

Addis Ababa
University

(Since 1950)



College of Business and Economics

School of commerce

Logistics and Supply chain management

The Effect of Inventory Management Practices on Corporates Operational Performance:

The case of ethio-telecom

By:

Mubarek Abdulkadir

ID: GSE/6584/12

Advisor: Zelalem Bayisa (PhD)

Jun, 2022 Addis Ababa

Addis Ababa University
College of Business and Economics
School of commerce
Logistics and Supply chain management

Signed by Examine Committee:

We the examiners' board approve that this thesis has passed through the defense and review process.

Advisor: Dr. Zelalem Bayisa (PhD)

Signature ----- Date -----

External Examiner: Nakachew Bashu (PhD)

Signature ----- Date -----

Internal Examiner: Tariku Jebena (PhD)

Signature ----- Date -----

Abstract

The purpose of this research is to examine the effect of inventory management practices on organizational performance at ethio telecom. For this particular study inventory management practices are represented by effective inventory planning, inventory controlling, inventory recording and strategic supplier partnership. Using Yamane (1973) formula 255 samples is determined from 687 total population. Quantitative approach is used to analyze the primary data gathered through structured questionnaire from 207 employees of ethio telecom supply chain management division staff. Both descriptive and explanatory research design is used. The data was analyzed through descriptive statistics and inferential analysis methods. The employees have agreed with the extent of operational performance, effective inventory planning, inventory controlling, inventory recording and strategic supplier partnership from low extent to high extent. The multiple regression analysis result indicated that all factors except inventory recording have significant effect on operational performance. Furthermore, 49.1 percent change in operational performance is explained by effective inventory planning, inventory controlling, inventory recording and strategic supplier partnership. Finally, the study recommends the case company to improve employees' ability and management's commitment towards inventory management practices and to invest more to reduce lead time and enhance leanness.

Key terms; effective inventory planning, inventory controlling, inventory recording, strategic supplier partnership, operational performance

Acknowledgement

First and for most, I want to express my gratitude to the almighty the creature of the universe for protecting me from calamities and giving me the patience, fortitude and determination to face life's trial.

I would like to thank my advisor Zelalem Bayisa(PhD) for his wise guidance and tremendous assistance throughout this research project.

In addition, I would like to thank all employees who respond, for their kind support and taking time to fill my questionnaire. A special appreciation goes to my colleague Yetinayet Million for suggesting certain strategies to ease my work and for her invaluable advice during my journey.

Finally, I want to thank my classmates Shawel Asfaw, Mohammed Hayat Ibrahim, Tewodros Yoseph and Mintesnot Haile without whom it would have been extremely difficult if not impossible to complete, this project.

Table of Content

Contents	Page
Abstract.....	I
Acknowledgement	II
List of Tables	V
List of Figures.....	VII
List of Acronyms/Abbreviations.....	VIII
Chapter One	1
1. Introduction.....	1
1.1. Background of the study	1
1.2. Statement of the problem	3
1.3. Research Question	5
1.4. Objectives of the Study	5
1.4.1. General Objective	5
1.4.2. Specific Objectives	5
1.5. Hypothesis of the Study	5
1.6. Significance of the study.....	6
1.7. Scope of the study/Delimitation.....	6
1.8. Definition of Terms.....	6
1.9. Organization of the study.....	8
Chapter Two.....	9
2. Literature Review.....	9
2.1. Introduction.....	9

2.2.	Theoretical Literature Review	9
2.2.1.	Concepts of Inventory Management	9
2.2.2.	Theories of Inventory Management	16
2.2.3.	Inventory Management Practices	Error! Bookmark not defined.
2.3.	Empirical Review.....	20
2.4.	Research Gap	24
2.5.	Conceptual Framework.....	24
Chapter Three.....		25
3.	Research Methodology	25
3.1.	Introduction.....	25
3.2.	The Research Approach.....	25
3.3.	Research Design.....	25
3.4.	Data type and source.....	25
3.5.	Target Population.....	26
3.6.	Sample size	26
3.7.	Sampling Technique	27
3.8.	Method of Data Collection.....	27
3.9.	Methods of Data Analysis.....	28
3.10.	Validity and Reliability.....	30
Chapter Four		31
4.	Data Presentation, Data Analysis and Interpretation	31
4.1.	Introduction.....	31
4.2.	Response Rate.....	31

4.3. Reliability Analysis.....	32
4.4. Descriptive Statistics.....	32
4.4.1. Descriptive Statistics for Demographic characteristics of respondents	33
4.4.2. Descriptive Statistics for Operational Performance and Inventory Management Practices	34
4.5. Inferential Analysis.....	38
4.5.1. Pearson Correlation Analysis.....	38
4.5.2. Assumptions Testing.....	41
4.6. Multiple Regression Analysis.....	46
4.7. Hypothesis Testing.....	50
Chapter Five.....	53
5. Summary of Findings Conclusion and Recommendation.....	53
5.1. Introduction.....	53
5.2. Summary of Findings.....	53
5.3. Conclusions.....	54
5.4. Recommendations.....	55
5.5. Limitation and Suggestions for Future Studies.....	56
References.....	57
Annex.....	67

List of tables

Tables	Page No.
Table 3. 1 Rule of Thumb of Cronbach's Alpha	30
Table 4. 1 Response Rate.....	31
Table 4. 2 Reliability Test.....	32
Table 4. 3 Demographic Characteristics.....	33
Table 4. 4 Descriptive Statistics (Mean and Standard Deviation) for Operational Performance .	35
Table 4. 5 Descriptive Statistics for Effective Inventory Planning	35
Table 4. 6 Descriptive Statistics (Mean and Standard Deviation) for Inventory Controlling	36
Table 4. 7 Descriptive Statistics (Mean and Standard Deviation) for Inventory Recording	37
Table 4. 8 Descriptive Statistics for Strategic Supplier Partnership.....	38
Table 4. 9 Correlation analysis result	39
Table 4. 10 Correlation Interpretation	40
Table 4. 11 Multi collinearity Model.....	41
Table 4. 12 Skewness and kurtosis	42
Table 4. 13 Residual Statistics	45
Table 4. 14 Model summary ^b	47
Table 4. 15 ANOVA ^a (Analysis of variance)	48
Table 4. 16 Regression Coefficients ^a	49

List of Figures

Figures	Page No.
Figure 2. 1 Conceptual framework of the study	24
Figure 4. 1 Histogram	43
Figure 4. 2 Normal P-P Plot of Regression Standardized Residual.....	44
Figure 4. 3 Scatter Plot.....	45

List of Acronyms/Abbreviations

ANOVA - Analysis of Variance

EDI – Electronic Data Interchange

EIP – Effective Inventory Planning

EOQ – Economic Order Quantity

EPOS – Electronic Point of Sale

IC – Inventory Controlling

IR – Inventory Recording

JIT – Just in Time

MRP – Materials Requirements Planning

OP – Operational Performance

PSA – Product and Service Agreement

RBV – Resource Based View

RDT – Resource Dependence Theory

SCM – Supply Chain Management

SPSS - Statistical Package for Social Sciences

SSP – Strategic Supplier Partnership

VIF - Variance Inflation Factor

VMI – Vender Managed Inventory

Chapter One

1. Introduction

1.1. Background of the study

Inventory refers to the value or quantity of raw materials, supplies, works in process (WIP), and finished goods held or stored for use as need arises. Since inventory is an idle asset, it can end-up being a financial burden for businesses. Though inventory is associated with different financial risks many corporates need to keep inventory to respond to anticipated customer demand and reduce lost sales. Without inventory it is difficult to avail products when they are needed. It is also considered a viable strategic option for future operations and procurement. That is why it is thought as *a necessary evil* for meeting customer service requirements. Particularly it becomes more problematic when inventory is greater than the actual demand of customers and it becomes obsolete (Min, 2015).

According to Iravo & Mukopi, (2015) excess stock could result in funds being tied down, increase in holding cost, deterioration of materials, obsolescence and theft; while shortage of materials can lead to interruption of products for sales; poor customer relations and underutilized machines and equipment. Hence, optimal inventory level is important to have smooth operation.

Between insufficient and excessive inventories is where the ideal stock stage should be. A competitive strategy identifies the range of consumer wants that it aims to satisfy through its services and goods. The aggressive approach focuses on one or more client segments and aims to offer services and products in order to fulfill customers' needs. In order to prevent stock outs, maintain uninterrupted revenue, and provide effective customer service, inventory management entails maintaining enough stock, regulating investment in inventories by maintaining at the best level of operation while minimizing wear and tear costs and time (Kamau & Assumpta, 2015).

In the operation process inventory management plays a significant role of planning, ordering and scheduling of materials by overseeing the three types of inventories, i.e. raw materials; work in process and finished goods (Garry, 2000). According to Lau & Snel, (2006) inventory management is mainly about specifying the size and placement of stocked goods. It is also important at different locations within a facility or within multiple locations of a Supply Chain to safeguard the regular and planned

activities of the organizations against the random disturbance of running out of materials or goods for improved performance. These days, inventory management becomes of great concern for many supply chains. Because, inventory management performance, is a major determinant of a company's success or failure.

Inventory management is important to an organization's growth and survival because ineffective and inefficient inventory management means that the organization loses customers and sales decline. Prudent inventory management reduces depreciation, pilferage, and waste while ensuring materials are available when needed (Ogbad, 2009). In today's competitive and dynamic market, inventory management is critical to an organization's success. This entails lowering the cost of stock holding by keeping just enough inventories in the right place, at the right time, and at the right cost to make the right amount of needed products. High levels of inventory held in stock have a negative impact on the procurement performance of the capital held, which has a negative impact on cash flow leading to reduced efficiency, effectiveness and distorted functionality (Koin et. al. , 2014).

Inventory management has always been essential to corporate operations; there has never been a time in history when it wasn't. Even in the past, when wood was the main source of energy, cave dwellers required a mechanism to manage their stockpiles. But throughout time, inventory management has undergone significant change as a result of the requirement to precisely audit goods or raw materials, manage customers' expectations, prevent overstocking, and control supply chain overheads.

Stock control has gradually transformed into an essential enterprise resource planning (ERP) function, powered by intelligent software and the cloud. It is getting smarter all the time, providing real-time visibility into the supply chain, providing warehouse managers with detailed demand analytics, and assisting manufacturers, distributors, and retailers in reducing costs and improving profits.

The goal of inventory management is to ensure sufficient inventory to maintain acceptable levels of available demand while minimizing associated holding, administrative, and stock out costs. In the field of inventory management, various activities such as purchasing, classification, inspection, coding, stock keeping and stock taking are carried out (Koin et al. , 2014).

According to Mbah et al.(2019)Under excellent inventory management practices within an organization, such that machines are optimally utilized, costs are kept low by reducing warehousing costs and

operational efficiency since raw materials are available to ensure the firm's continuous flow of processing activities, the result is high quality operational efficiency and overall performance. Panwar et al. (2018) advocated for the adoption of inventory management practices because they have a direct impact on firms' operational performance.

Inventory management is critical to the success of a telecom operation. It is helpful to understand where the inventory is going and where it is installed. Warehouse operations will be less complicated if inventory is well managed. This enables the capture of complexities and intricacies surrounding inventories as they move through the supply chain.

Companies are required to be responsive and adaptable to their clients in today's competitive environment, which has been strengthened by the globalization phenomenon. To be competitive in the telecommunications industry, which is characterized by an unpredictable and turbulent market with shorter product lifecycles, it is critical to be adaptable, flexible, and follow a continuous improvement mentality.

This study is going to be conducted in the time when state owned giant monopoly; ethio-telecom is almost have been liberalized and in the way to be privatized.

1.2. Statement of the problem

Inventory is a significant part of the assets for the business firms. Inventories are goods kept for current or future sales to gain profit. It shows the largest costs accounting 20-30 percent of the total investment in many firms. Therefore, it should be managed well to avail the right inventories at the right time to the right place with the right amount. This implies that the operational performance of a firm is directly or indirectly related to inventory management(Vipulesh, 2015).

Efficient and continuous improvement of operations in any organization is highly reliant on inventory management system. In many organizations as a result of the money wrapped-up on inventory, direct materials represent the total product cost, in which, affecting the profitability of the organization. Organizations at times do not control their inventory holding, resulting in under stocking and causing the organization to pause operation, that could result to the operational ineffectiveness(Mohamud, 2016).

One of the reasons for inefficiency is the market structure that the operating company is organized. When the market behavior is monopolistic, apparently there would be higher inefficiency in operation. In the case of competitive market, resource allocation is pareto efficient, and welfare is maximized. However, since monopoly output is less than the optimal output under competitive equilibrium, monopoly output is inefficient (Cowell, 2004).

Unplanned purchase requests amounted for around 44% of total purchase order requests, according to the ethio telecom SCM 2021 annual performance report. According to the report, 56.5 percent of inventories are held in 23 regions of the company's warehouses for more than a year without being moved. The overall cost of holding was expected to be in excess of 255,120,072 ETB. In addition, the report focused on unrecorded objects discovered at various sites, which can have an impact on procurement, warehousing operations, and asset management activities. And also it creates a challenge to track inventories accurately and transparently across operational units.

For the past 128 years, the firm has been the exclusive telecom provider. However, it will face competition from foreign telecom providers going forward, necessitating the development of improved techniques to control and measure resource utilization and eliminate waste in the supply chain process. To do so, the company cannot continue to function in the same manner as it has for many years. It is necessary to adopt a new paradigm. To stay competitive in the future, it'll need a lean operating system, effective resource use, and an agile mindset. As a result, it is critical to investigate whether inventory management practices can help improve operational performance and, as a result, overall performance of the company. This study is intended to put a foot print on the organization's new journey.

Several studies have been conducted on inventory management practices and operational performance, for instance, Atnafu (2018) assessed the relationship between inventory management practices and micro and small enterprises performance. His findings revealed that higher level of inventory management practices can lead to enhanced competitive advantage and improved organizational performance. Nevertheless, the study focused on micro and small enterprises found in four selected towns in Arsi zone manufacturing sector. So, the findings can't be generalized to telecom sector. Baye (2017) examined the effect of inventory management practices on Ethiopian airlines operational performance. The research concluded that inventory management practices impact significantly the operational performances of the company, but the study covered operational performance concentrating

only on time performance. Wedajo (2017) assessed the inventory management system in Ethiopian Electric Utility. The research finding concluded that there are quite operational gaps in the company because of poor inventory management system. However, the research assessed the inventory management practices in EEU in general terms creating a research gap, without generating cause and effect relationship. The researcher believed it essential to fill the studies gap that exists within the effect of inventory management practices on operational performance of ethio telecom.

1.3. Research Question

As it is stated above, the purpose of the study is to investigate the effect of inventory management practices on corporate operational performance at ethio telecom. So the research will try to address the beneath basic research questions

- i. How Inventory Planning Affects the Operational Performance of Ethio-Telecom
- ii. How Inventory Control Affects Operational Performance of Ethio-Telecom
- iii. How the Recording of Inventory Affects the Operational Performance of Ethio-Telecom
- iv. How Strategic Supplier Partnership Affects the Operational Performance of Ethio-Telecom

1.4. Objectives of the Study

1.4.1. General Objective

To assess the effect of inventory management practices on the operational performance of ethio telecom.

1.4.2. Specific Objectives

- To investigate the effect of effective inventory planning on the operational performance of ethio-telecom
- To evaluate the effect of inventory control on operational performance of ethio-telecom
- To examine how the recording of inventory affects the operational performance of ethio-telecom
- To assess how strategic supplier partnership affects the operational performance of ethio-telecom

1.5. Hypothesis of the Study

H1: 1Effective Inventory Planning has positive and significant effect on operational performance

H1: 2 Inventory controlling has positive and significant effect on operational performance

H1: 3 Inventory recording has positive and significant effect on operational performance

H1: 4 Strategic supplier partnership has positive and significant effect on operational performance

1.6. Significance of the study

Inventory is a major asset in many businesses. It helps to buffer uncertainty of supply and demand and to avail resources when replenishment times are too longer. However, inventory is regarded as a hindrance since it entrusted cash, it takes space and other resources to be stored. Inventory management is important to balance the tradeoff between changeover cost and inventory holding cost. However, inventory management is overlooked in many business firms.

Hence, it is believed that the study contributes in identifying the major hindrances of inventory management principles and concepts in the case organization. Thereby, the findings of the study help higher level managers to develop applicable policies, procedures and rules that enhance company's resource utilization approach. Moreover, as far as my assessment, there are no more researches have been conducted in the area. So, this study will help other researchers to investigate more on the topic.

1.7. Scope of the study/Delimitation

Because of the limitation of organized data, the researcher is unable to make a longitudinal study, to observe the implementation result of inventory management system, which can impact the credibility of the study.

This study was limited to the internal inventory management of ethio-telecom; that will not reach out into the other members of the supply chain network. Therefore, the study did not investigate different external stakeholders in the supply chain in terms of inventory management practices, which may reduce the contribution of the study.

1.8. Definition of Terms

Inventory- is all the money that the system has invested in purchasing things it intends to sell.

Inventory Management- the science or art of maintaining stock levels of a given group of items incurring the minimum cost consistent with other related targets and objectives set by management (Ahmad, 2014).

Stock out- absence of items that are demanded in the market which will result in lost sales

Over stock- items kept in warehouse more than the market demand which leads to increase unnecessary costs on the company.

Supply Chain Management- “The integration of key business processes from end-users through original suppliers that provide products, services, and information and add value for customers and other stakeholders” (cooper, M.C., Lambert, D.M., Pagh, & J.D., 1997)

Economic order quantity- an optimal order quantity that minimizes total inventory cost and reduces lost sales by answering the questions of how much and when to place a replenishment order.

Material Requirements Planning- a time-phased, priority dependent inventory control and planning system, which calculates the material requirements and schedules orders to meet changing demand while minimizing unnecessary inventories.

Business performance- Performance is a measure of the results achieved and performance efficiency is the ratio between effort extended and results achieved. The difference between current performance and the theoretical performance limit is the performance improvement zone. The performance platform is the infrastructure or devices used in the performance act (Malcom, 2005).

Operational Performance- Operational performance is a measure of how well an organization's procedures and units are aligned to perform and achieve the firm's goal. It may also be described as all activities carried out within an organization in order to achieve stated goals using available resources and on time in an effective and efficient manner.

Inventory control- Inventory control is the activity, which organizes the availability of items to the customers of the organization. It co-ordinates the purchasing, manufacturing and distribution functions to meet the marketing needs (Mohamud, 2016)

1.9. Organization of the study

This paper is organized in 3 chapters. The first chapter deals with the introduction part consisting background of the study, statements of the problem, research questions, objectives of the study, hypothesis of the study, significances of the study, scope/delimitation of the study, Definition of terms and organization of the study. Chapter two contains a review of the related literature. Chapter three depicts the research design and methodology. In chapter four research findings gad analyzed. Finally, the summary of the findings, conclusions and recommendations are posed in chapter five.

Chapter Two

2. Literature Review

2.1. Introduction

This chapter deals with the review of literatures related to the study area. A literature review is based on the assumption that knowledge accumulates and it is important to learn from others and build-up on what others have done. Researchers read studies to compare replicate or criticize them for weaknesses (Mohammed et al., 2014).

Reviews vary in scope and depth; they have to be strong enough to help the fulfillment of different goals. For instance, to demonstrate a familiarity with a body of knowledge and establish credibility; to know the path of prior research and how a current research project is linked to it; to integrate and summarize what is known in an area; to learn from others and stimulate new idea; identification of variables and to develop theoretical framework (Mohammed et al., 2014). For this particular study, literatures are reviewed under the following sub-headings.

2.2. Theoretical Literature Review

The theoretical review assesses previous academic researches and aids in making well-thought-out sense of the relationship between inventory management practices and the operational performance of ethio telecom.

2.2.1. Concepts of Inventory Management

Inventory management is the process of planning what to order, how much to order, when to order, and how much to stock so as to keep costs associated with purchasing and storing optimal while satisfying customers demand. It can be thought that inventory management is about meeting customers' needs while reducing inventory costs.

Along with other production elements, inventory is a crucial component of the production of goods or services. In many firms, inventories—including finished goods, work-in-progress, components, raw materials, storage, spare parts, and so forth—made up 80% or more of the working capital. The art and science of managing stock levels of a specific group of commodities at the lowest possible cost while

still meeting other pertinent management aims and objectives is what inventory management is all about (Lwiki, Ojera, Mugenda & Wachira, 2013). Inventory management, according to Naliaka and Namusonge (2015), is a delicate balance between lead times for replenishment, carrying costs, asset management, forecasting of demand and prices, physical inventory, visibility of inventory, available space for inventory, quality management, returns, and defective goods. One of the supply chain management techniques is inventory management, which arranges the availability of commodities to clients from sales items through consumables and replacement parts(Tungo, 2014).A system's (or an operation's) ability to conduct lengthy runs of operation for higher efficiency and ensure that high inventories are ready for sale, purchase long run orders for better efficiency, and balance working capital and cash flow all depend on this balancing act. The EOQ method, stock levels, ABC analysis, Strategic Supplier Partnership, EDI, JIT, EPOS, bar coding, Lean inventory system, MRP, ERP, and VMI are just a few of the methodologies used in inventory management processes. Any firm can manage inventory using any of these techniques.

Inventory management is an important component in any organization.Because it works to reduce costs, while increasing, the firm's returns and profits. The concept also works to ensure that customer demands are met and fully satisfied because it operates in a way that maintains the right quantities and quality of stocks, allowing for continuous processing. Inventory management also ensures that inventories are in the right place and at the right time, resulting in increased efficiency in the processing and operating sections of businesses(Chan et al., 2017). Simply put, inventory management is the process of putting control measures in place during the ordering, storage, and utilization of resources and components within an organization and its operational processes. It also includes the supervision and control of quantities in the finished products at the production line in an organization. The management practices implemented in an organization are designed to ensure that there is no shortage of supply production units or oversupply, which leads to increased storage costs and possible component misuse.

2.2.2. Inventory Management Practices

According to Ogbadu, (2009), inventory management must be reasonable and wise in order to reduce depreciation, pilferage, and wastages while ensuring the availability of supplies as and when needed. This was further demonstrated by the researcher Lwiki, (2013) who stated that for the maximization of profits and the survival of a business, which are the fundamental objectives for every firm, systematic

and, in this case, specific performance indicators have been proven to depend on the level of inventory management practices.

The independent variables are the variables which have their impact or influence on the dependent variable. They help to ascertain the amount of variation that happens in the dependent variable (Kothari, 1992). The value of the dependent variable depends on the independent variables. The independent variables will include: effective inventory planning, inventory controlling, inventory recording and strategic supplier partnership. The dependent variable is the operational performance of ethio telecom. The relationship between independent variables and the dependent variable is of profound importance as it will clearly stipulate the effect of inventory management on the operational performance of Ethio telecom.

2.2.2.1. Effective Inventory Planning

This is how a company determines how many units of stock it needs in a given period to maintain smooth commercial operations. Planners will be able to set procurement/purchase dates and amounts that are consistent with the plan, avoiding disruptions due to inventory shortages, if they have a sound stock plan in place ahead of time (Dilworth and Chen, 1992).

Inventory planning is at the heart and soul of the supply chain management system; it is the strategic component of SCM, and SCM, like any other component of management, is dependent on effective inventory planning. We have limited resources and unlimited wants and desires, which is a common economic fact, but we must find a balance or optimal combination with the limited resources. When the same process is applied at the business level, it is referred to as strategic planning. Businesses require strategic planning in order to achieve this optimal balance or combination of resources. They must keep track of all resources, both tangible and intangible, that contribute to meeting the needs and demands of a customer, and supply chain management is an important piece of the puzzle. As a result, developing criteria and creating benchmarks against which performance will be measured is an important part of supply chain management planning. Supply chains must also measure and monitor input and output processes using various metrics and ratios to ensure that all resources are managed in an optimal way that gives the company a competitive advantage, improves efficiency, lowers costs, and allows for the delivery of high quality and value to end users (Ahmad, 2014).

Inventory planning entails the systematic processing, analysis, and feedback of data to assess the correctness and timeliness of inventory planning decisions based on critical facts such as demand history, costing history, and stock level history. The essential elements of effective data management contain reliable outputs that provide real-time display of system data. This will ensure that everything is done on schedule; accurate inventory estimate and management decision (Kofi & David, 2020). This information must be benched in order to be completed, designated, consistently captured, and accurately measured. The best indicator of successful data management is how closely system data corresponds to physical inventory (Razi & Tam, 2003). When physical inventory amounts do not match the on-hand quantities displayed by the information system, according to Kofi & David (2020), inventory turnover rate is jeopardized. This is because the information system must be able to display precise numbers for each item, as inaccuracies might result in incorrect sales promises to consumers, things being unsold while being in the system or incorrect procurement decisions based on inaccurate physical stock data.

2.2.2.2. Inventory Control

Inventory control refers to the rules and procedures that are used to methodically determine and govern which items are kept in stock and in what amounts (Rushton & Baker, 2011). The amount of the necessity, the period when additional supplies should be ordered, and the quantity that should be ordered are all considerations that must be made for each item stocked. Inventory control refers to the monitoring of things' storage, supply, and accessibility in order to maintain a sufficient supply while avoiding unnecessary oversupply (Miller, 2010).

Inventory control, according to Lukumon & Abraham (2018), is the problem of validating the quantity, value, and balance of the complete spectrum of materials held in Stock, in order to provide the correct quantities of Materials in the Store at any one time. It aids the storekeeper or inventory controller in determining how much was ordered (asked), how many have been used, what is left, and when to place the next purchase so that the businesses do not run out of materials at any point in time.

Inventory control, according to Miller (2010), is the activity that arranges the availability of items to customers. To suit marketing needs, it coordinates the purchasing, manufacturing, and distribution processes. Similarly, Lukumon & Abraham, (2018) defines inventory control as "the process of making materials of the correct quantity and quality available when and where they are needed, with due

attention for storage and cost efficiency". They also believe that inventory control is the systematic method of identifying, storing, and recording products in order to provide the necessary level of service to the operation shops at the lowest possible cost.

Inventory control, according to Orga (2006), is the process of ensuring that the proper quality of relevant stock is available at the right time and in the right location. Inventory control, according to Nweze (2004), is the process of ensuring that the actual flow of inventory in an organization follows the plan. As a result of the sustainability, inventory management can be defined as the process of ensuring that balanced pieces of stock are maintained in an organization at the proper quantity, quality, location, and time in order to assure organizational business continuity.

The objectives of inventory control, according to Martand (2009), are to: (i) reduce the costs of purchasing, stocking, and issuing supplies; (ii) reduce the frequency of ordering stock items; (iii) reduce pilferage, waste, and overstocking; (iv) minimize the investment and fluctuations in inventories while providing prompt order filling services for customers; and (v) integrate and deploy within a company and (viii) to keep a reserve stock of materials in case of delays in delivery.

Procurement costs, inventory carrying costs, cost of spoiling and obsolescence, cost of running out of stock, and set-up cost are all aspects to consider in inventory control, according to Arora (2000). A good inventory control system minimizes the possibility of production delays caused by a lack of materials, allows a company to exercise economics in purchasing, is essential for an efficient accounting system, is deterrent to people who might steal materials from the factory, is desirable to expedite the production of financial statements; allows for possible increases in output; ensures quality discount, creates buffer between input and output; ensures material scarcity in the market and prevents inventory build-up (Carter, 2002).

High rate of order cancellations, excessive machine downtime due to material shortages, large-scale inventories written down due to price declines, distress sales, widely varying rate of inventory losses, large writing down at the time of physical inventory taking, continuous growing inventory qualities; liabilities to meet delivery schedules and even production rate are all symptoms of poor inventory control (Menon, 2006).

2.2.2.3. Inventory Recording

Effective store management requires accurate and up-to-date store records. The basic procedures include rapidly counting and recording after receipt or manufacturing, and whenever a store transaction occurs, the issuing of stores should be appropriately authorized and disclose details such as the code number, transaction quantity, and voucher reference (Mohamud, 2016). Organizations undertake it in order to decrease stock management errors and maintain accurate and trustworthy stock records. Spot/surprise checks, stock taking are all part of it (Brooks, 2007). Receipts are usually examined when they are brought into the store (or either by weighing, counting or measuring). If done correctly, this establishes a solid basis for all following operations by assuring that the quantities are correct from the start. The storehouse personnel should check the quantities and descriptions of all issues made before they are handed out on a regular basis. It is also usual practice to expect the recipient to inspect and sign for the quantity received. This gives a reasonable guarantee that the quantities collected from the stores are accurate. Spot-checking is the practice of randomly inspecting some items at irregular and unspecified intervals. Store record could be more effective when it is supported by information system.

According to Carter & Price (2010), information and communication technology is a driving factor for any company. An Inventory manager needs information communication technologies to succeed in his day-to-day work. Computers are the most important ICT tools for stock control because they ensure that user requirements are met by computing the optimal number of stock to dispatch and stock to hold. This is accomplished by using a computer to compare inventory variables (stock levels, demand and delivery dates). The Electronic Data Interchange (EDI) is one of the solutions that allow companies to communicate directly without the need for human interaction.

By guaranteeing that the supplier's and customer's computers cross-examine identical information, production plans, and stock levels, all of the firm's movements are correctly coordinated. The firm achieves reduced lead times, paperwork, employee costs, and improved information accuracy as a result of quick and efficient communication. Electronic Point of Sale (EPOS) is another technology used in inventory management. Its main goal is to acquire information about goods sold through scanning. EPOS systems also perform a variety of tasks, including sending intra- and inter-store messages, verifying checks, charging transactions, and providing real-time sales reports. This provides information

to purchasers, reduces the danger of obsolescence, theft, and stock deterioration, and not only helps to improve customer service and hence the financial performance of a company (Lysons , 2012) .

2.2.2.4. Strategic Supplier Partnerships

Lysons & Gillingham (2003) described strategic partnering as a long-term relationship between suppliers and customers based on clear, mutually agreed-upon objectives with the goal of venturing and achieving global capability for a company. Its primary goal is for consumers and suppliers to have a positive working relationship. Strategic supplier partnering is a concept that emerged in the 1980s as a result of the just-in-time (JIT) inventory management system in manufacturing. According to a study by Bicheno (2004), waste reduction, lead time condensation, product enhancement, and product simplicity are all joint goals and objectives of JIT and strategic supplier partnerships.

Brownell (2005) found that orthodox communication is the most important aspect for a successful strategic supplier alliance. Work in a company becomes more efficient and productive as a result of excellent communication between customers and suppliers. As new technology emerges, as well as the usage of various forms of electronic communication, key supplier representatives remain critical. The company should also involve suppliers early in the design phase to reduce the number of defective and obsolete items received.

Vendor Managed Inventory is a novel element in supplier partnerships (VMI). VMI enables the client to obtain inventory quickly because the supplier keeps the inventory on site or nearby. In a VMI agreement, the supplier is responsible for restocking inventories. This involves inventory counting, shipping logistics management, and ordering. This transfer of costs from the client to the supplier is beneficial to the customer since it allows them to lower the overall cost of the product while increasing margins. At the end of the day, the supplier has met a significant amount of the purchaser's entire requirements (Loughrim, 2008)

Lambert & Terrance (2001) described supplier relationship management as the process by which a company's suppliers interact with the company. Every business must establish good relationships with both consumers and suppliers. A corporation will form intimate ties with a small portion of its suppliers, much like it does with customers, and manage arm-length relationships with the others. Product and Service Agreements (PSA) are another supplier management function. Each important supplier is the

primary decider of the conditions of their partnership with PSA (supplier and firm). For fewer major suppliers, PSA becomes non-negotiable. As a result, supplier relationship management is in charge of managing and defining PSAs. Long-term connections are formed when a compact central group of suppliers forms one. For fewer major suppliers, PSA becomes non-negotiable. As a result, supplier relationship management is in charge of managing and defining PSAs. A give-and-take situation emerges when a compact central group of suppliers builds long-term partnerships that benefit both sides. Enterprises, according to Kandampully (2003) no longer compete as independent entities, but rather as a network that must be well-planned in order for the firms to obtain a competitive edge.

2.3. Theories of Inventory Management

i. Resource – Based View Theory

Penrose (1959) used resource-based view (RBV) theory to describe a firm as an administrative organization and a collection of productive resources, both physical/material and human, that offers a firm with a variety of services. As a result, a close association between the information held by human resources and the services offered by those same human resources demonstrates that enterprises are actual knowledge reservoirs. The RBV of the firm, according to Wernerfelt, (1984) and Barney & Jay, (2001), focuses on the inside of the firm, its resources and capabilities, in order to explain the profit and worth of the firm. As a result, Hoopes et al. (2003) used the theory to explain disparities in business performance across industries.

ii. Resource Dependence Theory

According to Harrison et al., (1997)'s resource dependence theory (RDT), corporations establish official and orderly ties with other enterprises by seeking out ways to reduce uncertainty and allow for dependence on other firms. As a result, businesses become interdependent and pool their resources to create a one-of-a-kind resource bundle that is difficult to duplicate. On the same way, research by Gitau (2016) has backed up the RDT hypothesis by demonstrating that a firm's bond with other firms allows it to generate superior products, giving it a competitive edge and enhanced financial and operational success. As a result, the theory demonstrates that enterprises with strategic supplier partnerships can construct resource bundles.

iii. Inventory Control Theory

The basic tenet of this theory, which was developed by Arrow et al. (1958), is that organizations have a lot of assets, and managing them becomes quite a task. There is a need for strategy in the case of large enterprises with a vast branch network and multiple processing plants and units that require a diverse range of assets and inventories. The technique will assist in cost reduction and optimization. Through cost conservation measures and customer service needs, small business owners or managers can simply borrow some ideas on inventory controls, enhance production, and reduce storage costs (Taskin & Loderee, 2010). Inventory control theory assumes that demand is known, continuous, and constant; costs are known and constant; shortages are not permitted; the lead time between placing and receiving orders is zero, and replenishment time can be ignored (Chen & Simchi-Levi, 2004).

Because satisfied consumers become loyal to the brand and the business, all businesses and their leadership strive to reduce operating costs and maximize returns while meeting and exceeding customer needs. According to Zappone (2014) having too many inventory increases operational costs like as physical space consumption, the risk of damage, loss, theft, and spoiling, and on top of that, holding down money in terms of stocks can lead to cash flow crises unless management brings it under control. Inefficient and poor leadership, faulty estimation, haphazard preparation, and insufficient process and operational attention are frequently compensated for by excess inventory. Insufficient supply not only delays operations, but it also increases the likelihood of poor customer service. When a necessary service is not available right away, loyal clients may become dissatisfied and abandon your company. Companies having a high inventory ratio are more likely to perform poorly financially (Ortega & Lin, 2004)

Critics show that inventory control is all about ensuring that communication routes are efficient to allow free flow of information between different organizational divisions and departments. However, pronounced coordination and communication activities are impossible to achieve (Chen & Simchi-Levi, 2004). Another critic is that the costs of carrying inventory are considerable and, in most cases, understated because direct and indirect costs are not included. Some costs, such as storage and insurance, are also fairly straightforward to assess, while others, such as decreased flexibility, heightened variables, and the complexities of an enterprise, are not. The theory, according to Zomerdijk & De-Vries (2004) assumes that coordination is the only important factor in dealing with inventory

management's various difficulties. Stock returns are exceptionally low for companies with excessive stockpiles. Firms with extremely low inventories have normal stock returns, while firms with somewhat lower than average inventories have slightly lower than average stock returns and can be improved overtime. Additionally, there is a strong negative association between profitability index and cash conversion cycle, whereas lowering inventories has a big and favorable impact on financial and operational performance (Jackson et al., 2020)

The theory reveals the implications of inventory control inside an organization and links it to more enhanced and efficient processing units, which has an impact on financial and operational performance. Different inventory management strategies prescribe the appropriate quantities of inventory that a company should store in order to avoid overstocking or under stocking and improve operational effectiveness. As a result, the theory revealed that inventory control procedures can affect companies' operational performance. That is the reason why one of the objectives of this study is to investigate the effect of inventory control on the operational performance of ethio telecom.

iv. Lean Theory

The phrase "lean theory," coined by Krafcik (1988), was further defined by Womack & Jones (1996). The purpose of lean theory is to lower inventory system expenses. It is argued that utilizing this theory, decisions on production, storage, and other supply chain issues can be made faster (Tempelmeier, 2011). The concept is based on the economic order quantity model, which seeks to increase the quantity of each ordered item as much as possible. The choice of lean theory for this study came from the necessity to investigate how inventory management affects operational performance, thereby arguing for the adoption of alternative methods and techniques for inventory management in businesses. As a result, the theory emphasizes the potential for a range of operating systems to be utilized to monitor stock levels, as well as product variances that may necessitate different treatment. The lean theory has evolved from Just-In-Time notion. Falasca, Kros, & Nadler (2016) defined Just-In-Time as a pull-based system that coordinates production and business activities throughout the supply chain such that particular inventories are only made available when needed at various processing locations.

Inman & Green (2018) investigated the impact of combining lean and green techniques on operational and environmental performance, claiming that the strategy might eliminate buffer stock and waste in the

operational process. According to Eroglu & Hofer (2011), leanness benefits businesses since it helps them to reduce operating costs, waste, and losses. They believed that inventory leanness is the best control strategy since it leads to the most efficient use of resources. The theory outlines how employing the idea can help producers enhance ordering flexibility, reduce on-site inventory, and remove inventory carrying expenses. At the aggregate level, the empirical efficacy of the lean explanation is found in the time and amount of adoption. In theory, however, inventory inhibits a company's ability to adapt to fluctuations in demand. According to academic research, firms that optimize inventory using lean techniques and systems achieve higher levels of resource utilization and customer satisfaction, which leads to enhanced organizational growth, profitability, and market share (Po-Lynn, 2019).

One critique of lean theory is that it reduces the margin of error by eliminating excess inventory and the buffer period that is typically used in operations. When problems develop, they have a significantly bigger impact on output than they otherwise would. Another critique is that lean does not self-check; while lean supports the use of facts and data to aid decision making. There is a lack of understanding about lean's success, particularly when it comes to partner selection. Finally, lean devalues abilities; when dealing with inefficient processes, unique skills like altering manufacturing procedures or cajoling machines come in handy. Individuals who broke down production barriers are becoming less and less needed as procedures improve. People are forced to reveal all of their secrets by lean (Tempelmeier, 2011)

Inventory management is a vital component of any supply chain, according to lean theory, regardless of whether it is a product or a service provider company. Inventory management is crucial for harmonizing demand and supply across the complete supply chain, providing for flexibility in coping with the external and internal incidents that characterize today's unpredictable, worldwide corporate environment (Dominguez-Perez et al., 2018). Ineffective inventory management is a major problem for developing-country businesses, with the majority of businesses assessed failing to use even the most basic inventory control concepts and practices. The lean principle is essential for effective inventory management, which results in increased profitability, adaptability, flexibility, economic viability, and asset management. It's also useful for commercial government organizations as a performance measurement tool. The idea is effective in determining how much or how little inventory is required for an organization's successful and efficient operations and high profits. This theory established a relationship between Just-In-Time and the firm's operational performance.

Order lead times cannot be calculated with any degree of accuracy due to the large reliance on imported raw materials and parts, as well as the endemic bureaucratic delays and accompanying communication problems the Lean theory is critical to the efficient management of Ethio telecom inventories that will result in enhanced profitability, productivity, effectiveness and customer satisfaction.

2.4. Empirical Review

Nowadays, organizations are more concerned about inventory that provides a sustained competitive advantage in the business environment. Changes in business environment have led to increased importance of managing inventory. These changes are; increase in globalization, changing demographic patterns, diversified cultures, changes in the economic variables, changes in sociology, and the flux of technology in the global scene. The success of many organizations today is directly related to the effective management of inventory (Olaniyan et al., 2020).

Shin et al. (2015) looked at the impact of inventory management efficiency on profitability in the manufacturing business in the United States. Inventory management is necessary because the company wants to ensure that its assets and stocks are well-managed, and demand forecasting is improved to avoid accidental procurement. Inventory can be used as both stock and assets, therefore improving demand forecasting allow an organization to save operating expenses while also increasing customer satisfaction. When this is accomplished, a future organization plan can incorporate numerous elements such as demand and supply, cost, and human requirements in order to reach its goal. The study looks at the profitability of US manufacturing companies and the impact of inventory management efficiency. The data show that a low inventory to sales ratio is associated with a high profit margin for the company. In terms of earnings, smaller manufacturing firms benefit more from expanding inventory efficiency techniques than larger and medium-sized manufacturing firms.

The study byOgbo & Ukpere (2014) investigated on the impact of inventory control management on the 7 up bottling company Nile, Mile, Enugu, Nigeria. A total of eighty-three respondent constitute the sample for the study. Four hypotheses were generated and tested at 10% (that is 0.10) significant level using descriptive statistics and non-parametric test. The result showed that inventory control management flexibility is a significant method to achieving organizational success. Inventory control management has been demonstrated to assist firms by facilitating material storage and retrieval,

improving sales effectiveness, and lowering operating costs. The study also discovered a link between operational feasibility, the usability of inventory control management in the organization's customer-related difficulties, and cost-effective techniques used to improve the organization's return on investment. According to the researchers, effective inventory control management is acknowledged as one of the skills that each organization's management should develop.

At St. Martin's Hospital in Agroyesum, Amansie-West, Osei-Mensah, (2016) investigated the impact of inventory management practices on service delivery. He discovered that inventory management practices included the organization's activities and functions for handling stocks of finished products, semi-finished products, and raw materials. The proper execution of these processes allows the organization to reduce waste and expenses while increasing revenue. Selecting and installing inventory tracking software, revising the design to enable optimum storage, creating rack location codes and assigning distinctive identification numbers, and locking warehouse and storage zones to restrict unlawful inventory removal or motion are all ways to improve inventory record precision. The study used a questionnaire to collect data from 60 employees and three patients. Quantitative data was analyzed using SPSS, and qualitative data was analyzed as well, revealing that the hospitals leveraged strategic supplier partnerships and information technology as inventory management practices, resulting in enhanced service delivery. The analysis concluded that the hospital's inventory management was bad due to a lack of well-trained staff in handling inventories and improper inventory storage, which resulted in losses.

Gitau (2016) studied the impact of inventory management practices on 48 warehousing firms in Mombasa County using a cross-sectional descriptive census survey, and he used a correlation survey to demonstrate the relationship between inventory management variables and operational performance. Data was collected using a questionnaire deduced by the "drop and pick" method, as well as e-mail for respondents who could not be reached physically. The Cronbach's alpha test was used to assess the questionnaires' reliability. Microsoft Excel and SPSS software were used to perform the data analysis on the computer. To determine the correlation between inventory management practices and operational performance of Warehousing firms in Mombasa Country, the R², Durbin-Watson analysis, ANOVA analysis, multi-collinearity model, and multivariate regression analysis were used. The study discovered a significant relationship between independent variables (inventory management systems, strategic supplier partnerships, and information communication technology) and the dependent variable

operational performance. Inventory management systems were determined to be the most effective of the three (3) inventory management techniques, with a significance of 0.04. This is because inventory management systems not only reduce inventory waste but also ensure that available warehouse space is used more efficiently.

Kamau & Kagiri (2015) investigated the influence of inventory management practices on organizational competitiveness of Safaricom Kenya Limited. In order to survive and be effective in satisfying market demand, a company must be aware of its supply chain management in order to improve performance and ensure long-term survival. The goal of inventory management is to guarantee that resources are available when and where they are needed. To ensure timely delivery and compliance with quality standards, effective inventory management is necessary. Organizations must embrace shifting market competitive trends in order to survive. The researchers used both descriptive and inferential statistics to analyze the data. Inventory shrinkage, inventory investment, and inventory turnover all have an impact on Safaricom Ltd's competitiveness, according to the report. According to the findings, inventory management methods are critical to an organization's competitiveness. As a result, inventory management strategies have an impact on profit maximization, customer satisfaction, market share growth, and product quality. Safaricom's competitiveness is impacted by inventory loss, inventory investment, and inventory turnover. Accurate forecasting (supply and demand) should be in place to avoid carrying excess inventory that could be a danger to the company. Safaricom Ltd's management needs to revamp its inventory management system in order to improve efficiency. Safaricom could explore using a vendor managed inventory system to prevent stock-out situations, improve customer service levels, and cut costs by increasing inventory turnovers, lowering safety stock levels, and increasing supply chain transparency.

In Ethiopia so many researchers had strived to conduct the effect of inventory management practices on operational performance. Wako (2018) assessed the inventory management practice in Hawassa textile factory. The findings revealed that proper and effective inventory management techniques were able to boost the company's competitive edge and improve its competitiveness. Atnafu & Balda, (2018) looked in to inventory management practice in micro and small enterprises manufacturing sub sectors in Arsi zone. According to the study higher levels of inventory management practice can contribute to a competitive advantage and increased organizational performance. Furthermore, competitive advantage has a direct and positive impact on organizational performance. Ayele & Ram (2021) investigated the

effect of information sharing and inventory management in the supply chain practices on firms' performance, taking empirical evidence from some selected companies of Ethiopia. The findings reveal that information sharing and inventory management techniques have a direct and significant impact on the company's success. Similarly, a higher information share leads to better inventory management practices, which leads to improved company performance. The study concludes that in supply chain procedures, information exchange has both direct and indirect effects on a firm's performance, whereas inventory management practices have a direct effect.

Guliti (2018) assessed inventory management practices at ethio telecom Dessie branch. The researcher's intention was to light certain issues with inventory management procedures, and he became interested in concepts, methodologies, and philosophies targeted at improving inventory cost control. The study concluded that the branch is not at its inventory management practices and recommends since the goal of every firm is to keep as little inventory as feasible while still operating. So, Ethio Telecom's Dessie branch must preserve as little inventory as possible while still operating their business, as well as decide how much goods it has in stock, how long it will serve him, and so on. As a result, the responsible body should work hard to keep the organization's whole flow of resources in a safe, secure, and suitable location. Firdu & Kassu (2020) investigated factors that affect the effectiveness of inventory management of ethio telecom using quantitative approach with explanatory research design. The data from the survey was analyzed using SPSS 20 software and statistical techniques such as correlation and regression analysis, as well as hypothesis testing. The study's findings revealed that information technology and internal inventory control have a significant positive relationship with inventory management effectiveness, whereas procurement procedure and inventory carrying costs have a significant negative relationship. The researcher suggested that the organization integrate ERP Supply chain and financial modules completely. Item standardization should be implemented throughout the organization to reduce obsolescence and overstocking. Modernizing the procurement process in order to achieve real-time procurement and thus increase transparency in the procurement of goods. Inventory carrying costs should be kept as low as possible because the goal of every business is to keep as little inventory as possible while still operating. In this manner, the concerned authority should work diligently to maintain the organization's entire flow of resources and keep them in a safe, secure, and proper location.

2.5. Research Gap

Most literatures reviewed focused on the variables only partly concurred from this paper's goals. This study will focus on the basic inventory management elements; effective inventory planning, inventory controlling, inventory recording and strategic supplier partnership. The other difference is either there is a time gap or study area distinction from previous literatures.

2.6. Conceptual Framework

Conceptual framework helps us to postulate or hypothesize and test certain relationships and thus improve our understanding of the dynamics of situation. The conceptual framework for this study is presented below

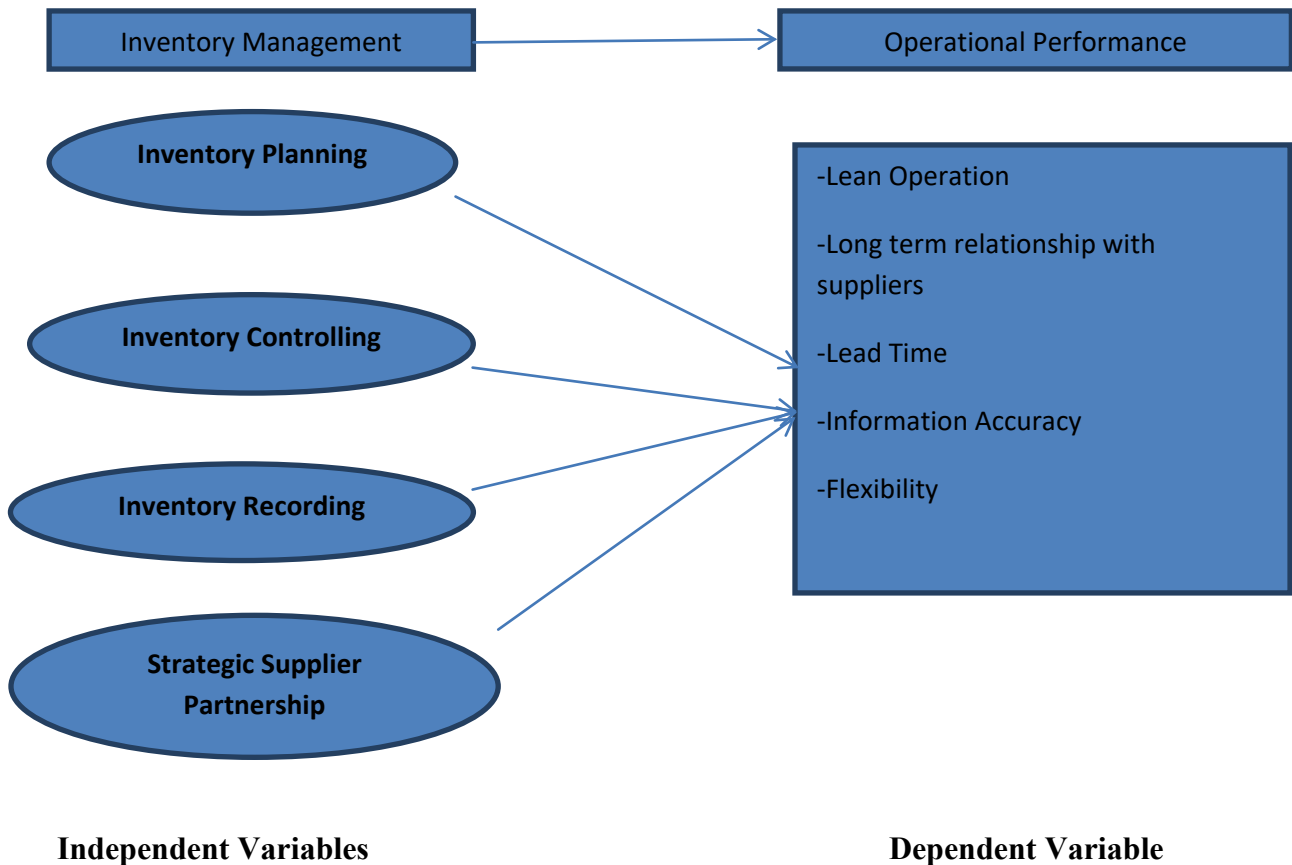


Figure 2. 1 Conceptual framework of the study

Source; Modified from Tesfaye, (2019)

Chapter Three

3. Research Methodology

3.1. Introduction

The methodology part deals with the methods and strategies to be used in this study. This section encompasses the research approach, research design, data type and source, target population, sample size, method of data collection, method of data analysis, validity and reliability.

3.2. The Research Approach

Depending on the nature of the study and the questionnaires posed, deductive research approach was used to analyze the data. This approach is relevant when the researcher develops certain types of hypotheses and designs a research strategy to verify the hypotheses. Quantitative research approach has been used, since this research approach in its nature is used for statistical procedures to analyze and develop inferences from data that's statistical. Models such as means, standard deviations, correlations and regressions analysis have been used.

3.3. Research Design

From different types of research designs, for this particular study, descriptive study and explanatory studies have been used. Descriptive design has been used to elaborate and show the existing phenomena, while explanatory research strategy has been used to show the effect of independent variables on the dependent variable.

3.4. Data type and source

For this study, both primary and secondary data types have been used. Primary data are those which are collected afresh and for the first time, it is thought as original in character, while secondary data are those data already collected by someone else and passes through the analysis processes.

The source of primary data was employees of ethio-telecom. The data was collected using open ended and close ended questionnaire and personal observations. On the other hand, the sources of secondary

data were library books, Journals, text books, E-books, websites, working documents and annual performance reports.

3.5. Target Population

There are two types of sampling design, census and sample survey. A complete list of all items in the populations is termed as census. In such an inquiry when all members are covered, there is no chance will be left and highest accuracy will be obtained. But such type of inquiry requires the highest resources and effort, and sometimes may be impossible to cover. Whereas, sample is a representative of the intended population, that gives an accurate picture of the population as a whole. So, sample should be selected very cautiously.

For this study population means the entire number of employees in ethio telecom supply chain division. The study population includes employees of both gender, various age groups and educational qualifications, and employees at various levels of management. The data found from ethio telecom human resources division indicated that there are 687 employees in the supply chain management division.

3.6. Sample size

Ngechu (2004) emphasizes the significance of selecting a representative sample by creating a sampling frame. A sample was formed by selecting the required number of subjects, respondents, elements, or firms from the population frame. A complete list of all the cases in the population from which a sample is drawn is the sampling frame for any probability sample (Saunders et al., 2007). A sample is a smaller and more accessible subset of the population that adequately represents the overall group, allowing one to provide an accurate (within acceptable limits) picture of the population as a whole in relation to the study's specific aspects of interest.

There are several sample size determination techniques; however, for this study, the Yamane (1973) formula has been used. This formula is concerned with using a normal approximation with a confidence level of 95% and a limit of tolerance (error level) of 5%.

$$n = N / (1 + N(e)^2)$$

[n] Determines the sample size.

Where n denotes the sample size

N = population

e = level of precision

$$n = \frac{687}{1 + 687 (0.05)^2}$$

$$= 255$$

A sample size of two hundred fifty five (255) out of six hundred eighty seven (687) was used. All members of the population have been given equal chances of being selected.

3.7. Sampling Technique

Sampling is a process for gathering people, places, or things for research, as well as a way for selecting a group of people or items from a population with characteristics that are representative of the entire group. (Yin, 2017). The supply chain division was chosen as the sample frame for this study using the purposive sampling technique to represent the company's overall departments. The survey questionnaires have been administered using simple random sampling procedures based on proportional probability sampling techniques to a sample of respondents picked from the division.

3.8. Method of Data Collection

A structured open ended and close-ended questionnaire instrument with a five point Likert scale was used to gather the data. The close-ended questionnaire was used since they are less costly and less time consuming than other measuring instruments. The constructs in the questionnaire is developed from the literature review and personal experience.

The questionnaire had three parts. The first section was on demographics information of the respondents. The second section constituted questionnaire on dependent variable and each of the independent variables and the third part consisted open ended questions.

Self-administered questions were used to obtain background information of respondents relevant to the study. Participants were asked to provide information with regard to their sex, age, educational level, and work experience.

The second part of the questionnaire is consisted of questions on the dependent variable operational performance and on each of the independent variables of effective inventory planning, inventory controlling, inventory recording and strategic supplier partnership. The third part of the questionnaire was open ended questions forwarded for the employees so that they can share from their practical experiences. The responses to each of the items were rated using a 5-point Likert scale including strongly agree (5), agree (4), neutral (3), disagree (2), and strongly disagree (1).

3.9. Methods of Data Analysis

The data analysis activity consists of formulating data analysis goals, stating assumptions, specifying hypotheses, selecting statistical techniques, determining significance levels and decision rules, calculating test statistics, conducting further analyses and drawing inferences.

According to Mohammed et al.(2014) these tasks must be performed regardless of the data analysis being conducted for a data analysis to provide useful decision information. Furthermore, these tasks are not performed just once; they may be performed several times until the accumulated information warrants one or more major data analysis conclusions.

According to Saunders et al. (2003) qualitative analysis should start by classifying non-standardized qualitative data that have been collected into certain categories as a prerequisite to meaningfully analyze it.

The quantitative data was analyzed using descriptive and inferential statistics. The Statistical Package for Social Sciences (SPSS) has been used to analyze the results in the form of mean, percentage and frequencies.

Frequency tables has been used to summarize the respondents profile in the form of frequency and percentages whereas the descriptive statistics such as mean and standard deviations of employees'

answers to inventory management and organizational performance scales have been calculated in order to determine employees' perceptions.

Inferential statistics are the statistical procedures that are used to reach conclusions about associations between variables. They differ from descriptive statistics in that they are explicitly designed to test hypotheses. Most inferential statistical procedures in social science research are derived from a general family of statistical models called the general linear model (GLM)(Mohammed et al. 2014).

The multiple regression analysis was deployed to analyze the relationship between the dependent variable i.e. operational performance and the independent variables; effective inventory planning, inventory control; inventory recording and strategic supplier partnership. Therefore, the general model is $Y_i = \beta_0 + \beta_1 x_i + \varepsilon$

When Y_i denotes the dependent variable operational performance, β_0 is the slope, β_1 is the intercept term which measures the change in the mean value of Y per unit change in their respective independent variables, and ε is the *error term*, x_i represents the different independent variables, effective inventory planning, inventory control; inventory recording and strategic supplier partnership.

The above model can be converted to equation in a way that suit the research question of this study.

$$OP = \beta_0 + \beta_1 IP + \beta_2 IC + \beta_3 IR + \beta_4 SSP + \varepsilon$$

OP= Operational performance

β_0 = constant term or the intercept

β_1 = the slope which shows the change in the dependent variable as a result of a unit change in the independent variables

IP= Effective Inventory planning

IC= Inventory control

IR= Inventory recording

SSP= Strategic supplier partnership

ε = error term

3.10. Validity and Reliability

Validity is the most critical criterion and indicates the degree to which an instrument measures what it is expected to measure. Validity can also be thought as utility. In other words, validity is the extent to which differences found with a measuring instrument reflect true differences among those being tested (Mohammed et. al., 2014).

The validity for this study has been done by reviewing different literatures and adapting others work. Cronbach's alpha was used to test for internal reliability of each variable used in the study. Cronbach's alpha values range from 0 to 1

Table3. 1 Rule of Thumb of Cronbach's Alpha

Cronbach's Alpha Internal Consistency	Cronbach's Alpha Internal Consistency
$\alpha \geq 0.9$ Excellent	$\alpha \geq 0.9$ Excellent
$0.9 > \alpha \geq 0.8$ Good	$0.9 > \alpha \geq 0.8$ Good
$0.8 > \alpha \geq 0.7$ Acceptable	$0.8 > \alpha \geq 0.7$ Acceptable
$0.7 > \alpha \geq 0.6$ Questionable	$0.7 > \alpha \geq 0.6$ Questionable
$0.6 > \alpha \geq 0.5$ Poor	$0.6 > \alpha \geq 0.5$ Poor
$0.5 > \alpha$ Unacceptable	$0.5 > \alpha$ Unacceptable

Source: Cortina (1993).

Chapter Four

4. Data Presentation, Data Analysis and Interpretation

4.1. Introduction

The study's main objective is to examine the effect of inventory management practices on operational performance. Therefore, the final results and the process through which the results were produced are discussed in this chapter. Respondents' background information is also presented. Finally, statistical methods of analysis are discussed, including descriptive, correlation, and multiple regression analyses using the Statistical Package for Social Science (SPSS version 26.0).

The attempt was made to conduct detailed and technical investigations related to the study matter in order to achieve the study's objective and address the key research questions. In doing so, the researcher gathered relevant and trustworthy information from primary sources. As a result, the collected data has been completed and analyzed.

4.2. Response Rate

The target population was 255 employees working in the supply chain division of ethio telecom. The total responses obtained from the respondents were 207. The analysis of this research is based on the questionnaires collected.

Table 4. 1 Response Rate

Parameter	Frequency	Percent
Response	207	81
Non Response	46	19
Total	255	100

Source; Own computation, 2022

4.3. Reliability Analysis

To assess reliability, the Cronbach's alpha test was used. The purpose of this test was to determine the internal consistency of the independent variables. Cronbach (1951) defines a reliability coefficient of 0.70 as "acceptable." The Cronbach's alpha value is presented as the table below

Table 4. 2 Reliability Test

Variables	No. Items	Cronbach's Alpha Result
Operational Performance	5	.711
Effective Inventory Planning	6	.604
Inventory controlling	4	.663
Inventory Recording	5	.731
Strategic Supplier Partnership	6	.720

Source; Own computation, 2022

All variables scored are under the acceptable standard of alpha scores except effective inventory planning which is under questionable range, as shown in the table above. The dependent variable 'operational performance' has 0.711 alpha score. Inventory recording has the highest reliability among the independent variables, with a score of 0.731, followed by strategic supplier partnership with alpha value 0.720. Inventory control is next, with a value of 0.663 that is within a reasonable reliability range, since the numbers of items are greater than 3. Inventory control has the lowest score of all the factors, but it is still within the acceptable range with a score of 0.604 since the number items are more than 3. Because all alpha values are greater than .6, Cronbach concludes that the items under consideration have internal consistency, which can be said satisfactory.

4.4. Descriptive Statistics

In this section, responses given for the questions related to demographic characteristics and main questionnaire is elaborated.

4.4.1. Descriptive Statistics for Demographic characteristics of respondents

The demographic characteristics of respondents who completed the questionnaire are described in the table below. This session includes gender, age, education level, and experience of respondents in their current position.

Table 4. 3 Demographic Characteristics

Demographic information		Frequency	Percent
Gender	Male	120	58
	Female	87	42
	Total	207	100
Age	18-25	1	0.5
	26-35	14	6.8
	36-45	67	32.3
	Above 45	125	60.4
	Total	207	100
Education Level	Below Diploma	0	0
	Diploma	4	1.9
	First degree	177	85.5
	Second degree	26	12.6
	PhD	0	0
	Total	207	100
Experience	1-3	157	75.8
	4-7	39	19.5
	8-10	7	2.8
	More than 10 years	4	1.9
	Total	207	100

Source; Own computation, 2022

According to the table above, of the total 207 respondents, 120 (58%) are male employees and 87 (42%) are female employees. 125 (60.4 percent) employees are over the age of 45, 67 (32.3 percent) employees are between the ages of 36 and 45, and 14 (6.8 percent) employees are under the age of 36 and over the age of 25. Only one participant is under the age of 25.

The table also shows the respondents' educational level. As stated, there are no respondents with less than a diploma and more than MA/MSc. Only 4 (1.9 percent) of employees hold a diploma; the remaining 177 (85.5 percent) and 26 (12.6 percent) hold a first degree and an MA/MSc, respectively.

More than 75% of respondents have less than 3 years' experience in their current position, i.e. 157 employees have less than 3 years' experience in their current position. 39 respondents (19.5%) have been in their current position for 4 to 7 years. 7 employees (2.8%) have 8 to 10 years of experience. Only four people have worked in the current position for more than ten years.

4.4.2. Descriptive Statistics for Operational Performance and Inventory Management Practices

Descriptive statistics in the form of mean and standard deviation were computed from the data collected via questionnaire from employees of the ethio telecom supply chain management division. As a result, this descriptive analysis is used to examine the data gathered in order to determine the employees' perceptions of inventory management practices and operational performance. The study focused on four inventory management practices. These are; effective inventory planning, inventory controlling, inventory recording, and strategic supplier partnerships. Under each practice, different questions were forwarded to participants that would be responded on a scale of 1-5 with 1 being very small extent and 5 being very large extent. A mean of 1-2.5 indicates that the factor has been adapted to a little extent in the study organization, a mean of 2.5-3.5 indicates an average extent, and a mean in a range of 3.5 and 5 indicates a high extent. A standard deviation of > 1.5 implies a significant variance in the responses while < 1 shows there was no significant variance in responses.

Table 4. 4 Descriptive Statistics (Mean and Standard Deviation) for Operational Performance

Items of Operational Performance	Mean	Std. Dev.
The company is successful in deploying lean operation system and reduced operation costs due to deploying inventory management practices	2.82	.827
The company is successful in maintaining long term relationship with key suppliers as a result of applying inventory management practices effectively	3.62	.802
The company is successful in assuring on-time delivery of ordered materials due to effective Inventory management practices.	2.38	.947
The company is successful in providing appropriate information about inventories for concerned bodies due to inventory management practices	3.01	.884
The company has adopted a way of reacting to the changes in its operations due to inventory management practices	3.28	.761
Cumulative Mean	3.0	0.84

Source; own computation, 2022

The supply chain management staff's average perception of operational performance was 3.0 (SD = 0.84), as indicated in table 4.4. This shows that respondents agreed at average level regarding the company's actual performance meets the established target criterion. The standard deviation is.84, indicating that there are no extremes in the positive and negative score, implying that there was no significant variance in respondents' responses, which is acceptable and operational performance, is at moderate level.

Table 4. 5 Descriptive Statistics (Mean and Standard Deviation) for Effective Inventory Planning

Items of Effective Inventory Planning	Mean	Std. Dev.
There is a joint planning session with concerned bodies (suppliers and users)	3.15	.915
Inventory planning is an integral part of the organization's strategic planning	3.78	.769

The inventory planning is prepared considering the nature, the profit impact and the supply risk of the items	3.61	.816
The company is able to predict the ordering, holding and storage costs of items	3.21	.795
The company is paying unnecessary carrying cost because of poor planning or unplanned purchase	1.79	.602
The company shares actual data with suppliers for replenishment of inventories	2.85	.632
In our organization, inventories are ordered when they are required	3.86	.711
Cumulative Mean	3.17	.75

Source; own computation, 2022

The cumulative mean is 3.17, with a standard deviation of 0.75. This demonstrates that the organization has implemented effective inventory planning to manage stockpiles to an average level. There is no more variance, as shown by the standard deviation between respondents which is at the acceptable level. The above result revealed that inventory planning is slightly poor in the company. In addition to that the result obtained through open ended questions, shown that management commitment lacks and lack of trained and competent professionals are the reasons for inventory planning short-comings.

Table 4. 6Descriptive Statistics (Mean and Standard Deviation) for Inventory Controlling

Inventory Controlling	Mean	Std. Dev.
Inventory control systems have led to reduction of costs incurred by the organization	3.69	.796
Most of the time inventory stock have the capability to meet the demands of orders made throughout all our business lines	3.08	.835
There are minimal cases of stock out, thereby minimum lost sales	3.20	.762

The company has definite inventory control technique	3.33	.757
Our operation is flexible so that we can respond to any changes when they occur.	3.51	.638
Cumulative Mean	3.36	.76

Source; own computation, 2022

The cumulative mean is 3.36, and the mean standard deviation is 0.76, as shown in table 4.6. This result indicates that inventory control is practiced at an average level in Ethio telecom. The mean standard deviation of 0.76 indicates that the individuals' responses are consistent. Overall, the inventory control is practiced in the company moderately.

Table 4. 7 Descriptive Statistics (Mean and Standard Deviation) for Inventory Recording

Inventory Recording	Mean	Std. Dev.
Systems are able to share data seamlessly across departments	4.16	.710
Employees have access to critical updates and real-time information	4.13	.528
The current system delivers accurate reports on the inventory stock and past demands to help you make informed decisions for future purchasing and order	4.04	.524
There are no more unrecorded items in the company's warehouses	3.67	.674
The existing system help us to determine appropriate maximum and minimum inventory levels	4.14	.632
There is accurate and up-to-date stores records	3.67	.674
The current inventory recording system eases inventory count and audit	4.14	.632
Cumulative Mean	4.0	.62

Source; own computation, 2022

The mean and standard deviation of the replies supplied by employees of the ethio telecom supply chain management division to the question on how inventory recording has been implemented in the company are shown in Table 4.7. The result reveals a cumulative mean of 4.0, indicating that the respondents

agreed that ethio telecom is doing a good job with inventory recording. The standard deviation for inventory recording is 0.62, which is minimal, implying that there are no extremes in the positive and negative score, implying that respondents responded consistently and that the fluctuation is acceptable and inventory recording practice is solid.

Table 4. 8 Descriptive Statistics (Mean and Standard Deviation) for Strategic Supplier Partnership

Strategic Supplier Partnership	Mean	Std. Dev.
We anticipate that our partnerships with major suppliers to last longer.	3.53	.688
We collaborate with key suppliers to improve quality of items	3.48	.660
We consider our main suppliers to be an extension of our organization.	3.56	.766
We have developed a high level of trust with our suppliers	3.39	.735
There is mutual information sharing with our key suppliers	3.69	.790
There is good communication with our suppliers	3.67	1.110
Cumulative Mean	3.6	0.79

Source; own computation, 2022

The respondents' average perception of strategic supplier partnership practice in Ethio telecom was 3.6, as shown in table 4.8. This implies that respondents agreed at high extent with the effectiveness of strategic supplier partnership efforts. The mean standard deviation for strategic supplier partnerships was 0.79, indicating that there was no significant difference among the participants' responses. As a result, this fluctuation is acceptable, and the company's strategic supplier partnership process is not bad.

4.5. Inferential Analysis

4.5.1. Pearson Correlation Analysis

At ethio telecom, the study looked into the strength of the link between inventory management practices and operational performance. The outcomes are shown in the table below.

Table 4. 9 Correlation analysis result

		OP	Planning	Contro l	SSPS	Inventory recording
OP	Pearson Correlation	1	.620**	.454**	.564**	.421**
	Sig. (2-tailed)		.000	.000	.000	.000
	N	207	207	207	207	207
Planning	Pearson Correlation	.620**	1	.333**	.564**	.554**
	Sig. (2-tailed)	.000		.000	.000	.000
	N	207	207	207	207	207
Control	Pearson Correlation	.454**	.333**	1	.425**	.591**
	Sig. (2-tailed)	.000	.000		.000	.000
	N	207	207	207	207	207
SSPS	Pearson Correlation	.564**	.564**	.425**	1	.424**
	Sig. (2-tailed)	.000	.000	.000		.000
	N	207	207	207	207	207
Inventory recording	Pearson Correlation	.421**	.554**	.591**	.424**	1
	Sig. (2-tailed)	.000	.000	.000	.000	
	N	207	207	207	207	207
**. Correlation is significant at the 0.01 level (2-tailed).						

Source; own computation, 2022

Table 4.9 shows a 0.62 correlation factor between effective inventory planning and ethio telecom's operational performance. This strong connection is statistically significant because the P-value is 0.00, which is less than 0.05. According to Mohamud (2016), inventory planning is important not only for improving operations and sustaining failing enterprises, but also for improving competitiveness and financial performance.

The study discovered a strong and modest relationship between inventory control and ethio telecom's operational performance, as evidenced by a correlation value of 0.454 and a significance level of 0.00. Jackson et al. (2020) propose a theory that explains the implications of inventory control inside an

organization and links it to more enhanced and efficient processing units, which has an impact on financial and operational performance.

Table 4.9 shows significant positive link between ethio telecom inventory recording and operational performance ($r= 0.421^{**}$; $p\text{-value}=0.00$). Effective store management requires accurate and up-to-date store records. The basic procedures include rapidly counting and recording after receipt or manufacturing, and whenever a store transaction occurs, the issue of stores should be appropriately authorized and disclose details such as the code number, transaction quantity, and voucher reference (Muller, 2003; as cited by Mohamud, 2016).

The final variable, strategic supplier partnership has strong positive and significant relationship with Ethio telecom's operational performance, with a correlation coefficient of 0.56 and a p-value of 0.00. Improved service delivery is aided by strategic supplier partnerships according to different literatures.

The following measurement scale intervals or ranges were used to make the interpretation:

Table 4. 10 Correlation Interpretation

Correlation Result	Interpretation
+/- 1	Perfect
+/- 0.8-0.9	Very Strong (Positively/Negatively)
+/- 0.5-0.8	Strong (Positively/Negatively)
+/- 0.3-0.5	Moderate (Positively/Negatively)
+/- 0.1-0.3	Modest (Positively/Negatively)
+/- <0.1	Weak (Positively/Negatively)
0	No

4.5.2. Assumptions Testing

When someone decides to use linear regression to analyze data, part of the process entails making sure that the data they want to study can really be analyzed using linear regression. As a result, it is necessary to do so, since linear regression can only be used if the required data "passes" four assumptions that are required for linear regression to produce a valid result. Let's see if the following assumptions are true or not. SPSS Statistics can be used to check assumptions, and linearity assumptions should be evaluated first before moving on to additional assumptions.

4.5.2.1 Multi Collinearity

Table 4. 11 Multi collinearity Model

Multi Collinearity Analysis		
	Tolerance	VIF
Effective Inventory Planning		1.806
Inventory controlling		1.651
Inventory Recording		1.973
Strategic Supplier Partnership		1.618

Source; own computation, 2022

The Tolerance values for all of the independent variables are larger than 0.1, as shown in the table above, and the VIF values are also less than the cut-off value of 10. If the VIF values of the independent variables exceed 10, it is suggested that more research be done (Robert, 2006). Multicollinearity is not a concern in this scenario, as indicated by the Tolerance and VIF values.

4.5.2.2. Test of Normality (Skewness and the kurtosis Test)

One way of measuring the normality of distribution is through checking the level of skewness and kurtosis. Usually the value of skewness and kurtosis for normal distribution is varied from 1 to -1.

Table 4. 12 Skewness and kurtosis

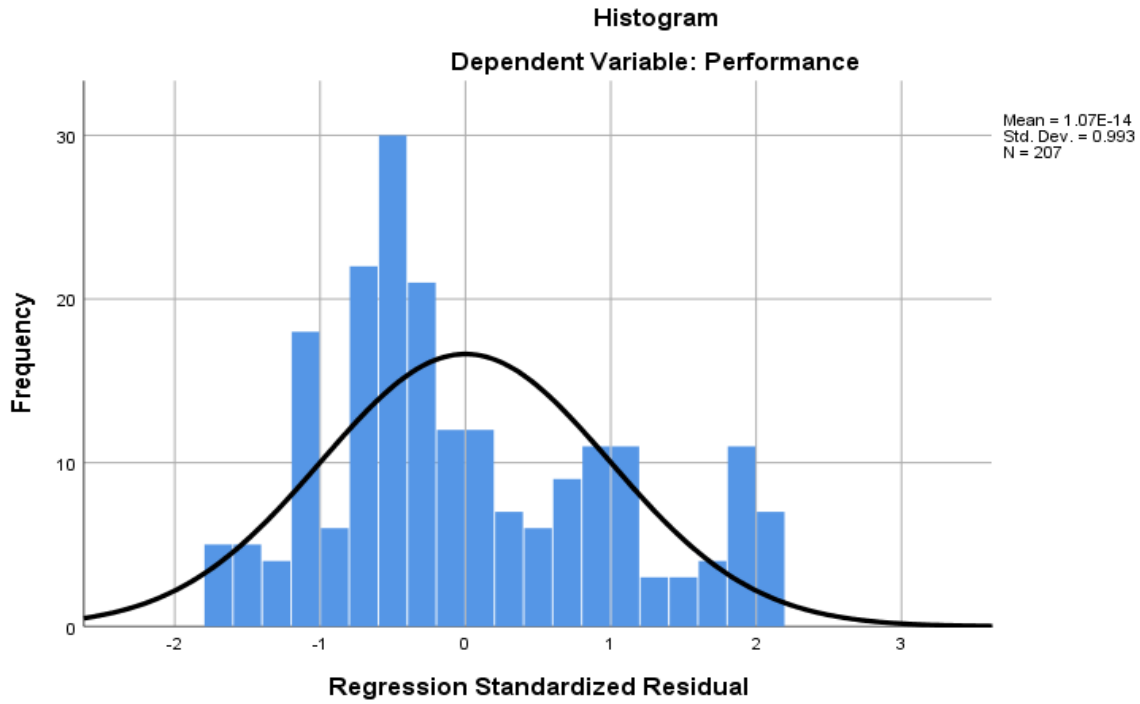
	N	Skewness		Kurtosis	
		Statistic	Std. Error	Statistic	Std. Error
Operational Performance		-.205	.169	1.201	.337
Effective Inventory Planning		-1.359	.169	-1.385	.337
Inventory controlling		.244	.169	-.343	.337
Inventory Recording		-.561	.169	-.333	.337
Strategic Supplier Partnership		-.523	.169	-.273	.337

Source; own computation, 2022

All independent variables are within the permissible range of normality (-1 to +1) except effective inventory planning becomes out in both skewness and kurtosis very slightly. The dependent variable operational performance deviates in kurtosis very slightly from the acceptable interval. But it is possible since the deviation is very insignificant. All the rest variables' skewness and kurtosis was within the acceptable range of normalcy. The normality assumptions are met, thus we can draw a conclusion.

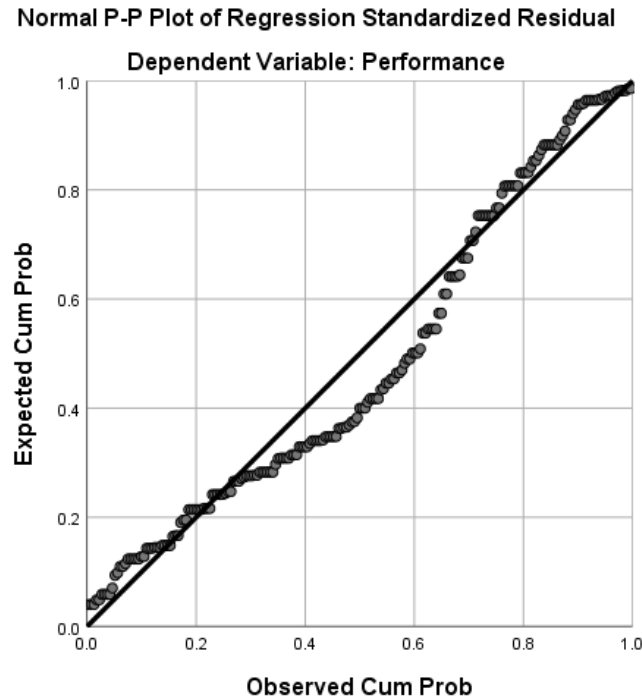
The normality assumption is based on the shape of the normal distribution and informs the researcher about the expected values. It is possible to generate predictions for a fresh sample once the sampling distribution of the mean is known. The histogram with normal distribution from the SPSS software is shown below.

Figure 4. 1Histogram



The dependent variable is defined as a linear function of the predictor (independent) variables by linearity. When the relationship between the dependent and independent variables is linear, multiple regression can be used to effectively estimate the relationship (Kothari, 1992). The normal P-plot with normal distribution from the SPSS software is shown below.

Figure 4. 2Normal P-P Plot of Regression Standardized Residual

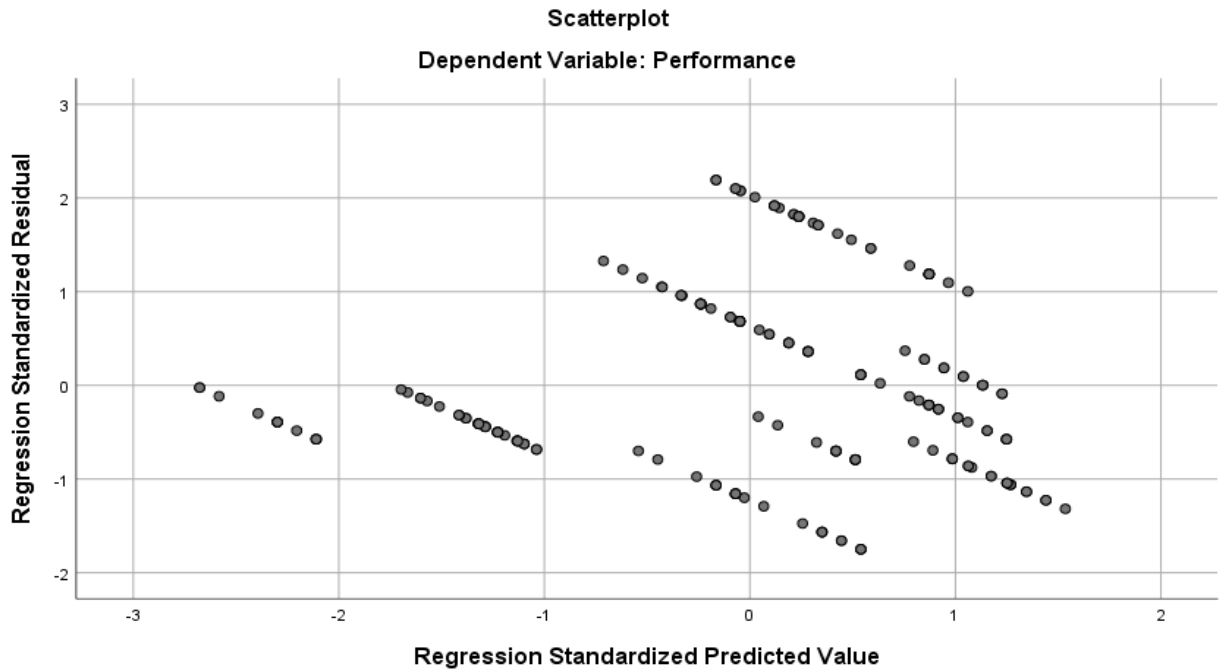


Multiple regressions assume that variables have normal distributions. This means that errors are normally distributed, and that a plot of the values of the residuals will approximate a normal curve.

4.5.2.3. Linearity Test

Both normality and linearity are important assumptions of multivariate analysis and thus should be fulfilled (Hair and Anderson, 2010). Because of correlation, regression, and other elements of the General Linear Model (GLM) presuppose linearity, a test for linearity is required. The research looks for patterns in scatter plots of inventory management practices (effective inventory planning, inventory controlling, inventory recording, and strategic supplier partnership) versus organizational performance to see if they have a linear relationship and if the assumptions have been met. The scatter plot in the figure below shows a linear link between the characteristics of inventory management practices and operational performance.

Figure 4. 3Scatter Plot



When the standard deviations of the residual surpass the standard deviations of the dependent, this is an indicator of likely linearity in regression. As can be seen in the residual statistics table below, the standard deviation of the residual is greater than the standard deviation of the dependent variable (operational performance). As a result, inventory management variables and operational performance have a linear relationship.

Table 4. 13 Residual Statistics

Residuals Statistics ^a					
	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	2.3919	4.1670	3.5266	.41797	207
Residual	-.73420	.91806	.00000	.42549	207
Std. Predicted Value	-2.715	1.532	.000	1.000	207
Std. Residual	-1.709	2.137	.000	.990	207
a Dependent Variable: Operation Performance					

Source; own computation

4.6. Multiple Regression Analysis

Multiple regression analysis is a statistical method for examining the relationship between numerous independent variables and a single dependent variable. The goal of multiple regression analysis is to predict the value of a single dependent variable by using known independent variables. Each predictor value is weighed, with the weights indicating how much of an impact it has on the overall forecast. Multiple regression analysis is selected because it can be used to determine the strength of the association between an outcome variable (the dependent variable) and various predictor variables, as well as the relative value of each predictor. Before discussing the result, coefficient value, R^2 , F-Stat, Beta and T-Stat are described briefly.

Coefficient value: It depicts if the variables have a negative or positive impact. If the coefficient value is positive, it means that the independent variable has a positive effect on the dependent variable. If the sign is negative, it denotes a negative effect.

Constant- The intercept is essentially the constant. As a result, the value of the constant cannot be ignored, yet it has no direct or indirect impact on the outcome. It simply shows that even if the independent variable has no value, the dependent variable will have some value.

R^2 - explains the variation in dependent variable because of independent variable(s) in model

F-Stat- predicts the model fitness of regression. It compares the joint effect of all the variables together.

Beta- beta-value indicates that with one unit change in independent variable the beta units will change in the dependent variable.

T-stat- is used in a t-test to determine if you should support or reject the null hypothesis. If the values are significant you accept the alternate hypothesis.

Table 4. 14 Model summary^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				Durbin-Watson	
					R Change	F Change	df1	df2		Sig.
1	.701	.491	.481	.43	.491	48.73	4	202	.000	1.141

a. Predictors: (Constant), Effective inventory planning, Inventory controlling, Inventory recording, Strategic supplier partnership

b. Dependent Variable: Operational Performance

Source; own computation, 2022

The table 4.14 shows the variation of variables used in the analysis. R-square which is the coefficient of determinant tells that how much variation is taking place in dependent variable (organizational performance) due to independent variables (effective inventory planning, inventory controlling, inventory recording and strategic supplier partnership). According to the table, R square value is 0.491, which means 49.1 percent of change in operational performance is taking place due to effective inventory planning, inventory controlling, inventory recording and strategic supplier partnership.

Table 4. 15 ANOVA^a (Analysis of variance)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	35.989	4	8.997	48.731	.000
	Residual	37.295	202	.185		
	Total	73.284	206			
<p>a. Dependent Variable: Operational Performance</p> <p>b. Predictors: (Constant), Strategic supplier partnership, Inventory Recording, Inventory controlling, Effective inventory planning</p>						

According to Saunders (2012) if the F ratio is large and probability is less than 0.05 then it is termed statistically significant. Thus, as shown in the table 4.15 the F-statistics for each independent variable is 48.73 that is more than 4, this indicates that the model is overall good fit and significant at $P < 0.05$. Therefore, it can be concluded that the model is statistically significant.

The analysis of variance (ANOVA) was used to see if the mean of one dependent variable differed significantly across categories of other independent variables. The outcome of the significance test for R and R^2 using an F-statistic was presented in the ANOVA table. Because the test result is significant, with a P-value less than 0.01, the R^2 is considerably different from zero, indicating that there is a relationship between the independent variables (factors) and the dependent variable (operational performance) (Field, 2006).

Table 4. 16 Regression Coefficients^a

Model	Unstandardized		Standardize		t	Sig.	Collinearity		
	Coefficients		d				Statistics	Tolerance	VIF
	B	Std. Error	Beta						
1	(Constant)	-.414	.307		-1.350	.179			
	Effective Inventory planning	.656	.100	.442	6.554	.000	.554	1.806	
	Inventory controlling	.284	.074	.247	3.833	.000	.606	1.651	
	Inventory recording	-.094	.093	-.071	-1.005	.316	.507	1.973	
	Strategic supplier partnership	.237	.063	.239	3.740	.000	.618	1.618	
a. Dependent Variable : Organizational performance									

Source; own computation, 2022

Based on table 4.16 the regression coefficients result, we can put the regression equation “OP= $\beta_0 + \beta_1EIP+ \beta_2 IC+\beta_3IR+ \beta_4SSP+ \epsilon$ ” as

$$OP = -0.414 + .656EIP + .284IC + -.094IR + .237SSP$$

A. Standardized Beta Coefficient

Because they are always assessed in standard deviation and are not dependent on the unit of measurement of the variables, standardized beta coefficients are also known as relative relevance weights and can be used to compare scores like Z-scores (Field, 2006). The proportionate contribution of each predictor to R² after adjusting for the effects of inter-correlations among predictors are known as relative significance weights (Lorenzo-Seva et al., 2010). This strategy is advised when the researcher wants to see how much each predictor variable contributes to the dependent variable (Johnson, 2004).

Depending on the table above we can observe that the contribution of effective inventory planning, inventory controlling and strategic supplier partnership was 44.2 percent, 24.7 percent and 23.9 percent respectively for the variation observed in dependent variable (operational performance). The highest from the given independent variables is effective inventory planning according to the responses collected from employees. The second most important factor is inventory controlling followed by strategic supplier partnership.

B. Unstandardized Beta Coefficient

The unstandardized beta coefficients tell us about the relationships between the dependent and independent variables. The association between the predictor and the outcome is positive if the value is positive. A negative coefficient indicates that there is a negative association (Field, 2006). According to Pedhazur (1997), a weight coefficient tells us how much of a change in the criterion variable (in this case, operational performance) we can expect from a one-unit change in the predictor variables (effective inventory planning, inventory controlling, inventory recording, and strategic supplier partnership), while keeping all other predictor variables constant. That is, provided all other things remain constant, according the table above as the company's inventory planning effectiveness grows by one unit, operational performance increases by 0.656 units.

4.7. Hypothesis Testing

Hypothesis 1

H₁: 1 Effective Inventory Planning has positive and significant effect on operational performance

H₀: 1 Effective Inventory Planning has no effect on operational performance

As shown in the table 4.16 the result indicated that effective inventory planning has very significant and positive effect on operational performance with $B=0.656$ at $p < 0.05$. This implies that when inventory planning effectiveness increases by 1 unit operational performance will increase by 0.656. Therefore, the alternative hypothesis is accepted and the null hypothesis is rejected. So, it can be concluded that effective inventory planning has a significant and strong effect on operational performance. This finding is consistent with the study by Ouma & Mwangangi (2018) Demand forecasting consistency, production

planning, and reduced lead times all contribute to optimum stock levels, which boosts the company's success. He went on to say that inventory planning had an impact on a company's operational performance.

Hypothesis 2

H1: 2 Inventory controlling has positive and significant effect on operational performance

H₀: 2 Inventory controlling has no effect on operational performance

As shown in the table 4.16 the result indicated that inventory controlling has very significant and positive effect on operational performance with $B=0.284$ at $p < 0.05$. This implies that when inventory controlling increases by 1 percent operational performance will increase by 28.4 percent. Therefore, we reject the null hypothesis and accept the alternative hypothesis that inventory controlling significantly affects operational performance.

Hypothesis 3

H1: 3 Inventory recording has an effect on operational performance

H₀: 3 Inventory recording has no effect on operational performance

Table 4.16 depicts that inventory recording has slightly negative and insignificant effect on operational performance with beta value equals $-.091$ and $p > 0.05$. Thus, the hypothesis is rejected. The reason could be because Inventory recording is mainly intertwined in most of the inventory management practices (inventory planning and inventory controlling) which have been adopted by business firms. Though inventory recording has insignificant and slightly negative relationship with operational performance it was highly embraced by employees of ethio telecom supply chain division having a cumulative mean of 4.0 which is the highest from all other independent variables. This further implies that having strong inventory recording system solely is guarantee for better performance, rather, enhancing the awareness level throughout users, strong follow up and continuous update will make a difference.

Hypothesis 4

H₁: 4 Strategic supplier partnerships has effect on operational performance

H₀: 4 Strategic supplier partnerships has no effect on operational performance

According to table 4.16 the coefficient beta and p-value of strategic supplier partnership has positive and significant effect with $b = .237$ and $p < 0.05$. Thus, this implies that a one percent increase in strategic supplier partnership will increase 23.7 percent increase in operational performance. This finding supported the study by Marthe (2021) that concludes the company should collaborate with suppliers to prepare for inventory replenishment, and there should be a strategic partnership between suppliers and clients, with collaborative planning meetings where the customers' and suppliers' delivery schedules are discussed, synchronized, and agreed upon. Work becomes more efficient and productive as a result of excellent communication between customers and providers. Furthermore, Tesfaye (2019) argue that stringent supplier assessment and ongoing monitoring of suppliers' performance, rather than just creating connections with suppliers, is the most important aspect in ensuring excellent organizational performance. The findings show that rather than being treated as a one-time transaction (or arm's length relationship), supplier assessment should be done in the context of creating strategic long-term supplier partnerships.

Chapter Five

5. Summary of key Findings Conclusion and Recommendation

5.1. Introduction

This chapter gives the summary, conclusions, recommendations made based on findings, limitation of the study and the suggestions for further studies. The intension of this study was to evaluate the effect of inventory management practices on operational performance of ethio telecom. To meet the study's goal, relevant literatures were investigated, and quantitative data was gathered via a questionnaire filled out by employees. The statistical program for social science (SPSS 26.0) version was used to display, analyze, interpret, and discuss the data acquired through the questionnaire. Based on the analysis the following conclusions were made and recommendations forwarded.

5.2. Summary of Findings

The research study was sub-divided in to three segments on questionnaire; the first part consists demographic information of respondents, the second part entails closed ended questionnaire related to the dependent variable 'operational performance' and independent variables 'effective inventory planning, inventory controlling, inventory recording and strategic supplier partnership'. The last section was open ended questions that the respondent shares relevant ideas from his practical experiences.

The average perception of operational performance among supply chain management professionals was 3.0, with a standard deviation of 0.84. This indicates that respondents are neutral about whether the company's actual performance fulfills the specified benchmark. The lowest mean was found for lean operation and lead time among the questions asked.

The results of the investigation revealed that each of the inventory management practices was embraced from highest to a moderate degree. Inventory recording, with a cumulative mean of 4.0, was the most popular inventory management activity by the employees, followed by strategic supplier partnerships, with a cumulative mean of 3.6. 3.36 and 3.17, respectively, are the cumulative means for inventory control and inventory recording.

Using a multiple regression model, the collected data was used to regress inventory management practices against operational performance of the case company. The analysis revealed that a significant relationship between the dependent variable and independent variables with probability value $p=0.00$. Out of all independent variables inventory recording was negatively related to operational performance while, Effective inventory planning, inventory controlling and strategic supplier partnership were significantly related to operational performance.

Inventory management practices were regressed against overall operational performance R^2 value was found to be 0.491. Which means that, the variation in inventory management practices (effective inventory planning, inventory controlling, inventory recording and strategic supplier partnership) can explain 49.1 % of the variation in operational performance.

5.3. Conclusions

The main themes of the findings are stated below

- ✓ The mean score of operational performance(3.0), effective inventory planning (3.17), inventory controlling (3.36), inventory recording (4) and strategic supplier partnership (3.6) was computed from the data collected from employees. This indicates that in most of the inventory management practices in the case company, employees agreed to the average level.
- ✓ Items in the operational performance and effective inventory panning are critical since most respondents are neutral and some disagree with.
- ✓ The Pearson correlation result show that there is significant and positive relationship between inventory management practices (inventory panning, inventory controlling, inventory recording and strategic supplier partnership) and operational performance. According to the result, the highest correlation is with inventory planning ($r= 0.62$, $p < 0.05$) followed by, strategic supplier partnership($r= 0.564$, $p < 0.05$).
- ✓ The regression result shows that effective inventory planning has very significant and positive effect on operational performance with $B=0.656$ at $p < 0.05$. Thus, hypothesis 1 (H1): effective inventory planning has a significant effect on operational performance is supported and accepted.

- ✓ The regression result shows when inventory controlling increases by 1 percent operational performance will increase by 28.4 percent. Therefore, we reject the null hypothesis and accept the alternative hypothesis that inventory controlling affects operational performance.
- ✓ As per the regression result inventory recording has a slightly negative and insignificant effect on operational performance with beta value equals $-.094$ and $p > 0.05$. Therefore, the hypothesis that inventory recording has positive and significant effect on operational performance has been rejected.
- ✓ The coefficient beta and p-value of strategic supplier partnership has positive and significant effect with $b = .237$ and $p < 0.05$. Thus, the hypothesis 'strategic supplier partnership has positive and significant effect on operational performance' has been accepted.
- ✓ The overall, results revealed that all independent variables accounted for 49.1% of the variance in organizational performance ($R^2 = 0.491$). Thus, 49.1% of the variation in operational performance can be explained by the four inventory management practices and other unexplored factors may limit operational performance which accounts for about 51.9%.

5.4. Recommendations

Depending on the findings of the study and conclusions posed, the following recommendations are forwarded.

- Ethio telecom should pay close attention to inventory planning because inventory planning is important for maintaining a lean operation while also responding quickly to customer requests. Furthermore, effective inventory planning enables the company to meet its strategic objectives, such as cost optimization and building agile supply chain. Hence, the company should not only plan inventory to improve operations, but also to improve competitiveness and financial performance.
- The company should improve its inventory control system, which will aid in cost savings, fewer stock outs, and fewer lost sales. Furthermore, the company should implement a flexible operation that will allow it to respond quickly to any changes that occur.
- The company should use the existing ERP system thoroughly to maintain accurate and reliable stock records and to prevent stock management faults
- Strategic supplier partnership has the second highest mean of 3.6, which suggests that the company should adopt strategic relationship with its suppliers through creating long lasting partnership with suppliers, collaborating on quality improvement, considering key suppliers as an extension of the

company and building enhanced communication platforms with major suppliers, so that it can minimize supply uncertainty which resulted in demand and supply mismatch.

- According to the findings, employees' abilities should be improved on a regular basis and management must take a firm stance in order to implement inventory management practices at the required level.

5.5. Limitation and Suggestions for Future Studies

The following are some of the study's limitations: To begin with, the number of independent variables listed in this study is not restricted to four. As a result, more variables might be used to measure and assess the impact of inventory management practices on operational performance. Future studies should consider more dimensions of inventory management that were not considered in this study in order to benefit from a comprehensive assessment of the factors that truly affect the performance of firms' operational performance.

The other important limitation is the fact that the study was conducted purely from the responses obtained from the employees of ethio telecom supply chain division. Since the questions were subjective, it would be exposed to biasedness. The future researchers should consider it by using objective measures by collecting and analyzing secondary data. It is also better to make comparative study rather than focusing on a single company.

References

- A. C., Olanrewaju, A. P., & Anyuabaga, T. S. (2018). Impact of Inventory Management Practices on Organizational Performance: A Study of College of Education Akwanga. *International Journal of Advanced Research in Accounting, Economics and Business Perspectives | IJARAEBP*, 26-38.
- Abukar, M. H. (2016). EFFECTS OF INVENTORY MANAGEMENT ON BUSINESS PERFORMANCE OF ELECTRONIC COMPANY. *IJRDO - Journal of Business Management*, 2(9), 190-210.
- Ahmad, Y. F. (2014). The Relationship between Supply Chain Fit and Financial Performance of Manufacturing Firms in the UAE. *The British University in Dubai*, 22.
- Arora, M. M. (2000). *A textbook Cost Accounting*. New Delhi: CBS Publishing Limited.
- Arrow, K. J., Karlin, S., & Scarf, H. E. (1958). *Studies in the Mathematical Theories of inventory and Production*. Redwood City: Stanford University.
- Atnafu, D. (2018). Inventory Management Practice in Micro and Small Enterprise: The Case of MSEs' Manufacturing Sub Sector Arsi Zone, Ethiopia. *Journal of Economics and Sustainable Development*.
- Atnafu, D., & Balda, A. (2018). Inventory Management Practice in Micro and Small Enterprise: The Case of MSEs' Manufacturing Sub Sector Arsi Zone, Ethiopia. *Journal of Economics and Sustainable Development*, 29-36.
- Ayele, G. D., & Ram, T. (2021). The Effect of Information sharing and Inventory Management in the Supply Chain Practices on Firms' Performance: Empirical Evidence from Some Selected Companies of Ethiopia. *International Journal of Industrial Engineering and Operations Management (IJIEOM)*, 1-15.
- Bai, L., & Ying, Z. (2008). Improving Inventory Management In Small Business. *J Önköp Ing Int E Rnat Ional Bus Ine Ss School*.

- Baldwin, & Pint. (1997). Outsourcing Management Functions for the Acquisition of Federal Facilities. A.A.
- Barney, & Jay. (2001). Is the resource-based “view” a useful perspective for strategic management research? Yes”. *Academy of Management Review*, 41-56.
- Baye, D. (2017). *Effects Of Inventory Management Practices On Organizations Operational Performances;The Case Of Ethiopian Airlines*. Addis Ababa.
- Bicheno, J. (2004). *Supplier partnerships*. London: National institute for manufacturing management.
- Brooks, N. E., Kyle, W. S., Todd, G., & Douglas, S. V. (2007). Stock assessment protogenous fish; evaluating measures spawning biomass used to estimate biological reference points. Miami: *South East Fisheries Science Center*.
- Brownell, J. (2005). Strengthening the Purchase Supplier Partnership.*A working paper Cornell University*.
- Carter, R., & Price, P. (2010). Integrated material management. London: Pitman: *International data interchange association*.
- Carter, S. A. (2002). *Production and Inventory Control Handbook*. New York: McGraw- Hill.
- Chan, W. S., Tasmin, R., Aziati, N. A., Rasi, Z. R., Ismael, B. F., & Yaw, P. L. (2017). Factors Influencing effectiveness of Inventory Management in Mnaufacturing SMEs. Britol,UK: IOP.
- Chen, I., & Paulraj, A. (2004). Towards a theory of supply chain management:the constructs and measurements. *Journal of Operations Management*.
- Chen, X., & Simchi-Levi, D. (2004). Coordinating Inventory Control and Pricing Strategies with Random Demand and fixed Ordering Cost; The finite Horizon case. *Operations Research*, 887-896.

- cooper, M.C., Lambert, D.M., Pagh, & J.D. (1997). Supply Chain Management: More Than A new name of Logistics. *The International Journal of Logistics Management*, 8(1), 1-13.
- Cowell, F. A. (2004). Micro economics Principles and Analysis. London: STICERD and Department of Economics.
- Damlin, A. D. (2012). Measuring buyer-supplier relationship performance,.Gothenburg,Sweden.
- Dilworth S. and Chen, D. (1992). Managing healthcare quality in project management framework”. *International Journal of Services and Operations Management, Distribution & Logistics Management*.
- Dominguez-Perez, F., Lopes-Martinez, I., Felipe-Valdes, P. M., & Valin-Garcia, A. E. (2018). Proposal for The Classification of Inputs for inventory management in the bio-pharmaceutical Industry; Case study at the center for Molecular Immunology. *Vccimonitor*, 51-60.
- Eroglu, C., & Hofer, C. (2011). Lean, Leaner, too Lean The Inventory-Performance lonk revisited . *Journal Operations Mnagement*, 356-369.
- Falasca, M., Kros, J. M., & Nadler, S. S. (2016). Performance Outcomes and Success Factors of Industrial Vending Solution. *International Journal Operations and Production Management*, 1559-1381.
- Firdu, W., & Kassu, T. (2020). Factors That Affect the Effectiveness of Inventory Management of Ethio Telecom. *Research Journal of Finance and Accounting*, 1-9.
- Gitau, N. N. (2016). *The Effect Of Inventory Management Practices On Operational Performance Of Warehousing Firms In Mombasa County*. Nairobi: University Of Nairobi.
- Guliti, B. M. (2018). Inventory Management Practice Of Ethio Telecom, Dessie , Ethiopia. *International Journal of Management and Social Sciences*, 133-139.

- Harrison, G., Glazebrook, C., & Brewin, J. (1997). Increased incidence of psychotic disorders in African Caribbean migrants to the UK. *Psychological Medicine*, 799 -806.
- Hoopes, D., Madsen, T., & Walker, G. (2003). Guest Editor's Introduction to the Special Issue: Why is there a Resource-Based View? Toward a Theory of Competitive Heterogeneity. *Strategic Management Journal*, 889-902.
- Huo, B., Qi, Y., Wang, Z., & Zhao, X. (2014). The impact of supply chain integration on firm performance: the moderating role of competitive strategy, *Supply Chain Management. An International Journal*.
- Inman, R. A., & Green, K. W. (2018). Lean and Green Combine to Impact Environmental and Operational Performance. *Internal Journal of Production Research*, 4802-4818.
- Iravo, A., & Mukopi, C. (2015). An analysis of the effects of Inventory Management in the performance of the procurement function of sugar manufacturing companies in the western Kenya. Nairobi, Kenya.
- Jackson, I., Tolujevs, J., & Kegenbekov, Z. (2020). Review of Inventory Control Models; A Classification based on Methods of obtaining optimal control Parametres . *Transport and Telecommunication Journal*, 191-202.
- Kamau, L. W., & Assumpta, W. K. (2015). Influence Of Inventory Management Practices On Organizational Competitiveness:A Case Of Safaricom Kenya LTD. *International Academic Journal of Procurement and Supply Chain Management*, 72-98.
- Kamau, L. W., & Kagiri, A. W. (2015). Influence of inventory management practices on organizational competitiveness: A case of Safaricom Kenya Ltd. *International Academic Journal of Procurement and Supply Chain Management*, 72-98.
- Kamukama, E. (2006). *Leadrship in Organizations*. Evans Brothers Limited.
- Kandampully, J. (2003). B2B Relationships and Networks in the Internet Age. *Journal Management Decisions*.

- Kofi, Y. I., & David, A. (2020). The Effectiveness of Inventory and Stores Management on Turnover Performance of Central Medical Stores. *African Journal of Procurement, Logistics & Supply Chain Management*, 1-20.
- Koin V. R, Cheruiyot G. K, & Mwangangi P. (2014). Effect Of Inventory Management On The Supply Chain Effectiveness In The Manufacturing Industry In Kenya: A Case Study Of Tata Chemicals Magadi. *International Journal Of Social Sciences Management And*, 189-202.
- Kothari, C. R. (1992). *An introduction to operational Research*. New Delhi: Vikas publishing.
- Krafcik, J. F. (1988). Triumph of the Lean Production System. *Slowan Mnagement Review*, 41-52.
- Krause, D., & Ellram, L. (1997). Critical elements for Supplier development,. *European Journal of Purchasing and Supply Management*.
- Lacey, T. (2005). *Cost Accounting*. London: ELST Publisher.
- Lambert, D. M., & Terrance, L. P. (2001). "Supply Chain Metrics,". *The International Journal of Logistics Management*, 1-19.
- Lau, A., & Snel, R. (2006). Structure and Growth in Small Hong Kong Enterprises. *International Journal of Entrepreneurial Behavior and Research*, 29-47.
- Loughrim, M. (2008). *Lean Thinking and Vendor Managed Inventory*. A working Paper University of Liverpool.
- LUKUMON, A. S., & ABRAHAM, O. A. (2018). *Effect of Inventory Management System on Operational Performance in Manufacturing Firms*. Lagos: Study of May and Baker Manufacturing Industry Nig Ltd.

- Lwiki, T. (2013). The Impact of Inventory Management Practices on Financial Performance of Sugar Manufacturing Firms in Kenya. *International Journal of Business, Humanities and Technology*.
- Lysons, K. (2012). *Purchasing and supply chain management*. London: Prentice Hall.
- Lysons, K., & Gillingham, M. (2003). *Purchasing and supply chain management*. London: Prentice Hall.
- Malcom, S. (2005). *strategic purchasing and supply chain management* (2 ed.). London: Pittman publishing.
- Martand, T. T. (2009). *Production Management*. New Delhi: Ram Nagar.
- Marthe, N. (2021). *Effect of inventory management practices on operational performance; a case of Bamburi cement limited*. Nairobi, Kenya.
- Mbah, S., Obiezewen, J., & Okuoyibo, A. (2019). Inventory Management and Operational Performance of Manufacturing Firms in South East Nigeria. *International Business Research*, 76-82.
- Menon, K. S. (2006). *Purchasing and inventory control*. New Delhi: Wheeler Limited.
- Miller, R. (2010). *Inventors Control: Theory and Practice*. New Jersey: Prentice Hall.
- Min, H. (2015). *The Essentials of Supply Chain Management*. U.S. of America: Paul Bogger.
- Mohammed, A., Denu, B., & Ensermu, M. (2014). Graduate Programme Research Methods. Addis Ababa: AAU, School of Commerce.
- Mohamud, H. A. (2016). Effects Of Inventory Management On Business Performance Of Electronic Company. *IJRDO - Journal of Business Management*, 2(9), 190-210.
- Moorthy, M. K., Yew, N. C., & Chelliah, M. K. (2012). The Impact of Inventory Control on Cost and Profitability. *Universiti Tunku Abdul Rahman, Malaysia*.

- Negash, K. T. (2020, January). Assessing The Inventory Management Practices, A Case Of Manufacturing Firms In Hawassa City, Ethiopia. *International Journal of Current Research*, 12(02), 10388-10395.
- Nweze, A. (2004). *Quantitative Approach to Management Accounting*. Enugu: Amazing Grace Printing and Publishing Co.
- Ogbad, E. E. (2009). Profitability Through Effective Management Of Material. *Journal Of Economics And International Finance*, 099-105.
- Ogbadu, E. E. (2009). Profitability through effective management of materials. *Journal of economics and International Finance*, 099-105.
- Ogbo, A. I., & Ukpere, W. I. (2014). The Impact of Effective Inventory Control Management on Organisational Performance: A Study of 7up Bottling Company Nile Mile Enugu, Nigeria. *Mediterranean Journal of Social Sciences*, 109-118.
- Olaniyan et al. (2020, August). Impacts of Inventory Management Practices on Organization Performance. *International Journal of Academic Accounting, Finance & Management Research (IJAAFMR)*, 4(8), 95-105.
- Orga, C. C. (2006). *Productions Management A Quantitative Approach*. Enugu: Veemarks Publishes.
- Ortega, M., & Lin, L. (2004). Control Theory Applications to the Production Inventory Problem; A Review. *International Journal of Production Research*, 2303-2322.
- Osei-Mensah, E. (2016). *The effect of inventpry management practices on service delivery at St. Martin's Hospital in Agroyesum*. Kwame Nkrumah University of Sceince and Technology, Amansie-West.
- Ouma, M., & Mwangangi, D. P. (2018). Influence of inventory management systems on performance of soft drinks manufacturing firms in kenya. *International Journal of business management and finance*, 972-985.

- Panwar, A., Jain, R., Rathore, A., & Nepal, B. (2018). The Impact of Lean Practices on Operational Practices on Operational Performces - an Emprirical Investigation of Indian Process Industries. *Production Planning and Control*, 158-169.
- Penrose, E. (1959). *The Theory of the Growth of the Firm*. New York: Oxford University Press.
- Piasecki, D. J. (2003). *Inventory accuracy ; People, Process and Technology*. International Kindle Paperwhite.
- Po-Lynn, E. (2019). Framework for Managing an efficient and Effective and Effective Pharmaceutical Supply Chain in Malaysia. United Kingdem: Sheffield Hallam University.
- Razi, M. A., & Tam, M. J. (2003). An applied model for improving inventory management in ERP systems. *Journal of Logistics Information Management*.
- Remko, I. v., Alan, H., & Martin, C. (2001). Measuring agile capabilities in the supply chain. *International Journal of Operations & Production Management*, 126-148.
- Rushton, A. P., & Baker, P. (2011). *The handbook of logistics and ditribution management*. London: Kogan page ltd.
- Rushton, A., P. C., & P. B. (2014). *The book of Logistics and Distribution Management*. New Delhi: The Chartered Institute of Logistics and Transport.
- Shin, H., Collier, D., & Wilson, D. (2000). Supply Management Orientation and Supplier/Buyer Performance. *Journal of Operations Management*, 317-333.
- Shin, S., Ennis, K. L., & Spurlin, W. P. (2015). Effect of Inventory Mnagement Efficiency on Profitability; Current evidence from the US Manufacturing industry. *Journal of Economics Economic education Research*, 98-106.
- Swink, M., Narasimhan, R., & Wang, C. (2007). Managing beyond the factory walls:effects of four types of strategic integration on manufacturing plant performance. *Journal of Operations Management*.

- Taskin, S., & Loderee, E. J. (2010). Inventory Decisions for Emergency Supplies Based on hurricane count predictions. *International Journal Production Economics*, 66-75.
- Tempelmeier, H. (2011). *Inventory Management in Supply Networks*. Norderstedt, Germany: GmBH.
- Tesfaye, B. (2019). *Effect Of Strategic Sourcing On Organizational Performance: The Case Of MOHA Soft Drinks Industry S.C. A.A.*
- VALOGIX. (2015). *The Art of Inventory Planning*.
- Van der, V. T., & van Donk, D. (2008). A critical review on survey-based research in supply chain integration. *International Journal of Production Economics*.
- Vipulesh, S. (2015). Impact of Inventory Management on the Financial Performance of the firm. *IOSR Journal of Business and Management (IOSR-JBM)*, 1-12.
- Wako, E. (2018). Assessment of Inventory Management Practice (The Case of Hawasa Textile Factory), Ethiopia. *Journal of Supply Chain Management System*, 1-8.
- Wedajo, S. (2017). *An Assessment Of Inventory Management System: The Case Of Ethiopian Electric Utility*. Addis Ababa: St.Mary's University.
- Wernerfelt, B. (1984). A Resource-Based View of the Firm. *Strategic Management Journal*, 171-180.
- Womack, J. P., & Jones, D. T. (1996). Beyond Toyota; How to root out waste and Pursue Perfection. *Harvard Business Review*, 140-151.
- Yin, R. K. (2017). *Case study research and Application; Design and Methods*. Thousand Oaks, CA: Sage.
- Zappone, G. (2014). *Inventory Theory. Principles of Supply Chain Management. A Balanced approach*, USA.

Zomerdijk, L. G., & De-Vries, J. (2004). An Organizational Perspective on Inventory Control; Theory and A case Study. *International Journal of Production Economics*, 173-183.

Annex

Addis Ababa
University
(Since 1950)



School of commerce

Logistics and Supply chain management

Questionnaire on

The Effect of Inventory Management Practices on Corporates Operational Performance: The case of ethio-telecom

Dear Sir/Madam, my name is Mubarek Abdulkadir I have been studying MA in logistics and supply chain management at AAU school of commerce. The questionnaire has been structured with the intention to collect data on a research study ‘ **The Effect of Inventory Management on Corporate Operational Performance; The Case of Ethio Telecom**’. The collected data will be confidential and will be used only for academic purpose to analyze the effect of inventory management on organizational performance and forward recommendations based on the findings. Would you please take 15 up to 20 min to fill the questionnaire?

For any clarification please call 0911520176 or

E-mail- mubarekabdu

Thank You in advance

PART ONE: Demographic Information

1. Age; 18-25 26-35 36-45 above 45
2. Sex; male female
3. Educational Level; Below college diploma College Diploma First Degree (Bsc,BA)
Second Degree (Msc, MA) PhD and Above
4. Current Position; -----
5. Service year in the current position; 1-3 year 4-7 year 8-10 years Above 10 years

PART TWO: Questions Related to Inventory Management Practices and Operational Performance

Please indicate your choice checking (✓) on the appropriate box. Where 1 =Strongly Disagree, 2 = Disagree, 3=Neutral, 4 = Agree, 5= Strongly Agree

No	Measurement	Score				
		1	2	3	4	5
I.	Corporate Operational Performance					
1	The company is successful in deploying lean operation system and reduced operation costs due to deploying inventory management practices					
2	The company is successful in maintaining long term relationship with key suppliers as a result of applying inventory management practices effectively					
3	The company is successful in assuring on-time delivery of ordered materials due to effective Inventory management practices.					
4	The company is successful in providing appropriate information about inventories for concerned bodies due to inventory management practices					
5	The company has adopted a way of reacting to the changes in its operations due to inventory management practices					
II.	Effective Inventory planning					
1.	There is a joint planning session with concerned bodies (suppliers and users)					
2.	Inventory planning is an integral part of the organization’s strategic planning					
3.	The inventory planning is prepared considering the nature, the profit impact					

	and the supply risk of the items					
4.	We are able to predict the ordering, holding and storage costs of items					
5.	The company is paying unnecessary carrying cost because of poor planning or unplanned purchase					
6	The company shares actual data with suppliers for replenishment of inventories					
7	In our organization, inventories are ordered when they are required					
III.	Inventory Controlling	1	2	3	4	5
1	Inventory control systems have led to reduction of costs incurred by the organization					
2	Most of the time inventory stock have the capability to meet the demands of orders made throughout all our business lines					
3	There are minimal cases of stock out, thereby minimum lost sales					
4	The company has definite inventory control technique					
5	Our operation is flexible so that we can respond to any changes when they occur.					
IV.	Inventory Recording	1	2	3	4	5
1	Systems are able to share data seamlessly across departments					
2	Employees have access to critical updates and real-time information					
3	The current system delivers accurate reports on the inventory stock and past demands to help you make informed decisions for future purchasing and order					
4	There are no more unrecorded items in the company's warehouses					
5	The existing system help us to determine appropriate maximum and minimum inventory levels					
6	There is accurate and up-to-date stores records					
7	The current inventory recording system eases inventory count and audit					
V.	Strategic Supplier Partnership	1	2	3	4	5
1	We anticipate that our partnerships with major suppliers to last longer.					
2	We collaborate with key suppliers to improve quality of items					

