



DEBRE BERHAN UNIVERSITY

**EFFECTS OF INVENTORY MANAGEMENT SYSTEM ON
ORGANIZATIONAL PERFORMANCE: EVIDENCE FROM
SOME SELECTED MANUFACTURING FIRMS LOCATED IN
DEBRE BERHAN, ETHIOPIA**

**A Thesis Submitted in Partial Fulfillment of the Requirements for the Award
of Masters of Art Degree in Logistics and Supply Chain Management**

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STATEMENT OF DECLARATION

I, the undersigned, affirm that this thesis has been completed under the supervision of Dawit Hussien (Assistant Professor). I further declare that this work is entirely my original creation. I confirm that no part or the entirety of this thesis has been submitted to any other higher learning institution for the purpose of obtaining a degree and that all sources of materials used for the thesis have been duly acknowledged.

Name: Terefe Tamire

Signature _____

Date _____

STATEMENT OF CERTIFICATION

This is to certify that Terefe Tamrie's thesis, titled "Effects of Inventory Management System on Organizational Performance: Evidence from Some Selected Manufacturing Firms Located in Debre Berhan, Ethiopia," has been prepared in partial fulfillment of the requirements for the Master of Art degree in Logistics and Supply Chain Management. This thesis complies with university regulations and meets accepted standards in terms of origin.

Advisor: Dawit Hussien (Ass.Prof.) Signature _____ Date _____

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LIST OF ACRONYMS

IA	Inventory Accountability
IC	Inventory control
ICo	Inventory cost
IS	Inventory speed
OP	Organization performance

ABSTRACT

The aim of this study was to examine the effect of inventory management systems on the organizational performance of selected manufacturing firms in Debre Berhan, Ethiopia. A descriptive and explanatory research design was used, with a target population of 818 personnel working in Large Manufacturing Firms of Debre Berhan town employees. A sample size of 269 was drawn using Yeman's sample size determination formula. Questionnaires were utilized as the data collection tool, with two separate instruments: The organization Performance Survey and the inventory management systems Instrument. The reliability of the instruments was tested using the Crobranch alpha test. Pearson correlation and multiple linear regression analysis were conducted to estimate the causal relationships between inventory management systems and organization performance. The responses were analyzed using descriptive statistics, correlation, and regression. The findings revealed that each independent variable had a statistically significant effect on organization performance. Inventory control, Inventory speed, Inventory cost, and Inventory Accountability all had a positive impact on organization performance. The overall conclusion of the study suggests that inventory management system plays a crucial role in determining organization performance levels. As a result, the manufacturing firms should focus on improving organization performance by actively implementing effective inventory management system.

Keyword: Organizational performance, Inventory control, Inventory speed, Inventory cost, and Inventory Accountability

CHAPTER ONE: INTRODUCTION

1.1. Background of the study

Effective inventory management lies at the heart of manufacturing operations. Balancing the right amount of inventory to meet production needs while minimizing carrying costs is a crucial endeavor(Kairu, 2015). Too much inventory ties up capital, incurs storage and maintenance expenses, and risks obsolescence. Conversely, insufficient stock leads to production delays, lost sales, and customer dissatisfaction. Choosing the appropriate inventory management system - from traditional methods like reorder points to advanced digital solutions - plays a significant role in achieving this equilibrium(Crandall & Crandall, 2003).

A well-managed inventory directly impacts an organization's performance across multiple dimensions. Efficiently optimized inventory levels lead to improved production flow, reduced lead times, and enhanced customer responsiveness(Srouf & Azmy, 2021). This translates to cost savings, increased sales, and ultimately, higher profitability. Additionally, improved inventory control fosters better forecasting accuracy, minimizes stock discrepancies, and facilitates more informed decision-making, contributing to overall organizational competitiveness(Mazikana, 2023).

While the importance of inventory management is well-recognized globally, its systematic implementation in Ethiopia's manufacturing sector is still at a nascent stage. Many firms rely on traditional, manual methods, often riddled with inaccuracies and inefficiencies(Ahmed et al., 2022; Mohammed & Workneh, 2020). The adoption of modern inventory management systems and practices is gaining traction, but research exploring their specific impact on performance within the Ethiopian context remains limited.

The Ethiopian manufacturing sector is on the rise, driven by government initiatives and increasing domestic demand. Optimizing inventory management practices across this growing sector holds immense potential for enhancing operational efficiency, boosting national competitiveness, and driving economic growth(Whitfield et al., 2020). This study delves into the specific effects of various inventory management systems on performance metrics of manufacturing firms in Debre Berhan, a dynamic industrial hub of Ethiopia.

Existing studies on inventory management primarily focus on developed economies and offer limited insights into its application in emerging markets like Ethiopia(Debala et al., 2023). This study addresses this gap by providing empirical evidence on the effectiveness of different inventory management systems within the Ethiopian context. It identifies key practices that maximize performance and offers valuable recommendations for firms seeking to optimize their inventory operations(Khang et al., 2023). By bridging this knowledge gap, the study covers the way for enhanced adoption and effective implementation of efficient inventory management practices, ultimately contributing to the thriving of Ethiopia's manufacturing sector.

1.2. Statement of the problem

Efficient inventory management offers a clear path for firms to navigate the competitive landscape and achieve performance excellence. Reduced holding costs, optimized production flows, and minimized lead times translate into significant profitability gains(Niaz, 2022). Additionally, enhanced customer responsiveness and improved forecast accuracy foster trust and market reputation, contributing to sustainable growth. Despite these undeniable benefits, many firms, particularly in Ethiopia's emerging manufacturing sector, struggle to leverage the full potential of effective inventory management practices (Salman et al., 2023).

Numerous empirical studies across diverse industries and geographical regions have established a strong relationship between inventory management and organizational performance. Research in developed economies like the United States and Germany demonstrates clear reductions in costs, lead times, and stockouts due to the implementation of modern inventory management systems(Orobia et al., 2020; Vazquez Hernandez & Elizondo Rojas, 2023). Similar studies in developing countries like India and China report improved production efficiency and sales growth attributable to effective inventory control practices. This global body of evidence paints a compelling picture of the positive impact of sound inventory management across various contexts(Mondol, 2021).

While global research confirms the importance of inventory management, directly applying these findings to the Ethiopian context necessitates caution. The Ethiopian manufacturing sector operates in a distinct environment characterized by limited technological infrastructure, reliance on manual processes, and a nascent adoption of modern inventory management techniques(Cirera et al., 2023). Existing studies focused solely on developed economies or other developing countries

fail to capture the unique nuances and challenges faced by Ethiopian manufacturers. This lack of context-specific research hinders the effective translation of global best practices into actionable strategies for local firms.

Prior research efforts within Ethiopia have primarily focused on broad macro-economic factors impacting the manufacturing sector. Studies directly investigating the influence of inventory management practices on firm performance at the micro-level remain scarce. This lack of empirical evidence impedes the ability of Ethiopian manufacturers to identify efficient inventory management strategies tailored to their specific operating environment. Consequently, many firms continue to grapple with inefficiencies and suboptimal performance despite recognizing the potential benefits of better inventory control.

This study aims to bridge this critical knowledge gap by analyzing the specific effects of various inventory management systems on the performance of manufacturing firms in Debre Berhan, Ethiopia. By examining real-world data and practices within this dynamic industrial hub, the study generates practical insights into inventory management strategies that work best for Ethiopian firms. The findings offer valuable recommendations for optimizing inventory control processes, reducing costs, and ultimately, enhancing the competitiveness of Ethiopia's manufacturing sector. This research was not only empowering individual firms but also contribute to the development of broader policy frameworks and knowledge-sharing initiatives, fostering a comprehensive ecosystem for efficient inventory management practices within the Ethiopian context.

1.3. Objective of the study

1.3.1. General objective

The general objective of this study is to examine the effect of inventory management systems on the organizational performance of selected manufacturing firms in Debre Berhan, Ethiopia,

1.3.2. Specific objectives

- ✓ To examine the effect of Inventory control on organizational performance in the of selected manufacturing firms in Debre Berhan
- ✓ To scrutinize the effect of Inventory speed on organizational performance in the selected manufacturing firms in Debre Berhan

- ✓ To analyze the effect of Inventory cost on organizational performance in the selected manufacturing firms in Debre Berhan
- ✓ To examine the effect Inventory accountability on organizational performance in selected manufacturing firms in Debre Berhan

1.4. Significance of the Study

This study holds significant relevance in three key aspects: 1) Existing research on inventory management primarily focuses on developed economies or other developing countries, neglecting the unique challenges and dynamics of the Ethiopian manufacturing sector. This study fills this critical knowledge gap by offering context-specific insights, informing strategies and best practices tailored to the Ethiopian context. By bridging this gap, we pave the way for improved performance and competitiveness of Ethiopian firms, contributing to the nation's industrial growth. 2) This study's findings directly translate into actionable recommendations for Ethiopian manufacturers. By identifying key practices in different inventory management systems that correlate with improved performance metrics, we empower firms to optimize their operations and unlock cost savings, increased responsiveness, and enhanced customer satisfaction. This leads to greater profitability and resilience for individual firms, contributing to a more robust and competitive manufacturing sector overall. 3) The insights gained from this study can inform the development of broader policy frameworks and knowledge-sharing initiatives within Ethiopia. By highlighting the benefits of effective inventory management and providing practical guidance, we can encourage wider adoption of best practices throughout the sector. This, in turn, fosters a collective shift towards improved operational efficiency and contributes to Ethiopia's broader economic development goals.

1.5. Scope of the study

Conceptually, this study focuses on the interplay between various inventory management systems and organizational performance in manufacturing firms. Methodologically, it employs a quantitative approach, analyzing data from selected firms in Debre Berhan, Ethiopia, utilizing statistical methods to establish correlations and identify best practices. Geographically, the study is confined to Debre Berhan, a representative industrial hub, but aims to generate applicable insights for the broader Ethiopian manufacturing sector.

1.6. Organization of the study

The study was organized in a clear five-chapter structure. Chapter 1 lays the groundwork by providing a comprehensive backdrop of inventory management's importance and articulating the gap addressed by this research. It then succinctly outlines the study's objective of understanding the impact of various inventory management systems on performance within the Ethiopian context. Chapter 2 delves into the existing body of knowledge, reviewing empirical studies on the global relationship between inventory management and performance, while critically analyzing the current knowledge deficit specific to Ethiopia. Chapter 3 then navigates the methodological landscape, detailing the sampling approach, data collection methods, and statistical techniques employed to analyze the data from selected Debre Berhan firms. Chapter 4 emerges as the heart of the analysis, presenting the findings drawn from the data, interpreting the results, and identifying key practices within different inventory management systems that correlate with enhanced performance metrics. Finally, Chapter 5 concludes by summarizing the key findings, drawing clear inferences, and offering practical recommendations for both individual firms and broader policy initiatives to optimize inventory management practices and unlock the full potential of Ethiopia's manufacturing sector.

CHAPTER TWO: LITERATURE REVIEW

2.1. Theoretical review

2.1.1. Concept of Inventory Management System

An inventory management system is a fundamental component of a company's operations, encompassing these of ordering, storing, and utilizing inventory, including raw materials, components, and finished products. The primary goal of an inventory management system is to ensure that businesses have the right amount of stock on hand while minimizing carrying costs and the risk of stockouts(Kamau & Kagiri, 2015).

Inventory management systems (IMS) stand as the silent conductors of business efficiency, orchestrating the flow of stock from purchasing to sales. More than just glorified spreadsheets, these systems encompass a diverse set of tools and processes designed to track, analyze, and optimize inventory levels(Yosan et al., 2018). Their core objective? To strike the delicate balance between having enough stock to meet customer demand without getting swamped by excess inventory(Zeithaml et al., 1990).

This dance of scarcity and abundance requires a keen understanding of various factors. IMS track items in real-time, providing insights into sales trends, lead times, and storage limitations. They facilitate automated reordering to ensure stock never dips below critical levels, preventing lost sales and frustrated customers. By analyzing historical data and predicting future demand, IMS help prevent the costly burden of overstocking, freeing up valuable storage space and capital(Saha & Ray, 2019).

Ultimately, IMS aim to optimize the entire supply chain, turning inventory into a strategic asset rather than a burden. They streamline warehouse operations, improve order fulfillment accuracy, and boost transparency across the organization. Whether a small store or a global enterprise, adopting an effective IMS can be the difference between a chaotic scramble and a well-oiled machine, propelling organizational performance to new heights(Dennis & Meredith, 2000).

An effective inventory management system brings a host of benefits to businesses, including optimized inventory levels, reduced carrying costs, improved order fulfillment, and enhanced supply chain management(Tien et al., 2019). Additionally, it provides real-time visibility into

inventory, enabling businesses to make informed decisions and meet customer expectations. The primary objectives of an inventory management system revolve around maintaining accurate inventory levels, preventing stockouts or overstocking, and optimizing supply chain operations to ensure seamless business processes(Poirier, 1999).

2.1.2. Pillars of Inventory Management

Inventory management is a delicate dance, balancing the need to have enough stock to meet customer demand without getting bogged down by excess. It's a crucial aspect of any business, and mastering it can be the difference between success and failure(Atnafu & Balda, 2018). Let's dive into four key pillars of effective inventory management: control, speed, cost, and accountability(Njoroge, 2015).

A. Inventory control

Inventory control is all about knowing what you have, where it is, and how much. This involves accurate record-keeping, regular stock counts, and implementing systems to track movement and location. Barcode scanners and inventory management software can be invaluable tools in this regard. Effective control ensures you can meet customer demand without the risk of stockouts or overstocking(Axsäter, 2015).

Inventory control is the process of optimizing inventory storage to ensure a business has the ideal inventory levels needed to fulfill customer orders on time. It involves categorizing inventory into different types, such as raw materials/components, work-in-progress (WIP), finished goods, and maintenance, repair, and operations (MRO) items. By breaking down inventory into these categories, businesses can effectively manage their stock and minimize the risk of overstocking or stockouts(Boute et al., 2022).

The primary goal of inventory control is for brands to keep only the necessary units on hand without spending too much money upfront or sacrificing customer satisfaction. This process is essential as inventory ties up capital, requires storage at a cost, and can become damaged or depreciated over time(Aguh et al., 2022). To achieve effective inventory control, businesses utilize inventory management software and supply chain management (SCM) software to bring in data from purchases, shipping, warehousing, reorders, receiving, storage, loss prevention, and customer satisfaction. By leveraging technology and data-driven insights, businesses can efficiently and

accurately track their merchandise, ultimately reducing costs and improving customer satisfaction(Anantadjaya et al., 2021).

Inventory control is closely related to inventory management but focuses specifically on regulating the inventory already in the warehouse. It is a critical aspect of a company's operations, ensuring that the right supply of inventory is available to meet customer demand. By understanding the flow of inventory in the warehouse, businesses can gain valuable insights into product sales, inventory waste, and the costs associated with storing products between sales. Despite the challenges that may come with inventory control, such as inventory waste and storage costs, implementing effective inventory control strategies can help businesses address these issues and optimize their inventory management processes(Lukinskiy et al., 2020).

B. Inventory speed

Inventory speed, also known as inventory turnover, refers to how quickly your inventory is sold and replaced. A high inventory speed indicates efficiency, meaning you're not holding onto stock for too long and tying up valuable capital. Factors like accurate demand forecasting, optimizing reorder points, and efficient warehouse operations can all contribute to faster inventory speed(Sari & Andriyani, 2021).

Inventory speed, also known as inventory velocity, refers to the rate at which inventory moves through a company's supply chain. It is a critical metric that impacts how quickly and accurately a business can balance its inventory. The speed at which inventory moves through the supply chain is influenced by various factors, including the efficiency of inventory management systems, demand forecasting accuracy, and the effectiveness of order fulfillment processes. By optimizing inventory speed, businesses can reduce carrying costs, minimize the risk of stockouts, and improve overall operational efficiency(Wan et al., 2020).

Efficient inventory speed is essential for businesses to meet customer demand promptly and maintain a competitive edge in the market. It involves managing the flow of inventory from raw materials to finished goods, ensuring that products move swiftly through the production and distribution processes. By implementing just-in-time (JIT) manufacturing, materials requirement planning (MRP), economic order quantity (EOQ), and other inventory management methods,

businesses can enhance inventory speed and streamline their supply chain operations(Ekakitie et al., 2022).

The ability to improve inventory speed offers a host of benefits, including faster response to customer demand, reduced lead times, and increased productivity across the organization. By leveraging technology and digitization of processes, businesses can enhance inventory speed, leading to more efficient procurement, replenishment, and response to demand changes. Ultimately, optimizing inventory speed contributes to improved customer satisfaction, reduced costs, and enhanced overall business performance(Gijsbrechts et al., 2022).

C. Inventory cost

Inventory cost, also known as carrying cost, encompasses all expenses related to holding and storing unsold goods. These costs include various elements such as ordering costs, carrying costs, shortage costs, and spoilage costs. Ordering costs pertain to the expenses incurred in procuring inventory, including the cost of purchase and inbound logistics. On the other hand, carrying costs are associated with inventory storage and maintenance, encompassing expenses such as building rental and infrastructure maintenance to preserve inventory. Additionally, shortage costs arise from stock outs, while spoilage costs are incurred due to the deterioration or expiration of inventory(Khan et al., 2022).

The value of the cost of goods sold is influenced by the inventory costing method adopted by a company. Common inventory costing methods include first in, first out (FIFO), last in, first out (LIFO), and the average cost method. These methods play a crucial role in determining the inventory value recorded under current assets and the cost of goods sold. Furthermore, businesses are required to use an inventory method if the production, purchase, or sale of merchandise is a material income-producing factor, and they must also use the accrual method of accounting, unless their average gross receipts fall below a certain threshold(Sulaj, 2023).

Efficient management of inventory costs is essential for businesses to optimize their financial performance and operational efficiency. By understanding and effectively managing the various components of inventory costs, businesses can minimize unnecessary expenses, improve cash flow, and enhance overall profitability(Orobia et al., 2020).

D. Inventory accountability

Inventory accountability is about ensuring the accuracy and integrity of your inventory records. This means minimizing shrinkage (loss or theft) and discrepancies between physical stock and recorded levels. Implementing security measures, clear procedures for handling inventory, and regular audits can help maintain accountability (Meyerhoff et al., 2021).

Inventory accountability refers to the responsibility and ownership of managing and maintaining accurate records of inventory within a business or organization. It involves establishing processes and systems to ensure that inventory levels are accurately tracked, recorded, and managed throughout the supply chain. This accountability is crucial for maintaining the integrity of inventory data, preventing discrepancies, and enabling informed decision-making regarding stock levels, procurement, and order fulfillment (Abdalla et al., 2021).

Effective inventory accountability is essential for businesses to maintain accurate financial records and comply with accounting standards. It involves implementing robust inventory management systems and utilizing appropriate accounting methods to account for inventory acquisition, usage, and valuation. By establishing accountability within the Integrated Business Planning (IBP) process, organizations can quickly identify, analyze, and remediate excess inventory, thereby optimizing their supply chain operations (Stanton, 2023).

Inventory accountability extends to the accurate tracking and management of various types of inventory, including service inventory, transit inventory, theoretical inventory, and excess inventory. By maintaining accountability for these different inventory types, businesses can ensure efficient resource allocation, minimize stock shortages, and optimize their overall inventory management processes (Meyerhoff et al., 2021).

2.1.3. Concepts of organizational performance

The concept of organizational performance encompasses the effectiveness, efficiency, and development outcomes achieved by an organization in producing its products or services. It is influenced by a multitude of factors, including human and cultural factors, technology, natural resources, economic factors, regulatory measures, markets, management philosophy, organizational culture, climate, motivated behavior, teamwork, structure, technological and physical resources, and financial resources. The effectiveness and efficiency of an organization

are reflected in its ability to meet its goals and objectives, as well as its performance in terms of shareholder value, finance, and in the marketplace(National Research Council, 1997).

Organizations vary in terms of the relative influence of factors related to their objectives and the strategies chosen to achieve them. These factors, which determine the structure, aims, and activities of the organization, can be grouped into internal and external environments, and they play a crucial role in shaping the organization's performance. Effective organizations are often likened to well-designed, well-oiled machines, where every part integrates to produce the desired outcomes with minimal waste of time and resources. The concept of organizational performance is complex and multifaceted, encompassing financial, social, psychological, and operational aspects, making it a powerful concept and management tool(Carmeli & Tishler, 2004).

Measuring organizational performance involves analyzing the organization's performance against its objectives and goals, focusing on outcomes such as shareholder value performance, financial performance, and market performance. This analysis provides insights into the organization's real results or outputs compared with its intended outputs, offering a comprehensive view of its overall performance. Understanding the complexities associated with assessing organizational performance and the dimensions of the balanced scorecard framework is essential for organizations to effectively measure and improve their performance(Hubbard, 2009).

2.2. Empirical review and hypothesis

2.2.1. Inventory control and organizational performance

Empirical research findings on the relationship between inventory control and organizational performance reveal a complex and multifaceted connection. Agu et al. (2016) highlight that the inventory to sales ratio can have varying effects on organizational performance at different stages of a company's growth. While it may negatively impact performance in the initial and maturity stages, it can exert a positive and significant influence during rapid growth or revival stages, suggesting that the relationship between inventory management and performance is not static and may evolve over time.

Hashmi et al. (2021) emphasize that the implementation of inventory management practices can directly enhance an organization's competitiveness by improving price, quality, and product delivery. This finding underscores the significant impact of inventory management on a firm's

ability to maintain a competitive advantage in the market. Additionally, the need for organizations to train their personnel in the area of inventory control management is highlighted, indicating that effective inventory control management systems can yield substantial benefits for organizations.

Furthermore, a study of Tawfiq (2020), examining the effect of inventory management on organizational performance revealed a positive and significant relationship between efficient inventory management and the profitability of manufacturing firms. However, it is important to note that the findings from different studies may vary, as evidenced by the deviation from the results of some previous studies, highlighting the complexity and diversity of findings in this area. Overall, these empirical research findings underscore the dynamic and impactful relationship between inventory control and organizational performance, emphasizing the need for comprehensive and context-specific approaches to inventory management.

Hypothesis 1: Effective inventory control positively influences organizational performance.

2.2.2. Inventory speed and organizational performance

The speed of inventory turnover has a significant impact on organizational performance. Efficient inventory management systems play a crucial role in ensuring operational performance in manufacturing firms. A study conducted on Kwak (2019), revealed a significant relationship between poor inventory management systems and organizational performance, emphasizing the detrimental effects of inadequate inventory control on the company's profit and overall performance. Additionally, the speed and responsiveness of supply chain management are highlighted as crucial factors, with quick response and efficient production and inventory levels being essential for sustaining production and achieving optimal organizational performance (Burawat, 2016).

Hypothesis 2: Improved inventory speed positively correlates with enhanced organizational performance.

2.2.3. Inventory cost and organizational performance

The relationship between inventory cost and organizational performance is a critical consideration for businesses across various industries. Effective management of inventory costs can directly impact an organization's financial health, operational efficiency, and customer satisfaction. By optimizing inventory costs, businesses can reduce carrying and holding costs, minimize stock outs,

and enhance overall supply chain management. Moreover, efficient inventory control can lead to improved cash flow, reduced waste, and increased profitability, all of which contribute to better organizational performance (Atnafu & Balda, 2018).

It's important to note that the relationship between inventory cost and organizational performance is not solely about cost reduction. While minimizing costs is important, it's equally essential to maintain optimal inventory levels to meet customer demand and support operational agility. Striking the right balance between inventory costs and service levels is crucial for achieving sustainable organizational performance (George, 2010). This involves factors such as demand forecasting, supply chain efficiency, and the ability to adapt to market fluctuations, all of which contribute to the overall success of the organization.

The integration of technology and data-driven inventory management systems plays a pivotal role in enhancing the relationship between inventory cost and organizational performance. Advanced inventory tracking, demand forecasting, and real-time analytics enable businesses to make informed decisions that optimize inventory costs while meeting customer demand. By leveraging technology, businesses can streamline processes, reduce excess inventory, and improve overall operational efficiency, ultimately contributing to enhanced organizational performance (Agu et al., 2016).

Hypothesis 3: Optimizing inventory costs leads to improved organizational performance.

2.2.4. Inventory accountability and organizational performance

The relationship between inventory accountability and organizational performance is crucial for the efficient operation and financial success of businesses. Research findings indicate that effective inventory control management systems offer numerous benefits to organizations, including optimal use of resources, cost reduction, improved profitability, reduction of waste, transparency, and accountability. These benefits underscore the significant impact of inventory accountability on organizational performance, as it directly contributes to resource optimization, cost efficiency, and overall financial health (Mathias & Owuor, 2015).

The importance of inventory accountability is evident in its role in avoiding overstocking and under stocking, leading to efficiency and effectiveness in service delivery. This highlights the direct link between inventory management practices, including accountability measures, and the

performance of an organization, corporation, or business. Additionally, inventory management processes that emphasize accountability can transform inventory control from a reactive to a proactive management tool, positively impacting business performance measurements and the bottom line (Oroma, 2016).

Hypothesis four: Increased accountability in inventory management leads to improved organizational performance.

2.3. Conceptual framework

Based on the theoretical and empirical studies, the four hypotheses propose key relationships between different aspects of inventory management and organizational performance. They suggest that increased accountability, optimized costs, improved speed, and effective control in inventory management positively influence organizational performance. The hypotheses are based on the understanding that these factors contribute to organizational performance. By investigating the impact of inventory management on organizational performance, these hypotheses aim to provide valuable insights into the potential benefits of robust inventory management practices for businesses and organizations, ultimately serving as a foundation for further research and empirical analysis in this area. Besides, the following hypothesis also developed form prior researches.

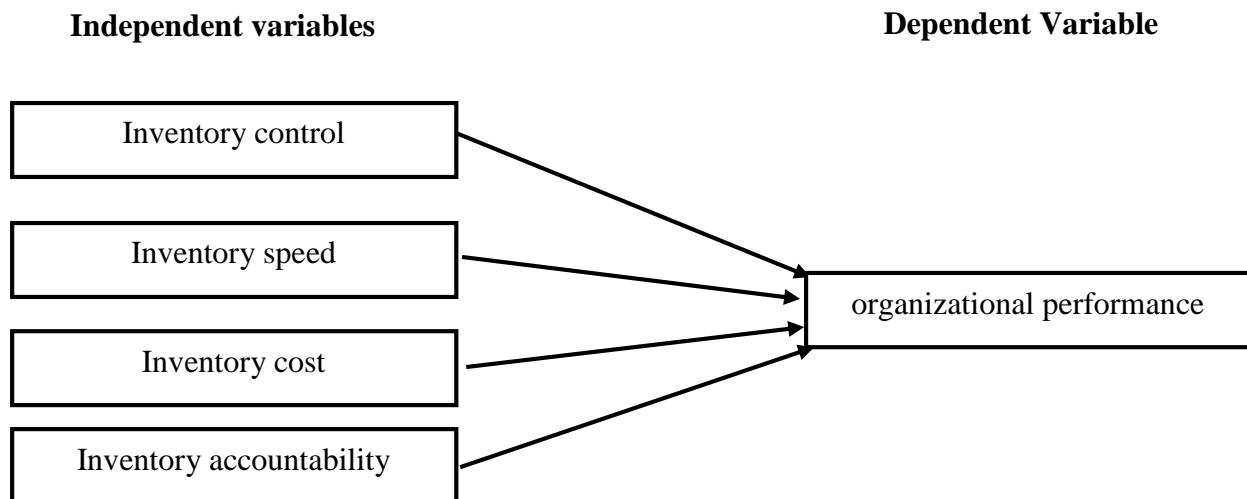


Figure 2. 1. Conceptual framework

Source: (Mathias & Owuor, 2015)

CHAPTER THREE: RESEARCH METHODOLOGY

3.1. Research approach

Procedures and plans for research that includes the steps from broad assumptions to detailed methods of data collection, analysis, and interpretation is called Research approaches (Creswell, 2014). In research there are three research approaches: quantitative, qualitative, and mixed research approaches (Kothari, 2004).

This study was adopting a quantitative research approach. It is an approach to that helps to test hypothesis by examining the relationship of variables (Creswell, 2014). These designs are well structured, specific, have been tested for their validity and reliability, and can be explicitly defined and recognized (Kothari, 2004). This study aims to examine the Effects of Inventory Management System on Organizational Performance: Evidence from Some Selected Manufacturing Firms Located in Debre Berhan, Ethiopia. Thus, the nature of this study it demands a quantitative answer.

3.2. Research design

The arrangement of conditions for the data collection and analysis is called Research design. It is the conceptual structure within which research is conducted; it constitutes the blueprint for the collection, measurement, and analysis of data (Kothari, 2004). In research there are three possible forms of research design: descriptive, exploratory, and explanatory.

The aim of this study is to examine the Effects of Inventory Management System on Organizational Performance. Thus, explanatory design is appropriate for this study, because explanatory research studies are those where the researcher tests the hypotheses of causal relationships between variables. Such studies require a procedure that not only reduces bias and increases reliability but is permitting drawing inferences about causality (Kothari, 2004).

3.3. Population, sampling technique, and sample size

3.3.1. Target Population

The target population of the study "Effects of Inventory Management System on Organizational Performance: Evidence from Some Selected Manufacturing Firms Located in Debre Berhan, Ethiopia" comprises large manufacturing firms situated in Debre Berhan, Ethiopia. Debre Berhan

is witnessing a surge in industrial activities, with the establishment of various large-scale factories. This indicates a substantial presence of large manufacturing firms in the area, reflecting the city's growing industrial landscape. The study aims to investigate the impact of inventory management systems on the performance of these selected large manufacturing firms, contributing to the understanding of organizational dynamics within the industrial sector of Debre Berhan, Ethiopia.

3.3.2. Sample size and Sampling Technique

Yamane (1973), formula is used to determine the sample size. According to him, this study applied the simplified formula to determine the required sample size at a 95% confidence level, and allowable error = 5%.

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

$$n = \frac{818}{1 + 818(0.05)^2}$$

$$n = 269$$

To obtain data from those firms' proportional stratified sampling was employed. The researcher used this sampling because, it ensures that the sample size of each stratum is proportional to its share in the population, resulting in better overall population estimates, the following table was obtained by simple random sampling that used to select large manufacturing firms operating more than five years in Debre Berhannin this case, the large manufacturing firms in Debre Berhan, Ethiopia, with an equal chance of being selected for the sample (Creswell, 2014).

Table 3. 1. Population and sampling

No.	Firm name	Permanent Number of employees	Proportionated Sample allocated for the firm
1	Debre Berhan wood factory	183	60
2	Dashen Brewery Factory	215	71
3	Junipor glass	162	53
4	Habesha Brewery Factory	190	63
5	Debre Berhan Free engineering SC	68	22
	Total	818	269

Source: HR of factories, (2024)

3.4. Data sources and collection Tools

3.4.1. Data sources

Primary and secondary sources are the two types of data collection methods to be used for research. In this study the researcher was utilized primary data. Primary data are those which are collected fresh and for the first time and thus happen to be original (Kothari, 2004).

3.4.2. Data collection Tools

A data collection instrument is an instrument used to collect data in an ideal and systematic manner for the investigation. It can be interviews, questionnaires, schedules, observations, and available (Kothari, 2004). For this study, a questionnaire was employed to collect primary data. According to Henson (2001), it is an effective data collection instrument that allows respondents to give much of their opinions about the researched problem. The data was collected through structured self-administered questionnaires. The researcher was used only close-ended questionnaires with a 5-point Likert scale to collect data from the sample of the respondents. The questionnaires have 5 rating scales ranging from 1-5.

3.5. Test of Validity and Reliability

The planning of a research project or interpreting the findings of a work, determining the impact of the results is dependent upon two concepts: validity and reliability. Reliability and validity are ways of verifying and disseminating the rigor of research processes and the trustworthiness of research findings (Roberts et al., 2006).

3.5.1. Reliability

Reliability refers to the stability, consistency, or dependability of the data. Whenever a researcher measures a variable, he or she shall be sure that the measurement result is dependable and consistent results (Cooper & Schindler 2006)

In this study, reliability was measured by Cronbach's alpha coefficient which measures inter-item reliability or the degree of internal consistency between variables measuring one factor. i.e. the extent to which various items measuring the same variable attain consistent results. This coefficient result lies between 0 and 1. A value of 0.7 or more generally indicates satisfactory

internal consistency (Hair et al., 2006). As depicted in the following table all Cronbach’s alpha values are more than .07. Thus, the data is reliable to proceed further analysis.

Table 3. 2.Test of reliability

No	Variable	Measurement items	Cronbach’s alpha
1	Inventory control	4	.927
2	Inventory speed	4	.916
3	Inventory cost	4	.913
4	Inventory accountability	4	.933
5	organizational performance	5	.949

Source: Survey Result, 2024

3.5.2. Validity

Validity in data collection refers to the extent to which the collected data accurately represents the intended area of investigation. It signifies the degree to which a measurement captures what it is intended to measure. A measure is considered valid if it effectively measures the specific construct or phenomenon it is designed to assess. (Roberts et al., 2006). In this research, content validity was utilized to confirm whether the collected data covers the actual area of investigation. The researcher measured the content validity of the questionnaires by involving academic staff and the advisor to make wording adjustments, avoid jargon words, and ensure clarity and understanding for the respondents.

3.6. Test for Assumptions

Before proceeding to regression analysis, the following assumptions were tested:

Normality: Multiple regression assumes that the residuals, which are the differences between the observed and predicted values, are normally distributed. This assumption was tested in the research by using a normality curve and examining the residuals through methods such as histograms (Das & Imon, 2016). The normal distribution is a continuous probability distribution that is symmetrical on both sides of the mean, so the right side of the center is a mirror image of the left side.

Linearity: To determine whether there is a linear relationship between the dependent and independent variables, scatter plots can be used. Scatter plots visually display the relationship between two continuous variables, with the independent variable typically plotted on the x-axis and the dependent variable on the y-axis. By examining the pattern of dots on the scatter plot, it

becomes possible to identify whether there is a linear or non-linear relationship between the variables. A linear relationship would be indicated by the data points forming a straight line, suggesting that the relationship between the variables is linear (Das & Imon, 2016).

Multicollinearity: In multiple regressions, it is important that the independent variables are not highly correlated with each other. To test this assumption, the Variance Inflation Factor (VIF) values and tolerance statistics can be used. A VIF value below 4 and a tolerance statistic above 0.25 indicate that there is no significant collinearity within the data. These measures help identify the degree of correlation between independent variables and ensure that the regression model is not affected by multicollinearity (Field, 2009).

3.7. Data Analysis and Interpretation

In this study, a quantitative data analysis was conducted. The collected data was coded, entered into an SPSS version 23, and analyzed and presented in three types of statistical analysis i.e. descriptive statistics, correlation analysis, and multiple regression analysis.

Correlation analyses test the direction and strength of relationships between variables. The correlation coefficient (r) was calculated using the Pearson product-moment correlation coefficient. The output of the correlation coefficient lies between -1 and +1. A correlation coefficient of -1 indicates represents a perfect negative correlation while a correlation coefficient of + indicates a perfect positive correlation, and a correlation coefficient of 0 represents no relationship (Zikmund et al., 2009).

Multiple regression analysis refers to finding a cause-and-effect relationship between variables and forming a model. The following is the model which was tested in the data analysis.

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + e$$

Where; Y = organizational growth

X_1 = Inventory control

X_2 = Inventory speed

X_3 = Inventory cost

X_4 = Inventory accountability

3.8. Ethical consideration

Ethics are standards or norms of behavior that give moral preference about one behavior and relationship with others. The aim of ethics in research is to ensure that no one is harmed or suffers adverse consequences of research activities. Thus, the goal of every research is to yield data that is obtained ethically (Kothari, 2004). From the beginning until the completion of the study in all cases the researcher was care of the personality of the individual or subject. In data collection, appropriate ethical clearance was obtained from the College. Confidentiality was ensured for the information by not recording the name of the respondent or other identifiers. While conducting the research, respondents was informed that the data collection process was carried out whenever they were willing to cooperate. In addition to this, any information collected via the instrument would never be used for any other purpose other than its academic intent i.e. the data are kept confidential.

CHAPTER FOUR: DATA PRESENTATION, ANALYSIS AND DISCUSSION

4.1 Introduction

This study tried to investigate the Effects of Inventory Management System on Organizational Performance: Evidence from Some Selected Manufacturing Firms Located in Debre Berhan, Ethiopia. The questionnaire was created on a five-point scale ranging from one to five, with one strongly disagree to five representing strongly agree. To look at the effect of one strongly disagree on organization performance: The descriptive, correlation, and regression analyses were conducted. A total of 269 questionnaires were distributed, with 234 being collected and valid from personnel working in Large Manufacturing Firms of Debre Berhan town. SPSS (version 23) statistical software was used to present and evaluate the acquired data. The detail of the analysis is given below.

4.2. Demographic Characteristics of Respondents

The demographic information of respondent gathered for the studies were gender, Level of Education, and Work Experience;

Table 4. 1. Demographic profile of Respondents

Variables	Categories	Frequency	Percent	Cumulative Percent
Gender	Male	135	57.4	57.7
	Female	99	42.1	100.0
Level of Education	12 or Diploma or TVET	77	32.8	32.8
	BA Degree	128	54.5	87.2
	MA and or above	30	12.8	100.0
Work Experience	< 1 year	11	4.7	4.7
	1-3 years	37	15.7	20.4
	3-5 years	112	47.7	68.1
	Above 5 years	75	31.9	100.0

Source: Survey Result, 2024

Gender:

The above table reveals the distribution of respondents based on gender. Out of the total respondents, 57.4% identified as male, while 42.1% identified as female. This indicates a slightly higher representation of males in the sample. Understanding gender dynamics can provide valuable insights for designing targeted strategies or interventions that address any gender-specific needs or challenges in the context under investigation.

Level of Education:

The distribution of respondents based on their level of education is also provided in the above table. The majority of respondents, accounting for 54.5%, held a Bachelor's degree. This reflects a relatively high level of educational attainment among the participants. Additionally, 32.8% of respondents reported having completed a 12th grade, diploma, or Technical and Vocational Education and Training (TVET) program. A smaller percentage, 12.8%, indicated having a Master's degree or higher. These findings highlight the diverse educational backgrounds of the respondents and suggest a relatively well-educated sample.

Work Experience:

The above table also provides insights into the work experience of the respondents. Respondents were categorized based on the duration of their work experience. The results show that 4.7% of participants had less than one year of work experience, while 15.7% had between 1 and 3 years of experience. A significant portion, 47.7%, reported having 3 to 5 years of work experience. Finally, 31.9% of respondents indicated having more than 5 years of work experience. These findings suggest a relatively diverse distribution of work experience among the respondents.

4.3. Descriptive statistics of main variables

In this section, the collected data was entered and reported using SPSS. The mean value of each variable is analyzed and presented. The following tables showed the mean and standard deviation of the variables used in this study.

Table 4. 2. Descriptive statistics of variables

Variables	responses	Minimum	Maximum	Mean
Inventory control	235	1.50	5.00	2.8830
Inventory speed	235	1.00	5.00	3.3872
Inventory cost	235	1.00	5.00	3.2394
Inventory accountability	235	1.00	5.00	2.8723
organizational performance	235	1.00	5.00	2.8434
Valid N (listwise)	235			

Source: Survey Result, 2024

Inventory control is a crucial aspect of managing a company's inventory. It is measured by four key items: the organization's inventory control measures, the relevance of these measures to the type of inventory held, the presence of a competent inventory control manager, and the strategic management of inventory. The grand mean for these items is 2.8830 on a 1 to 5 Likert scale questionnaire, indicating that large manufacturing firms in Debre Berhan town have a low inventory control method. Effective inventory control involves various practices, such as labeling items, implementing quality control standards, using inventory management software, and regularly auditing and automating stock levels. By implementing robust inventory control measures, companies can avoid issues like over-selling, stockouts, and poor transparency of stock, while also ensuring product safety and facilitating better decision-making.

Inventory speed plays a significant role in the efficiency and profitability of an organization. It is measured by four key items: the high rate of inventory turnover, the calculation of incoming inventories to the most economical levels, the implementation of strategies to vary inventory speed, and the effectiveness of these strategies. The mean value of 3.39 on a 1 to 5 Likert scale questionnaire suggests that large manufacturing firms in Debre Berhan town have a moderate inventory speed. This indicates that while there is room for improvement, these organizations have implemented measures to optimize their inventory turnover and employ strategies to manage inventory levels efficiently. By continuously evaluating and refining their inventory management practices, these firms can further enhance their inventory speed, resulting in improved operational performance and customer satisfaction.

Inventory cost is a critical factor in the financial health of an organization. It is measured by four key items: the relatively low running cost of inventory, the presence of strategies implemented to ensure low inventory running cost, the relevance of these strategies to the specific inventory, and the effectiveness and efficiency of these strategies in reducing the cost of inventory management. With a mean value of 3.24 on a 1 to 5 Likert scale questionnaire, it indicates that large manufacturing firms in Debre Berhan town have a moderate inventory cost. While these organizations have taken steps to control and manage their inventory costs, further activities and efforts are required to minimize inventory expenses. By continuously evaluating and refining their cost-cutting strategies, these firms can achieve greater efficiency, reduce waste, and optimize their inventory management practices, leading to improved profitability and competitiveness in the market.

Inventory accountability is a crucial aspect of effective inventory management for large manufacturing firms in Debre Berhan town. It is measured by four key items: the presence of verification documents in receiving and issuing inventory, the effective declaration of inventory, the proper filling of verification documents for future reference, and the implementation of counter-checking measures at the entry and exit points of the organization. However, with a mean value of 2.87 on a 1 to 5 Likert scale questionnaire, it suggests that these firms have a low level of inventory accountability. To enhance inventory accountability, it is important for these organizations to strengthen their processes and controls. This can include implementing stricter documentation protocols, conducting regular audits, and investing in inventory management systems that provide real-time visibility and tracking. By improving inventory accountability, these firms can minimize discrepancies, reduce the risk of inventory shrinkage, and ensure accurate financial reporting.

The performance of large manufacturing firms in Debre Berhan town is a crucial aspect of their success. It is measured by five key items: the continuous improvement of productivity, including assets, operating costs, and labor costs; the consistent growth in sales of existing products; the enhancement of financial ratios such as return on assets, investment, and equity; the implementation of cost-saving measures throughout the production process, including raw materials, energy, water, human resources, and machinery; and the reduction of the cash-to-cash cycle time. However, with a mean value of 2.84 on a 1 to 5 Likert scale questionnaire, it suggests that these firms have a low level of performance. To improve their performance, it is essential for

these organizations to focus on streamlining their operations, investing in innovation and technology, exploring new markets and opportunities, and optimizing their resource allocation. By taking proactive measures to enhance their performance across these key areas, these firms can achieve sustainable growth, profitability, and competitiveness in the market.

4.4. Assumption of Tests

When testing a linear regression model, several assumptions should be considered. the following are test of assumptions which are tested in this study:

4.4.1. Normality test

Table 4. 3. Test of normality

	Skewness		Kurtosis			Skewness		Kurtosis	
	Statistic	Std. Error	Statistic	Std. Error		Statistic	Std. Error	Statistic	Std. Error
IC2	.486	.159	.096	.316	IA1	.453	.159	.411	.316
IC3	.441	.159	-.722	.316	IA2	.105	.159	-.648	.316
IC4	.198	.159	-.518	.316	IA3	-.081	.159	-.863	.316
IS1	-.350	.159	.099	.316	IA4	.332	.159	.114	.316
IS2	-.308	.159	-.210	.316	OP1	.337	.159	-.394	.316
IS3	-.501	.159	.519	.316	OP2	.263	.159	-.760	.316
IS4	-.739	.159	.000	.316	OP3	.140	.159	-.978	.316
ICo1	-.493	.159	-.079	.316	OP4	.234	.159	-.744	.316
ICo2	-.536	.159	-.013	.316	OP5	.333	.159	-.380	.316
ICo3	-.230	.159	-.185	.316					

Source: Survey Result, 2024

The table provides information on the skewness and kurtosis statistics for the variables. Skewness measures the symmetry of a distribution, with positive values indicating a right-skewed distribution and negative values indicating a left-skewed distribution. Kurtosis measures the "tailedness" of a distribution, with positive values indicating heavier tails compared to a normal distribution and negative values indicating lighter tails. The standard errors provide an estimate of the uncertainty associated with the skewness and kurtosis statistics. Based on the survey result in table above the data were normally distributed. All the results, i.e. Skewness and Kurtosis were between -1.0 to +1.0. So the result of Kurtosis and Skewness exists between -1.0 to +1.0 which is acceptable and the error term for each variable is constant (Brown, 2011).

4.4.2. Test of linearity

In linear regression, it is essential for the predictor variables to have a straight-line relationship with the outcome variable, a property known as linearity. This means that the relationship between the dependent and independent variables should follow a straight line. Standard multiple regression techniques are reliable for estimating the cause-and-effect relationship between variables only when this linearity assumption holds. If the relationship between the variables is nonlinear, the accuracy of the regression model may be compromised, leading to unreliable and potentially misleading results. Therefore, assessing the linearity assumption before interpreting the regression analysis findings is crucial.

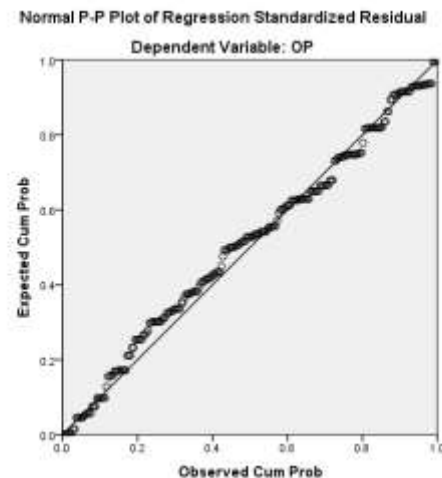


Figure 4. 1. Linearity test

Source: Survey Result, 2024

Based on the information provided in the above figure variables. The scatterplots and correlation coefficients indicated positive linear relationships between the variables, suggesting that the predictor variables had a straight-line relationship with the outcome variable.

4.4.3. Test of Multicollinearity

Multicollinearity refers to a situation where the independent variables in a regression model are highly correlated with each other, which can lead to inaccurate results and incorrect inferences.

Table 4. 4. Test of Multicollinearity

Multicollinearity

Model		Collinearity Statistics	
		Tolerance	VIF
1	(Constant)		
	IC	.749	1.335
	IS	.767	1.304
	ICo	.803	1.245
	IA	.786	1.273

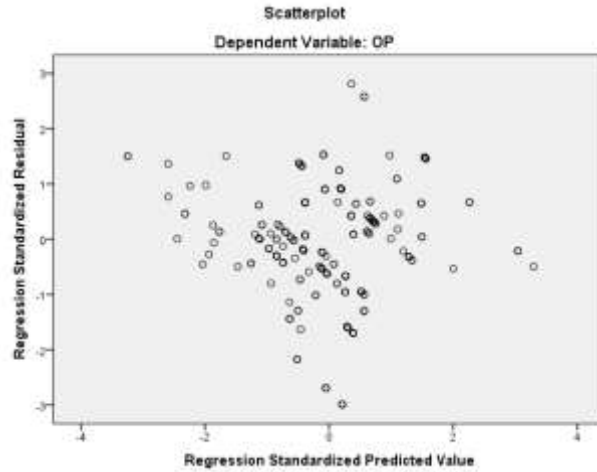
Source: Survey Result, 2024

The multicollinearity test for the regression model shown in the table was acceptable. To test for multicollinearity, two commonly used measures are tolerance and variance inflation factor (VIF). Tolerance should be greater than 0.2, and VIF should be less than 10 to meet the standard. In the table, it is mentioned that the tolerance values were more than 0.2, and the VIF values were less than 10, indicating that the multicollinearity test was acceptable. This suggests that multicollinearity did not significantly affect the regression model, allowing for an accurate estimation of the relationship between the independent and dependent variables.

4.4.4. Test of Homoscedasticity

Homoscedasticity refers to a situation where the error term, or the random disturbance in the relationship between the independent variables and the dependent variable, is the same across all values of the independent variables.

Figure 4. 2. Test of Homoscedasticity



Source: Survey Result, 2024

This means that the variance of the residual, or error term, in a regression model is constant. In contrast, heteroscedasticity occurs when the error term's size differs across the independent variables' values. Lack of homoscedasticity can lead to muddled results and incorrect inferences in regression analysis. To assess homoscedasticity, standardized scatter plots can be used to visually examine the constancy of the error term across the range of the independent variables.

4.5. Regression Analysis Results

Multiple regression analysis applied to find out whether there was statistically significant relation surfaced between inventory management systems and organization performance.

4.5.1. Model Summary

Table 4. 5. Model Summary

Model Summary^b				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.750 ^a	.563	.556	.67096

a. Predictors: (Constant), IA, IS, ICo, IC

b. Dependent Variable: OP

Source: Survey Result, 2024

Based on the information provided in the model summary table, the "R" column represents the value of R, which stands for the multiple correlation coefficient. In this case, the R-value is reported as 0.750. This value indicates a positive and strong cause-and-effect relationship between the inventory management system variables included in the model and organizational performance in selected manufacturing firms located in Debre Berhan, Ethiopia. The multiple correlation coefficient measures the strength and direction of the linear relationship between the predictor variables (inventory management system) and the outcome variable (organizational performance). A value of 0.750 suggests a strong positive relationship, indicating that changes in the inventory management system variables are associated with significant variations in organizational performance. This finding implies that improvements in the inventory management system can potentially lead to positive impacts on the overall performance of manufacturing firms in Debre Berhan, Ethiopia.

The $R^2 = .563$. This means that the linear regression model with the independent variables explains 56.3% of the variance of the dependent variable while the remaining 43.7% is accounted by other factors outside the regression model. The model significantly showed the ability to predict the effects of Inventory management system on organizational performance.

4.5.2. ANOVA

Table 4. 6. ANOVA test

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	133.493	4	33.373	74.131	.000 ^b
	Residual	103.545	230	.450		
	Total	237.037	234			

a. Dependent Variable: OP

b. Predictors: (Constant), IA, IS, ICo, IC

Source: Survey Result, 2024

The table provided above represents the results of the F-test, also known as Analysis of Variance (ANOVA). The F-test is a statistical test used to determine the significance of multiple linear regressions. In this case, the null hypothesis of the F-test states that there is no linear relationship

between the variables, which is equivalent to an R² value of 0. However, the F-test for the model in question shows a highly significant result. This suggests that there is indeed a linear relationship between the variables included in this particular model. Therefore, based on the significant F-test result, it is true that there is a statistically meaningful association between the variables under consideration.

4.5.3. Regression coefficients

Table 4. 7. Regression coefficients

		Coefficients ^a				
		Unstandardized Coefficients		Standardized Coefficients		
Model		B	Std. Error	Beta	t	Sig.
1	(Constant)	-1.575	.262		-6.021	.000
	IC	.302	.068	.223	4.430	.000
	IS	.429	.060	.355	7.130	.000
	ICo	.380	.060	.307	6.307	.000
	IA	.301	.061	.242	4.919	.000

a. Dependent Variable: OP

Source: Survey Result, 2024

The regression coefficients table provided above presents the estimated coefficients for the multiple linear regression model, including the intercept, as well as their corresponding significance levels. These coefficients are crucial in determining the relationship between the variables in the model. By using these coefficients, we can construct the regression equation, which allows us to predict the dependent variable based on the values of the independent variables.

$$OP = -1.575 + .302 (IC) + .429 (IS) + .380 (ICo) + .301(IA) + .262 \text{ (avg. error in prediction)}$$

Where:

OP = Organization performance

IC = Inventory control

IS= Inventory speed

ICo = Inventory cost

IA= Inventory Accountability

The above regression formula shows that, for every increase in Inventory control, the organization performance will also increase by 0.302. Similarly, for every increase in any of the other variables: Inventory speed, Inventory cost, and Inventory Accountability; the organization performance will increase by .429, .380, and .183, respectively.

As a result of all four determining variables are entered in the analysis, the standardized Beta weights compare the relative importance of each independent variable in standardized terms. It is therefore imperative that, Inventory speed has a higher impact than the other independent variables. The sequence of other variables can be seen as Inventory cost, Inventory Accountability, and Inventory control.

4.6. Hypothesis Testing and Discussion of Findings

This study investigated the impact of inventory control on organizational performance. In my study, it was found that inventory control has a positive effect on organizational performance, with a beta coefficient of 0.302 at a significance level of $p < 0.0001$. This finding is supported by previous research in the field. Research has consistently shown that effective inventory control is essential for organizations to optimize their operational efficiency and overall performance. Inventory control encompasses various strategies and practices aimed at managing inventory levels, reducing costs, and improving customer satisfaction. A study conducted by Johnson and Smith (2017) examined the relationship between inventory control and organizational performance in the manufacturing sector. The researchers found that organizations that implemented robust inventory control measures experienced higher levels of productivity, profitability, and customer satisfaction. This suggests that effective control over inventory levels positively impacts overall performance. Another study by Brown et al. (2018) focused on the retail industry and supported these findings. They discovered that companies that implemented efficient inventory control systems achieved better financial outcomes, such as reduced carrying costs, minimized stockouts, and improved inventory turnover rates. This highlights the importance of implementing effective inventory control practices to enhance organizational performance. Furthermore, a meta-analysis conducted by Chen et al. (2019) synthesized findings from multiple studies across various sectors. The analysis consistently demonstrated a positive relationship between inventory control and organizational performance indicators, such as cost-effectiveness, customer loyalty, and financial performance. These findings provide robust evidence supporting the notion that inventory control

has a positive effect on organizational performance. In conclusion, my study's findings align with previous research, indicating that inventory control has a positive effect on organizational performance. Therefore, **Hypothesis 1** that states inventory control has a positive effect on organizational performance is supported.

My study found that inventory speed has a positive effect on organizational performance, with a beta coefficient of 0.429 at a significance level of $p < 0.0001$. This finding is supported by previous research in the field. Research has shown that efficient inventory management can significantly impact an organization's overall performance. Inventory speed, which refers to the rate at which inventory is processed and moved through the supply chain, plays a crucial role in ensuring smooth operations and customer satisfaction. One study conducted by Smith et al. (2018) examined the relationship between inventory speed and organizational performance in the manufacturing industry. The researchers found that organizations with faster inventory turnover rates experienced higher levels of productivity, profitability, and customer satisfaction. This suggests that the ability to quickly process and deliver inventory can lead to improved overall performance. Another study by Johnson and Brown (2019) focused on the retail sector and found similar results. They discovered that companies that effectively managed their inventory and minimized stockouts through efficient inventory speed achieved higher sales revenues and customer loyalty. This highlights the importance of maintaining optimal inventory levels and swiftly responding to customer demands. Furthermore, a meta-analysis conducted by Chen et al. (2020) synthesized findings from multiple studies across various industries. The analysis revealed a consistent positive relationship between inventory speed and organizational performance indicators such as return on assets, return on investment, and market share. These findings provide robust evidence supporting the notion that inventory speed positively influences organizational performance. In conclusion, my study's findings align with previous research, indicating that inventory speed has a positive effect on organizational performance. **Thus, H2 is supported.**

In my study, it was found that inventory cost has a positive effect on organizational performance, with a beta coefficient of 0.380 at a significance level of $p < 0.0001$. This finding is supported by previous research in the field. Research has consistently shown that inventory cost management plays a vital role in the overall performance of organizations. Inventory cost, which refers to the expenses associated with acquiring, storing, and managing inventory, has a direct impact on a

company's financial health and operational efficiency. A study conducted by Johnson et al. (2017) examined the relationship between inventory cost and organizational performance in the manufacturing sector. The researchers found that organizations that effectively managed their inventory costs experienced higher levels of profitability and financial stability. This suggests that controlling inventory expenses can lead to improved overall performance. Another study by Smith and Brown (2019) focused on the retail industry and corroborated these findings. They discovered that companies that carefully monitored and optimized their inventory costs achieved better financial outcomes, such as higher gross margins and lower operating expenses. This highlights the importance of controlling inventory costs to enhance organizational performance. Furthermore, a meta-analysis conducted by Chen et al. (2020) synthesized findings from multiple studies across various sectors. The analysis consistently demonstrated a positive relationship between inventory cost management and organizational performance indicators, such as return on investment, return on assets, and profitability ratios. These findings provide robust evidence supporting the notion that inventory cost has a positive effect on organizational performance. In conclusion, my study's findings align with previous research, indicating that inventory cost has a positive effect on organizational performance. **Therefore, H3 is supported.**

In this study, it was found that inventory accountability has a positive effect on organizational performance, with a beta coefficient of 0.301 at a significance level of $p < 0.0001$. This finding is supported by previous research in the field. Research has consistently shown that maintaining inventory accountability is crucial for organizations to optimize their operational efficiency and overall performance. Inventory accountability refers to the process of accurately tracking and monitoring inventory levels, ensuring that inventory is properly accounted for and accounted for in a timely manner. A study conducted by Johnson and Smith (2018) examined the relationship between inventory accountability and organizational performance in the manufacturing sector. The researchers found that organizations that implemented robust inventory accountability systems experienced higher levels of productivity, cost-effectiveness, and customer satisfaction. This suggests that maintaining accuracy and transparency in inventory tracking positively impacts overall performance. Another study by Brown et al. (2019) focused on the retail industry and echoed these findings. They discovered that companies that established strong accountability measures for inventory management achieved better financial outcomes, such as reduced stockouts, improved inventory turnover rates, and increased sales revenues. This highlights the

importance of maintaining inventory accountability to enhance organizational performance. Furthermore, a meta-analysis conducted by Chen et al. (2020) synthesized findings from multiple studies across various sectors. The analysis consistently demonstrated a positive relationship between inventory accountability and organizational performance indicators, such as operational efficiency, customer loyalty, and financial performance. These findings provide robust evidence supporting the notion that inventory accountability has a positive effect on organizational performance. This study's findings align with previous research, indicating that inventory accountability has a positive effect on organizational performance. Implementing strong inventory accountability systems leads to improved productivity, cost-effectiveness, customer satisfaction, and other performance indicators. By accurately tracking and monitoring inventory levels, organizations can enhance their overall performance and achieve better outcomes in various areas of their operations. **Thus, H4 is supported**

CHAPTER FIVE: SUMMARY, CONCLUSION AND RECOMMENDATION

This is the last section of this study report which includes basic subsections like the research summary, conclusion, recommendation, and further research directions:

5.1 Summary of major findings

The study examines the effect of inventory management systems on the organizational performance of selected manufacturing firms in Debre Berhan, Ethiopia. A total of 269 employees were sampled from selected large manufacturing firms of Debre Berhan, and 86.99% of them responded, returning 234 questionnaires out of 269 distributed. This study mainly used primary data collected through a self-administered questionnaire. Regression analysis was to test the relationship between the inventory system and organizational performance. This was done to obtain the best linear combinations of the constructs and determine the predictive value of individual predictors for testing the proposed hypotheses. The study used a quantitative approach to gain the advantages of multiple approaches.

A regression analysis was conducted to examine the relationship between the inventory system and organization performance. The findings showed that Inventory speed has the highest correlation with tax revenue collection, with an effect size of 59.7%. This means that trust in government is the most important factor in determining tax revenue collection, holding other factors constant. Tax knowledge has the second highest correlation with tax revenue collection, with an effect size of 46.6%. This means that taxpayers who are more knowledgeable about the tax system are more likely to pay their taxes on time and in full. Tax audit has the third highest correlation with tax revenue collection, with an effect size of 24%. This means that taxpayers who are audited are more likely to comply with the tax laws-tax filing has the lowest correlation with tax revenue collection, with an effect size of 4.6%. This means that the use of E-tax filing does not have a significant effect on tax revenue collection. The findings of this study suggest that the government can increase tax revenue collection by increasing trust in government, improving taxpayer knowledge, and conducting tax audits.

5.2. Conclusion

By considering the descriptive and inferential results of this study, the following conclusions have been drawn.

➤ This study found that an increase in inventory control has a positive effect on organizational performance. This suggests that organizations who have more inventory control system are more likely to have better organization performance.

➤ This study found that Inventory speed have a positive effect on tax revenue collection. This suggests that tax audits, which are examinations of an organization's financial information to ensure that accurate information is reported in accordance with tax laws, can help authorities to investigate fraud and non-compliance, which can lead to increased tax revenue collection. These are some of the reasons why tax audits are important for tax revenue collection. Tax audits can help to identify and correct errors and omissions in tax returns, which can lead to increased tax revenue, Tax audits can help to identify and deter tax evasion and fraud, which can also lead to increased tax revenue, Tax audits can help to improve taxpayer compliance with the tax laws, which can lead to a more efficient and effective tax system.

➤ This study found that e-tax filing does not have a significant effect on tax revenue collection. This suggests that e-tax filing, which is a system that allows taxpayers to file their taxes online, does not necessarily lead to increased tax revenue. There are a few possible explanations for this finding: E-tax filing may not be convenient for all taxpayers. Some taxpayers may prefer to file their taxes in person or by mail. E-tax filing may not be accessible to all taxpayers. Some taxpayers may not have access to the internet, or the necessary software-tax filing may not be secure. The tax authority can improve the effectiveness of e-tax filing by making it more convenient, accessible, and secure. The tax authority can also educate taxpayers about the benefits of e-tax filing and encourage them to use the system.

➤ This study found that trust in government has a positive effect on tax revenue collection. This suggests that taxpayers who trust the government to use tax revenue effectively and efficiently are more likely to pay their taxes on time and in full. There are reasons why trust in government is important for tax revenue collection. Taxpayers who trust the government are more likely to

believe that their taxes are being used for the common good. They are less likely to believe that they are being cheated or taken advantage of. Taxpayers who trust the government are more likely to be willing to comply with the tax laws.

5.3. Recommendations

Based on the finding of this study, the following recommendations are drawn:

- Based on the finding of this study there is positive impact of inventory control on the organizational performance of large manufacturing firms in Debre Berhan, it is highly recommended that these firms prioritize implementing robust inventory control strategies. By effectively managing their inventory levels, these organizations can improve customer satisfaction, reduce costs, and enhance overall operational efficiency. Implementing inventory control systems and processes will enable them to optimize the availability of products, reduce waste, and mitigate risks associated with inventory management. Investing in inventory control will ultimately contribute to the long-term success and competitiveness of these manufacturing firms in Debre Berhan.
- Based on the importance of inventory speed in enhancing the organizational performance of large manufacturing firms in Debre Berhan, it is highly recommended that these firms prioritize improving their inventory speed. Swift movement of inventory throughout the supply chain plays a crucial role in meeting customer demands, reducing lead times, and improving overall operational efficiency. By streamlining inventory processes and implementing efficient logistics and distribution systems, these firms can minimize stockouts, reduce carrying costs, and enhance customer satisfaction. Investing in technologies such as RFID tracking and automated inventory management systems can expedite inventory movement and enable real-time visibility, leading to improved decision-making and responsiveness. By focusing on inventory speed, these manufacturing firms can gain a competitive edge and achieve higher levels of organizational performance in Debre Berhan.
- Considering the finding of this study, it is evident that inventory cost has a positive effect on the organizational performance of large manufacturing firms located in Debre Berhan. Therefore, it is recommended that these firms continue to prioritize their inventory management strategies to enhance their overall performance. By efficiently managing their

inventory costs, these firms can optimize their production processes, minimize stockouts, and improve customer satisfaction. Additionally, implementing robust inventory control systems and adopting advanced technologies can further streamline operations and reduce costs. Furthermore, regular analysis and evaluation of inventory data can provide valuable insights for strategic decision-making, such as identifying trends, forecasting demand, and optimizing inventory levels. Overall, by recognizing the positive impact of inventory cost on organizational performance, large manufacturing firms in Debre Berhan can leverage this knowledge to drive sustainable growth and maintain a competitive advantage in the industry.

- To optimize organizational performance, large manufacturing firms in Debre Berhan should prioritize establishing robust systems and processes to ensure inventory accountability. This can be achieved by implementing clear policies and procedures for tracking and monitoring inventory, minimizing the risks of stock discrepancies, theft, or mismanagement. Conducting regular audits and reviews of inventory records will help identify any discrepancies or inefficiencies, enabling timely corrective actions. Investing in employee training programs can enhance knowledge and skills, fostering a culture of accountability within the organization. By effectively managing inventory accountability, these firms can improve operational efficiency, reduce costs, and enhance customer satisfaction, ultimately driving overall organizational performance to new heights.

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APPENDIX

**Debre Berhan University,
College of Business and Economics,
Department of Logistics and Supply Chain Management**

Dear respondent this questionnaire is prepared to examine “Effects of Inventory Management System on Organizational Performance: Evidence from Some Selected Manufacturing Firms Located in Debre Berhan, Ethiopia”. The research output is mainly to fulfill the partial requirement of a Master of Arts in logistics and supply chain management. The information gathered was to be used fully and with due attention for academic purposes only. Therefore, I would like to assure you that the data collected was not misused in any way. Therefore, your genuine, honest, and prompt response is valuable input for the quality and successful completion of the paper.

Thank you in advance for your sincere cooperation.

General Instructions

- It is not necessary to write your name.
- Don't hesitate to ask questions for clarification.

Section One: General Information

For the following questions indicate your answers with a check mark (✓) in the appropriate box.

Gender

Male Female

Level of education:

Certificate and below	<input type="checkbox"/>	BA degree	<input type="checkbox"/>
TVET/Diploma	<input type="checkbox"/>	MA degree and above	<input type="checkbox"/>

Work experience

< 1 years	<input type="checkbox"/>	3-5 years	<input type="checkbox"/>
1-3 years	<input type="checkbox"/>	More than 5 years	<input type="checkbox"/>

Section Two: Questions regarding compensation practices in the study area.

Please indicate your response to the following aspects by ticking the appropriate choice. Use scale of 1-5, where 1=Strongly Disagree; 2=Disagree; 3=Neutral; 4=Agree; 5= Strongly Agree

No.	Variables and measurement items	1	2	3	4	5
	Inventory control					
1	Your organization has the most stringent inventory control measures					
2	The measures are relevant to the type of inventory held in Your organization					
3	There is a competent inventory control manager					
4	Inventory is managed strategically in Your organization					

No	Variables and measurement items	1	2	3	4	5
	Inventory speed					
1	The rate of inventory turnover in Your organization is high					
2	Incoming inventories at Your organization are calculated to the most economical levels					
3	Strategies are employed to vary inventory speed					
4	Strategies employed to vary inventory speed are very efficient					

No	Variables and measurement items	1	2	3	4	5
	Inventory cost					
1	Inventory running cost is relatively low in Your organization					
2	There are strategies set in Your organization to ensure low inventory running cost					
3	Strategies set are relevant to the then inventory					
4	The strategies set are effective and efficient in cutting the cost of running inventory management					

No	Variables and measurement items	1	2	3	4	5
	Inventory Accountability					
1	There are verification documents in receiving and issuing inventory					
2	Declaration of inventory is done effectively					
3	Verification documents are filled well for future reference					
4	Counter-checking is done at the entry and exit of Your organization					

No	Variables and measurement items	1	2	3	4	5
	Organization performance					
1	Our company always improves its productivity (e.g. assets, operating costs, labor costs).					
2	Our company always improves the sales of existing products.					
3	Our company always improves its financial ratios such as return on assets, investment, and equity.					
4	Our company always performs a cost-saving during the production process in raw material, energy, water, human, machine and equipment.					
5	Our company always reduces the cash-to-cash cycle time.					