends to have a value with no units varying from 1 to -1.

Positive correlation: A positive relation between variables indicates that they are headed in the exact same direction. Rises in one variable cause increases in the other one.

Negative correlation: A negative relationship between variables indicates that both of them flow in different directions. When one increases, the other decreases,

Weak/Zero correlation: If one factor has no effect on the other, there is no correlation. $r > 0$ shows a favorable relationship $r < 0$ denotes an unfavorable relationship. Near-zero values for r suggest an extremely poor linear relationship. As r travels from 0 to -1 or 1, the significance of the linear connection increases. Consequently, the research's correlations fell in the ranges of 0.01 to 0.30, 0.30 to 0.70, 0.70 to 0.90, and 0.90 to 1.00, with the associations rated low, moderate, strong, and very significant, accordingly.

The p-value for the statistically significant level for the correlation analysis is 0.05 (5% chance of detecting a mistake). As an outcome, only those probability test statistics with a low value (typically $p = 0.05$ or below or when significance level becomes 95% or higher) are evaluated for determination Marczyk et al (2010).

As stated by Field (2009), if the model used can clarify a large portion of discrepancy in the data obtained (the chance of receiving that test result is less than.05), you can conclude that the effect you're searching for is present throughout the population. If the likelihood of obtaining that test result exceeds .05, you assume that the impact was just too small to be identified.

Table 4.15: Correlations between independent variable and dependent variable

Correlations		Demand Forecasting	Stock-out	Holding cost	Technology	Employee skill	Performance
Demand Forecasting	Pearson Correlation	1	-.194	.249*	.314**	.731**	.600**
	Sig. (2-tailed)		.109	.036	.008	.000	.000
	N	71	71	71	71	71	71
Stock-out	Pearson Correlation	-.192	1	.168	-.042	-.162	-.363**
	Sig. (2-tailed)	.109		.162	.727	.164	.002
	N	71	71	71	71	71	71
Holding cost	Pearson Correlation	.249*	.168	1	.258*	.255*	.401*
	Sig. (2-tailed)	.036	.162		.030	.032	.001
	N	71	71	71	71	71	71
Technology	Pearson Correlation	.314**	-.042	.258*	1	.342**	.581**
	Sig. (2-tailed)	.008	.727	.030		.004	.000
	N	71	71	71	71	71	71
Employee Skill	Pearson Correlation	.731**	-.167	.255*	.342**	1	.577**
	Sig. (2-tailed)	.000	.164	.032	.004		.000
	N	71	71	71	71	71	71
Performance	Pearson Correlation	.600**	-.363**	.401*	.581**	.577**	1
	Sig. (2-tailed)	.000	.002	.001	.000	.000	
	N	71	71	71	71	71	71

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

Source: ATS employee's data analyzed using SPSS version 20

Table 4.15 provides the correlation analysis output, containing a matrix of the correlation coefficients for each of the five variables. The significant value of the correlation as well as the sample size (71) are shown under each correlation coefficient. Because each variable is exactly associated with oneself r = 1 across the table's diagonal. The results indicate that the demand forecasting has a positive relationship to ATS performance with Pearson correlation coefficient r=.600** the significance value is lower than.05 The threshold for significance is usually 0.05, so SPSS signifies any correlation value significant at this level using an asterisk

. Technology, employee skill and holding cost positively correlated to the performance of ATS with coefficient value .581**, 577**.401* with the significance value p< .05. Stock-out is negatively correlated with the performance of ATS with Pearson coefficient r= -.363** and the significant value is less than .05

Summary of Table :4.15

- ✓ There was significance correlation between demand forecasting and performance of ATS ($r = .600^{**}$, $p < .05$)
- ✓ There was a significant relationship between Stock-out and performance of ATS. ($r = -.363^{**}$, $p < .05$).
- ✓ There was significant correlation between holding cost and performance of ATS. ($r = .401^{*}$, $p < .05$).
- ✓ There was significance relationship between Technology and the performance of ATS. ($r = .581^{**}$, $p < .05$).
- ✓ There was significance relationship between Employee skill and the performance of ATS ($r = .577^{**}$, $p < .05$)

4.6 Regression Analysis

The researcher used the statistical package for social sciences (SPSS) to code, enter, and compute the measurement of multiple regressions for the study in addition to the descriptive and correlation analyses. Prior moving to the next phase, the researchers examined to see if the assumptions for multiple regressions analysis were met, and some of the assumptions are listed below.

Linearity -Is there a linear relationship between the independent factors and the dependent variable? If there is this suggests that for every rise of the predictors, the value of the outcome variable followed a straight line. This means that the relationship we're analyzing is considered to be linear Marczyk et al. (2010). As shown in (Figure annex 2), there is a linear relationship between all predictor components and the result variable.

Multicollinearity: When The correlation coefficient between the independent variables is checked in the most popular multicollinearity test. Scanning a correlation matrix of all predictor or independent variables to see if there are any higher correlation scores is one method of detecting multicollinearity, the higher correlation coefficients between the independent variables are 0.731^{**} between demand forecasting and employee skill (Field,2009) stated that higher correlation value means above.80 In this regard, Table 4.15 of the correlation matrix table reveals that multicollinearity does not occur in the model. The other most common test for multicollinearity is checking the tolerance and VIF value; if the tolerance value is less than 0.1

and the VFI is greater than 10, it indicates the presence of multicollinearity in the data.

Table 4.16: Collinearity statistics Coefficients[a]

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	1.158	.308		3.756	.000		
	Demand forecasting	.167	.071	.250	2.357	.021	.451	2.215
	Stock-out	-.173	.041	-.318	-4.270	.000	.909	1.100
	Holding cost	.227	.068	.259	3.348	.001	.848	1.179
	Technology	.315	.066	.372	4.805	.000	.845	1.183
	Employee skill	.114	.082	.149	1.397	.016	.448	2.233

a. Dependent Variable: Performance

Source: ATS employee's data analyzed using SPSS version 20

As (Table 4.16) provides the VIF values are all less than 10 and the tolerance is greater than 0.1. As result of this, we are able to conclude that our data is not collinear.

Independent Test: Any two observations' residual terms should be uncorrelated (or independent). This is commonly known as an absence of autocorrelation. The Durbin-Watson test can be utilized here to test the assumption that our residuals are independent or uncorrelated. The Durbin-Watson runs from 0 to 4, and we want a value close to 2 to indicate that the residuals are uncorrelated. As stated by (Field, 2009), values less than one or larger than three are obviously grounds for worry. The SPSS output in Table4.17 confirmed that the Durbin-Watson value is 1.890 which is closer to 2, indicating that the residual terms are uncorrelated, and that this analysis is acceptable.

Table 4.17: Durbin-Watson test –Model Summary

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.819[a]	.671	.646	.28381	1.890

a. Predictors: (Constant), Employee skill, Stock-out, Holding cost, Technology, Demand forecasting

b. Dependent Variable: Performance

Source: ATS employee's data analyzed using SPSS version 20

Normally distributed Test: The residuals are assumed to be random, normally distributed variables. This clearly means that the variations between the model and the actual data tend to be zero or very close to zero, and that significant deviations larger than zero occur only on very few occasions (Field, 2009). To test the normality of the residuals, look at the histogram and the normal probability plot.

Figure 4.1 shows that the pattern of distribution generally looks normal, as shown by the histogram.

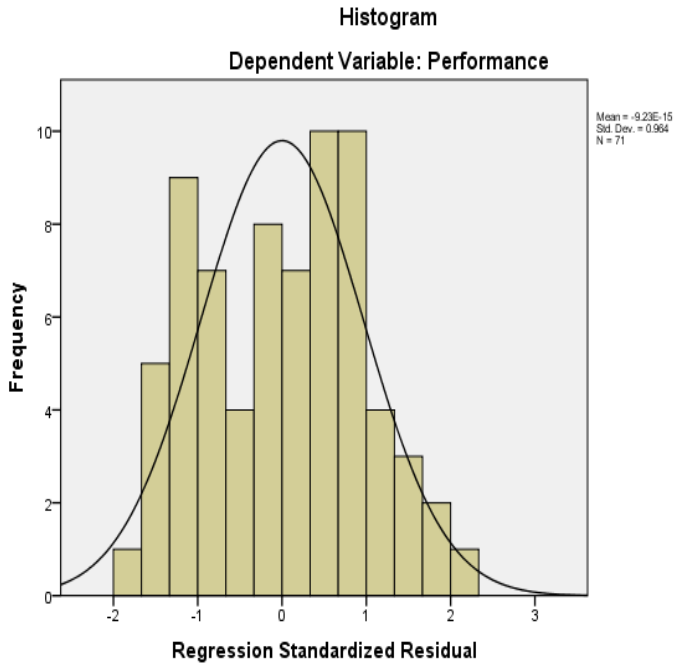


Figure 4.1: Histogram

The normal probability plot below Figure 4.2 depicts a deviation from normalcy. The closer the dots are to the diagonal line, the more normal the residuals are distributed. The P-P plots show that the points are virtually on the diagonal line or the slope of the line, indicating that the distribution is normal.

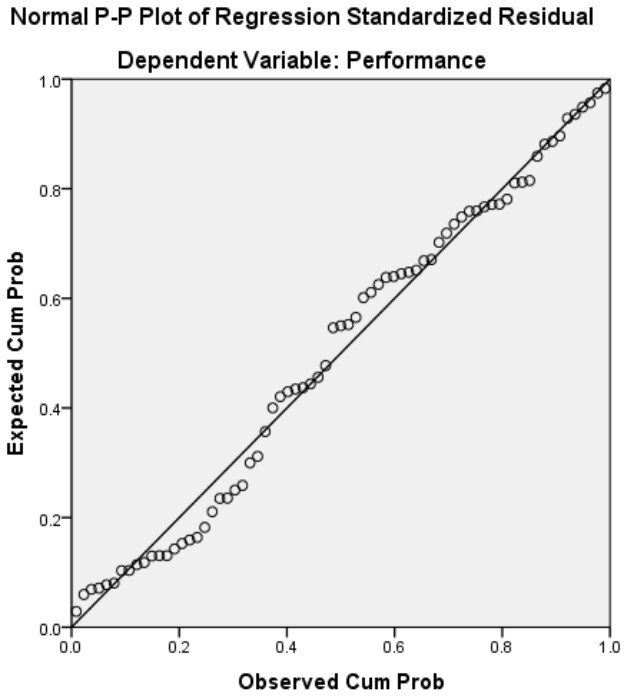


Figure 4.2: P-P Plots

Homoscedasticity: is the assumption that the variance in residuals (or the extent of inaccuracy in the model) is similar at each point throughout the model; in other words, the spread of residuals should be relatively consistent at every point of the variables that predict or across the linear model. To check this assumption, we must examine the resultant finale graph, which is shown below. This graph displays the standardized values predicted by our model against the standardized residuals acquired. The variation in the residuals should be fairly similar as the anticipated values grew (along the x -axis). If everything is in order, this should appear to be a random array of dotes. If the graph resembles a funnel, this assumption has most certainly been broken Figure 4.3 shows no evident symptoms of funneling in our plot of standardize residuals versus standardize predicted values, indicating that the assumption of homoscedasticity has been met.

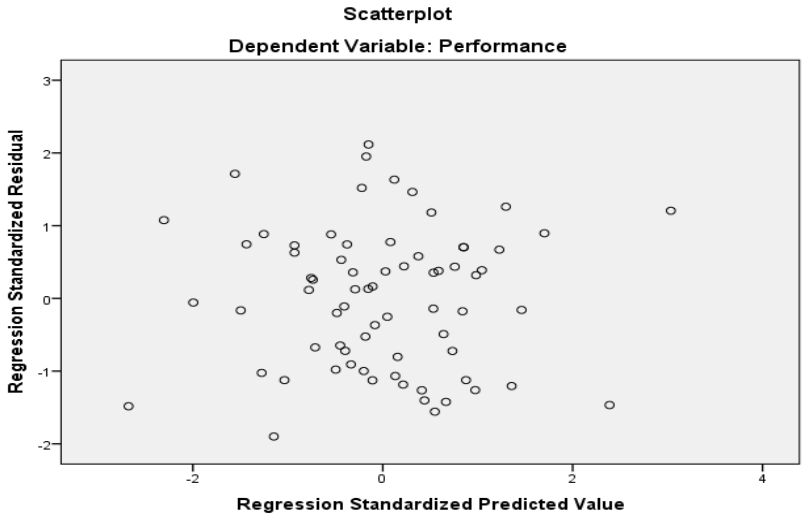


Figure 1.3: Scatter plot

Outlier: An outlier is a case that departs significantly from the data's overall pattern. Outliers may bias the model by altering the values of the assumed regression coefficients. We can apply the cooks distance statistics value test to see if there are any influential skewing our model. Cooks with values greater than one are likely to be significant outliers, influencing the model, and ought to be deleted and our analysis redone (Cresswell,2018). There is no major outlier in the annex (Figure annex 1). Since the assumption tests were successful, the researcher performs multiple regressions analysis. As indicated in Table 4.18, the multiple correlation coefficient between the independent variable and outcome variable was .819 which clearly indicates there is a high degree of relationship between the independent and dependent parameters.

Table 4.18: Multiple Regression Model Summaries

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.819[a]	.671	.646	.28381

a. Predictors: (Constant), Employee skill, Stock-out, Holding cost, Technology, Demand forecasting

b. Dependent Variable: Performance

Source: ATS employee's data analyzed using SPSS version 20

R Square is the total variance explained by the independent variable for the dependent variable. A number greater than.5 shows that the model is capable of determining the connection. In this example, the value is.671, which is acceptable.

The Adjusted R Square of the multiple regression models shows the abilities to which the predictors have to account for the outcome variance (Field, 2009). The value of.646 reveals that the predictor variables demand forecasting, stock-out, holding cost, technology, and personnel skill account for 64.6% of the change in performance, while additional variables that were not examined in this study account for 35.4% of changes in ATS performance.

Table 4.19: ANOVA[a]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	10.683	5	2.137	27.876	.000[b]
	Residual	5.236	65	.081		
	Total	15.918	70			

a. Dependent Variable: Performance

b. Predictors: (Constant), Employee skill, Stock-out, Holding cost, Technology, Demand forecasting

Source: ATS employee's data analyzed using SPSS version 20

As stated by Field (2009), the ANOVA reveals if the model matches the data sufficiently (value less than.05 in the Sig. column). Table 4.19 shows that the model was successful at forecasting the outcome variable which is performance of the company (ATS) since the significant value p is less than.001.

Table 4.20: Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.158	.308		3.756	.000
	Demand forecasting	.167	.071	.250	2.357	.021
	Stock-out	-.173	.041	-.318	-4.270	.000
	Holding cost	.227	.068	.259	3.348	.001
	Technology	.315	.066	.372	4.805	.000
	Employee skill	.114	.082	.149	1.397	.016

a. Dependent Variable: Performance

Source: ATS employee's data analyzed using SPSS version 20

As shown in Table 4.20, each of the coefficients are positive except for the stock out coefficient .167 for demand forecasting with significance value of .021, -.173 for stock-out with significance value of .000, .227 for holding cost with significance value of .001,.315 for technology with significance value of .000, and.114 for employee skill with significance value of 0.16. The positive sign reveals that there is a positive association across the dependent and independent variables with value less than 0.05, also the negative value indicates that there is a negative link between the dependent and independent variables with p value less than 0.05. The table above also shows how much each predictor influences the outcome if the effect of the other variable or predictor remains unchanged and regressions equation is described as follows.

Y Predicted = b0 + b1*x1 + b2*x2 +b3*x3 + b4*x4 +b5*x5……bn*xn

Performance Predicted = (1.158+ .167*Demand forecasting -.173* Stock-out +.227*Holding . Cost + .315* Technology + .114* Employee skill)

These values can be interoperated as

- ✓ Demand forecasting the coefficient value of B = .167, this value shows that as demand forecasting increased by single unit the performance of ATS increases by .171 this is true when other variables (stock-out, holding cost, technology and employee skill) held constant.
- ✓ Stock-out the coefficient value of B= -173, this indicates that as stock-out increases by one unit the performance of ATS decreases by .173 this is true when other variables

(demand forecasting, holding cost technology and employee skill) held constant

- ✓ Holding cost the coefficient value B= .227 this indicates that as holding cost increases by one unit the performance of ATS increases by .227 this is true when other variables (demand forecasting, stock-out, technology and employee skill) held constant
- ✓ Technology the coefficient value of B= .315 this indicates that as Technology increases by one unit the performance of ATS increases by .315 this is true when other variables (demand forecasting, stock-out, holding cost and employee skill) held constant
- ✓ Employee skill the coefficient value of B =.114 this shows that as the employee skill rises by single unit the performance of ATS will increases by .114 this is true when other variables (demand forecasting ,stock-out ,holding cost and technology) held constant

The standardization coefficient, on the other hand, specifies the quantity of standard deviations that will vary the outcome variable when the predictor is altered by one unit. The standardized beta values also provide us a solid idea of a predictor's 'importance' in the model because they all appear to be directly comparable and are a measured in standard deviation units, meaning that you can compare the coefficient sizes to see which one has a greater effect. We can also observe that greater betas value corresponds to greater t-values (Field, 2009).

4.7 Discussion

This study reveals inventory management practices and their values on the performance of Addis Transformer and switch -gears S.C. In accordance to the findings of the study, from the analyzed data in descriptive analysis, correlation analysis, and multiple regression analysis, the study demonstrates that there is interaction between inventory management practices (demand forecasting, stock-out, holding cost, technology, and employee skill) and performance of ATS.

The results of the research reveal that demand forecasting has favorably benefited ATS's performance, and as a result, the firm is attempting to enhance the trend of the demand forecasting approach in order to make it more flexible and accurate. The study's multiple regression results demonstrate a significant association between demand forecasting and company performance (p value is less than 0.05 which is p= (0.21). The value demonstrates that demand forecasting is important and has an impact on the firm's performance. Prior research had also provided empirical support for the importance of demand forecasting in improving company performance (Onkundi & Bichanga, 2016).

The results of the research reveal that stock-out has a negative impact on ATS performance. The multiple regression analysis of the study results demonstrate that stock-out substantially correlates performance with a p value less than 0.05. p= 0.00 in Prior research's (Mason, 2015) attempt study in the United States manufacturing companies in effects of surplus inventory on over time stock price and performance, and the findings also demonstrate that it has a significantly negative association with firm performance.

The outcome of the study shows that holding cost had a favorable effect on the performance of ATS, Technology and employee skill results from the multiple regression analysis shows the that the listed inventory management practices significantly predicts or influences the performance of ATS where p value <.05 .where in former studies Holding stock and ordering expenditures may improve an organization's performance, and Inventory control systems, organizational growth, information exchange, and channeled connections all have an impact on manufacturing business performance (Lyson & Gillingham, 2003). Training is a purposeful process that transforms attitudes, knowledge, and behaviors based on learning experiences and results successful performance in a single or numerous related occupations and also enhances firm's performance. As mentioned in the above the research output supports these findings that employee skill has positive relationship with the firm's performance.

Technologies for inventory management help businesses acquire a competitive edge by optimizing resource utilization, increasing customer satisfaction, conducting thorough assessments, and preventing losses. Clear information-based data tracking, in-depth analytics, and advanced demand forecasting techniques are among the most advanced technological options available, the majority of organizations aim to increase their inventory. In fact, modern technology help to improve and streamline inventory management (Lyson & Gillingham,2003).

With the aid of sophisticated data analysis and precise projections, businesses may save money by reducing stock-outs and overstocks and boosting corporate performance. Here the results of the research study show that performance of ATS positively affected by Technology and the regression output shows that this relationship is significant where the p value <.05. improving technology enhances the firm's performance.

CHAPTER FIVE

5. SUMMARY OF KEY FINDINGS, CONCLUSTIONS AND RECOMMENDATION

This section provides a concise summary of the key findings, the study's specific objectives, its conclusions, recommendations, and contribution. It also identifies potential future research possibilities in the subject areas.

5.1 Summary of the key findings

Based on existing literature, the goal of this study was to investigate how inventory management practices influenced the company's performance (ATS) the manufacturing company is located in the Burayu Town-Tatak Industrial Zone. The practice of inventory management was described as the preparation and coordination of all activities required to provide needed service as well as products, whereas the performance of a company was described as the degree to which a company or organization fulfills its profitability and efficiency goals.

In this study five variables five are identified in order to measure inventory management practices these are demand forecasting, stock-out, holding cost, technology and employee's skill and also firm performance was assessed by using metrics like profitability, service delivery and operational efficiency.

The research strategy and methodology used in the study were appropriate. Then an instrument for research was developed. Before distributing the research instrument to the employees of ATS in various departments, the constructs were pre-tested to make sure they were internally consistent.

There have been several research on this topic, the most of which have been undertaken in the industrial business. The study was aimed to accomplish five specific goals. Research questionnaires were developed and delivered to ATS personnel in different departments and responsibilities. The collected data was analyzed to yield the under results.

Key findings on objective 1: To assess the degree to which ATS performance is affected by demand forecasting affects.

The results of the research have demonstrated that demand forecasting had an important effect on performance. Therefore, it was determined by this study that demand forecasting improves business performance. Cost and delivery performance increase as demand forecasting accuracy

increases. Inventory levels and related expenditures could be minimized. As equipment usage rises and companies are able to strategically anticipate actions to be taken in advance, manufacturing processes are better controlled, resulting in lower production and product costs. Better forecast accuracy increases the probability that products will be available when the customer makes a purchase and improves delivery performance.

Key findings on objective 2: To investigate how Stock-out affects the performance of ATS.

The findings of the multiple regressions and correlations demonstrate that stock-out has a considerable impact on performance. The primary effect of a stock out is lost sales. If a customer attempts to place a purchase and the product is no longer in stock, they may become dissatisfied and do business elsewhere. Worse yet, the company may lose the profit from that sale and lose that customer forever. Production may also be interrupted, machines may have to sit idle, and employees may stay idle due to stock -outs and this can affect the performance of the company.

Key findings on objective 3: To examine how holding costs affect ATS performance.

The outcomes of this research revealed that holding costs had a beneficial effect on ATS performance as a predictive variable. The company's principal motive for having stock is generating revenue via the selling of goods. To limit the possibility of stock outs and the potential for missed sales. A firm normally holds some amount of stock.

Key findings on objective 4: To assess the degree to which technology affects the performance of ATS.

The results of the study show that technology has a substantial impact on performance. Therefore, it was determined by this study that technology improves company performance more effectively. Technologies for inventory management help businesses acquire a competitive edge by optimizing resource utilization, increasing customer satisfaction, conducting depth analysis, and preventing losses. Since continuous monitoring, deep analytics, and based on data demand forecasting are among the most modern digital tools available, the majority of companies aim to increase their inventory. In fact, modern technology help to improve and streamline inventory management (Saxena, 2009). Businesses can save money by eliminating stock-outs and overstocks and improving corporate performance with the use of advanced data analysis and exact estimates by using technologies.

Key findings on objective 5: To analyze the effects of employee skill on the performance of ATS.

The correlation and multiple regression results demonstrate how strongly employee skill affects output. Professional growth in skills helps workers accomplish company objectives, save money and energy on replacement expenses, and perform better at work. Skills affect employee motivation in addition to enabling the business to operate correctly.

5.2 Conclusion

The goal of the study was to ascertain how inventory management practices affect the performance of Addis Transformer and Switch-gears S.C. Profitability, service delivery, and operational efficiency have all been used to assess performance. The study's survey data analysis suggests that inventory management practice factors demand forecasting, technology, employees' skill, and holding cost have a favorable influence on ATS performance, whereas stock-out has a negative effect. These factors' outcomes account for 64.6 % of the components.

- ✓ Holding other predictor constant that as demand forecasting increased by one unit the performance of ATS increases by .167 this is true when other variables (stock-out, holding cost, technology and employee skill) held constant.
- ✓ Holding other predictor constant that as stock-out increases by one unit the performance of ATS decreases by .173 this is true when other variables (demand forecasting, holding cost technology and employee skill) held constant.
- ✓ Holding the other predictor constant that as holding cost increases by one unit the performance of ATS increases by .227 this is true when other variables (demand forecasting, stock-out, technology and employee skill) held constant.
- ✓ Holding other predictor constant that as Technology increases by one unit the performance of ATS increases by .315 this is true when other variables (demand forecasting, stock-out, holding cost and employee skill) held constant.
- ✓ Holding other predictor constant that as that as the employee skill increases by one unit the performance of ATS will increases by .114 this is true when other variables (demand forecasting, stock-out, holding cost and technology) held constant.

As a result, there is evidence to support the study's conclusion that inventory management practices as a whole have an impact on Addis Transformer and Switchgears S.C performance.

5.3 Recommendation

The following recommendations are made in accordance with the study's specified objectives based on its findings.

According to the research's findings, there is a statistically significant association between Addis Transformer and Switch-gears S.C.'s performance and its inventory management practices. Additionally, it was found that nearly 65 percent of the research's variables—demand forecasting, stock-out, holding costs, staff skill, and technology—explain the outcome variable. As a result, business managers are urged to include these and the following points in their strategic plans.

- The inventory management methods used by ATS need to be better systematized and supported by software. The research study also advises ATS to use the EOQ model for a start in order to manage and classify materials. A company might then improve all of its inventory management procedures by requesting the appropriate quantity of goods, it can also reduce costs, prevent stock-outs, and maintain an efficient supply chain. This will improve the company's stockout situation and increase the accuracy of demand forecasting.
- To compete with other businesses, the company must update its outdated working practices with more cutting-edge technology. It is preferable to adopt a variety of cutting-edge technological tools that aid in improving information flow, planning, inventory, asset management, finance, demand forecasting, warehouse management and item tracking, it is preferable to start with ERP, or the Cost point because it is more affordable for the company and is used by competitors for both Inventory and asset management.
- Since the majority of the present ATS employees are young professionals with limited experience, the research also suggests that employees' skills should be continuously developed. This may be done by providing them with various training courses that improve their technical and practical skills, as well as by exchanging experiences with them.

5.5 Area of future research

This study primarily examined how Addis Transformer and Switch-gears S.C.'s performance was impacted by inventory management practices of its own. By dropping some factors from the research findings, such as demand forecasting, stock-out, holding costs, employee skill, and technology, it was found that 35.4% of the performance remained unaccounted for. If researchers company managements or employes, become interested in conducting further research, they could measure the effects of inventory management practices based on other variables because there are other factors that have an impact on performance ,and also for manufacturing companies who imported their row materials from abroad availability of foreign currency (FCY) might be a biggest factor that might be affecting the performance of most companies so future research's might conduct on tis variables .Since transformer and switchgear firms are scarce in Ethiopia, future researchers can conduct studies in these industries in collaboration, providing a deeper understanding and comprehension.

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ANNEX

Annex one

Scatter plot : This figure showes that the cooks test results , acording to the test all values are less than one the hight cooks distance value is around 0.06 there fore there is no significant outlier which place influence in the model

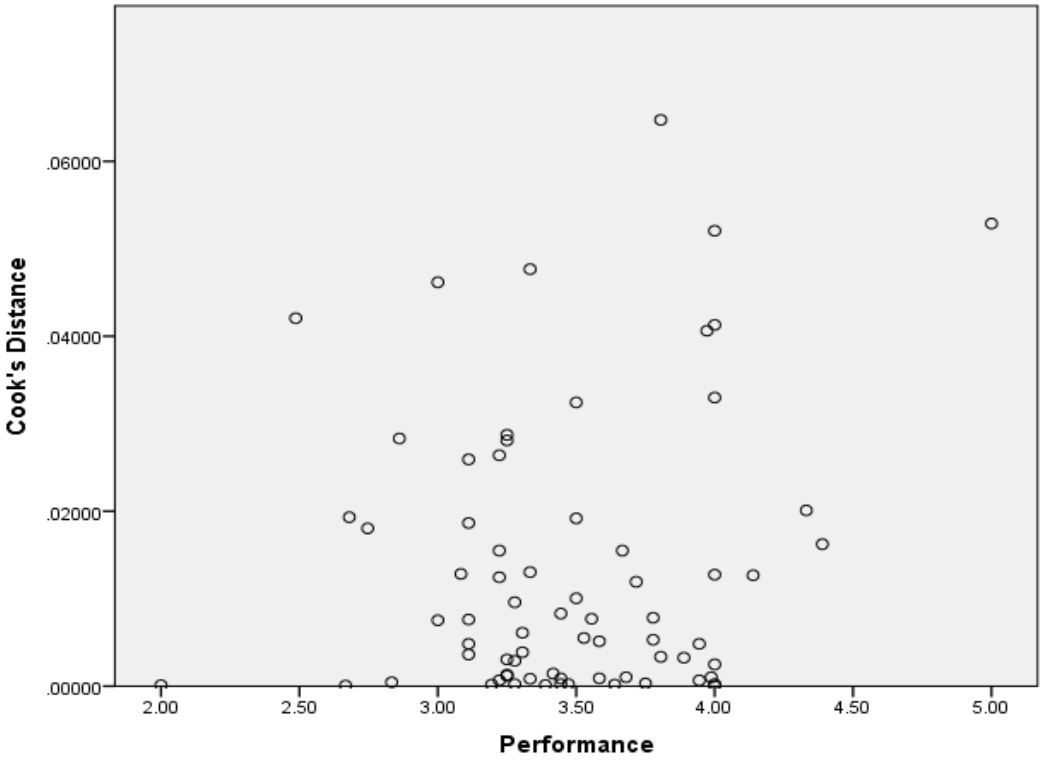

Figure annex 1: Scatter plot

Linear relationship graph: the relationship graph shows that There is a linear association between all predictor and the outcome variable.

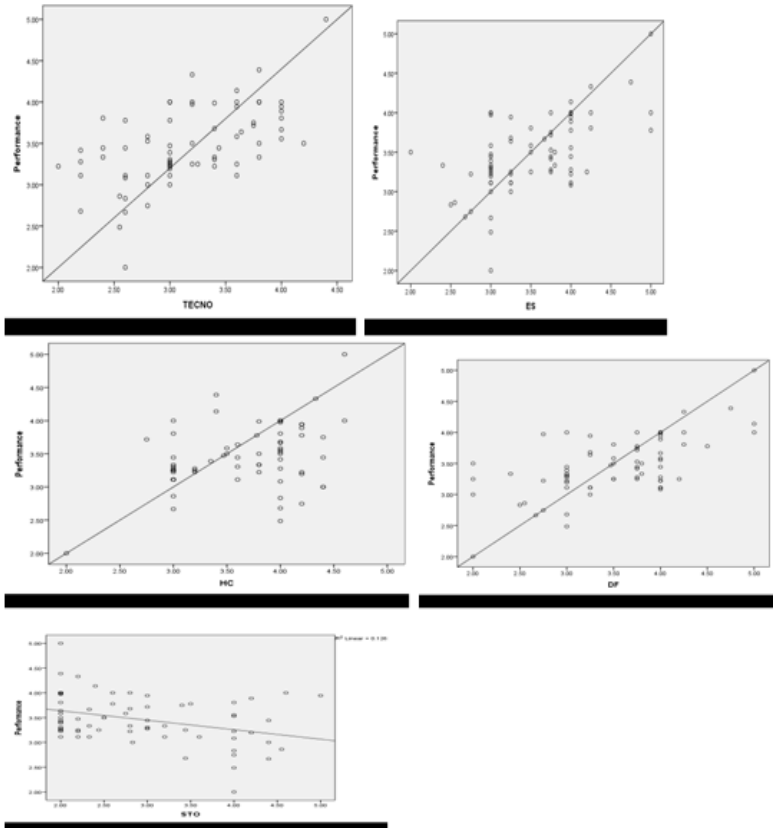

Figure annex 2: Linear relationship graphs

Annex Two

Addis Ababa University

Collage of Business and Economics School of Commerce

Debarment of Logistics and Supply Chain Management Research Questionnaire

Dear Addis Transformer and Switch Gears S.C staff members my Name is Bella Biniyam 3rd year supply chain and logistics management student and employee of Addis Transformer and Switch gears S.C, and thank you for taking a moment to complete this form .This study will be completed by employees working in various departments of Addis Transformer and Switch- gears S.C., including top management, the import team (logistics, supply chain, and procurement), finance, sales and marketing, production, and (store/warehouse).

The purpose of the data which is mainly collected from you is to undertake a successful partial fulfillment of Master's degree in logistics and supply chain management. The research under investigation entitled Effect of Inventory management practice on the performance of manufacturing firms, the case of Addis Transformer and Switch-gears S.C. there for the data provided in this questionnaire is vital to the success and fullness of fullness of the study result. If you get some un clear ideas or any questions related to the questionnaire you can contact me by 0917821439/ biniyambella@gmail.com. Finally would like to say thank you again.

Section1; Demographic Information

Please put your (√) mark on the box provided for the statement you agreed with. Which of the following best describe your department of employment?

1, Top management	
2, Import team	
3, Finance	
4, Sales and marketing	
5production	
6, store/warehouse	

2. Sex. Male ☐ Female☐

3. Age. 18-30☐ 31-40☐ 41-50 above50 ☐

4. Educational level.

Complete grade/1-12☐ Certificate☐ Diploma☐ Degree ☐

Masters ☐ PhD☐

5. Working experience

<6-month ☐ 6-month-5-year ☐ 6-15year☐

>15year ☐

Section 2: Inventory management practices

Indicate the extent to which your agreement level is with the KPIs for inventory management practices

factory Note.

1 Strongly Disagree
2 Disagree
3 Somewhat Agree
4 Agree
5 Strongly Agree

It. No	DEMAND FORCESTING	1	2	3	4	5
1	The company conducts sufficient research in order to understand what their consumers want.					
2	The company relies on clean, prepared, measured and accurate data in order to forecast demands and reduce lost sales.					
3	The companies demand forecasting is flexible and drives by the needs of the customers					
4	The company use strategic demand forecasting methods in order to have effective demand forecasting's					
5	The companies forecasted demand is mostly accurate and customers will get the right product at the right time					

It. No	STOCK-OUT	1	2	3	4	5
1	The company mostly Running out of inventories or stocks					
2	Loss of sales resulting from shortage of inventories(stock)					
3	Stock-out results customer complain by longer lied time and make them to shift to competitors					
4	The company's inventory policy is one of the elements contributing to stock out and decreases in Profitability.					
5	Employs and machine will stay idle due to the stock out conditions.					

It. No	HOLDING COST	1	2	3	4	5
1	Getting caring costs as low as possible can have a significance impact on the overall profitability of the company					
2	Having too much money tied up in inventory can reduce available cash flows so that affects the company's financial performance					

3	Holding inventory may increase the risk of decline in price, due to increase the supply of products in the market by compotators					
4	Storing excess stock can lead quality problem such as degradation and this will increase the holding cost and affects the performance of the company					
5	Automating inventory holding and cost will also help to improve productivity and reduce operational costs.					

It. No	Technology	1	2	3	4	5
1	The company use warehouse management software in order to find which item is located where					
2	In the company data is updated in real-time through every computing system connected to the network. and provides greater clarity on actual inventory level and customer sales order history					
3	In the company information technology allows for greater information sharing and boosts communications between departments					
4	The company uses analysis and reporting features of technologies which help to gather the right data at appropriate time and analyze the data.					
5	The company is working to improve its inventory management practices regarding to technologies					

It. No	Employees kill	1	2	3	4	5
1	Most employees of ATS have good computer skill					
2	Employees have ability to adapt quick to technology changes and creative application of knowledge and skilled acquired through training their work.					
3	Most employees of ATS have enough academic knowledge and expertise on the area of their tasks					

4	Employees have willingness to get new skills and information that improve abilities					
5	Employees have good communication skill, collaborate with team member, share information, and solve problem efficiently.					

Section Three: Performance

It. No	Firms Profits	1	2	3	4	5
1	Inventory-related costs both direct and indirect costs have an impact on a company's profitability.					
2	The company loses sales Due to a mismatch between predicted consumer demand and actual output,					
3	Over the years, the company's sales volume has been increased					
4	The company's market Share increased over the past years					

It. No	Service delivery	1	2	3	4	5
1	The company provides the right products in the right time for the customers					
2	The company responds efficiently to specific customer concerns and provides better communication with them.					
3	The company identify and address barriers to quality service					
4	The company provides efficient, quick and friendly services to customers as well as build strong relationship with them					

It. No	Operational efficiency	1	2	3	4	5
1	The availability of inventory as per the production schedule increases the overall manufacturing productivity and lifting up labor productivity					
2	The production interpreted by stock out					
3	The company manufactures high-quality items in a short period. of time and delivers to its clients.					
4	Improving demand forecasting and inventory management practices reduce waste in production area.					

Annex Three
INTERVIEW CHECK LIST

1. How is the inventory management practice in the company?
2. What are the major challenges your company is facing regarding inventory management practices.
3. How do you forecast demand?
4. what is the root Couse of the demand and supply mismatch?
5. What have you done to reduce the mismatch between the demand and supply?
6. What is the impact of having excessive stock and holding costs?