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THE EFFECTIVENESS OF INVENTORY CONTROL SYSTEM ON PERFORMANCE OF A MANUFACTURING COMPANY. A CASE STUDY THE COTTON COMPANY OF ZIMBABWE (COTTCO).

A RESEARCH

BY

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DEDICATION.

This dissertation expresses gratitude to Jesus Christ, the personal Lord and savior, for the knowledge and wisdom bestowed upon the author during the study. Additionally, the author dedicates this work to their mother for providing unwavering support and resources throughout the research process. The author also dedicates this dissertation to their brothers Taruona and Obert for their inspiration during the study.

Abstract

A research study conducted by Innocent in 2023 investigated the influence of inventory control systems on the performance of a manufacturing company, particularly COTTCO. A quantitative survey method was used to collect data on inventory control systems and their impact on corporate performance. A descriptive research design and a convenience sampling approach were utilized to select a sample size of 28 participants from 30 employees in various departments directly involved in inventory management. Questionnaires were distributed across different departments, and interviews were conducted with department heads to gather data.

The data collected was analyzed with the aid of Microsoft Excel and displayed via tables and figures. As a result of these findings, the study suggests the adoption of cutting-edge computerized inventory control systems to improve purchasing and organizational performance within Zimbabwe's cotton industry.

ACKNOWLEDGEMENTS

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List of Acronyms and Abbreviations

CRS - Continuous Review System

ICS - Inventory Control Systems

PRS - Periodic Review System

JIT - Just In Time

ERP - Enterprise Resource Planning

EOQ - Economic Order Quantity

WIP - Work In Progress

SCM - Supply Chain Management

ML - Maximum Likelihood

LT - Lead Time

PP - Purchasing Performance

OP - Organisational Performance

USA - United States of America

GFI - Goodness of Fit Index

CHAPTER ONE

1.0 Introduction.

In order to meet consumer needs and maximize revenues, inventory management systems are essential for guaranteeing the right quantity, quality, and availability at the appropriate time. According to Jonsson and Mattsson (2016), it alludes to the set of regulations that regulate inventory levels, evaluate inventory that will be kept, utilize raw materials in manufacturing, and provide finished items. Due to the fact that an important percentage of a company's finances are allocated to managing inventory, it is essential. Every company must take steps to maintain stable inventory levels.

An organization's profitability can be negatively affected by both excessive and insufficient inventory. While previously considered a task for lower-level procurement management, the implementation of inventory management systems has recently faced criticism. (Sandberg, 2007). Due to the fact that maximizing profits is the primary objective of private firms, many have been forced to spend significantly in inventory management systems in the hopes of boosting revenues in the future (Mwangi, 2016).

According to Rajeev (2008), implementing inventory management systems is crucial for an organization to achieve optimal inventory levels, reduce inventory costs and improve financial performance. Therefore, it is important for COTTCO to adopt inventory management systems to efficiently handle inventory, meet operational requirements and sustain uninterrupted business operations (Ogbo and Ukpere, 2014). The implications of inventory management systems on organizational performance in Zimbabwe's cotton industry are the exclusive subject of this study.

Background of the study.

According to Lysons & Farrington (2012), the use of conventional procurement practices has led to businesses experiencing ongoing issues with their operations as a result of dynamic changes and greater competition in the business environment. The expansion of businesses brought about by the industrial revolution, which enhanced efficiency and mass production, historically assisted the development of the profession of inventory management systems. As a result, businesses started to have concerns about the practice of inventory management since it was thought to be one of the key variables influencing how well an organization performs. According to Dimitrios (2008), because it has an impact on organizational

performance, inventory management has grown to be a serious issue that requires immediate attention.

Andriolo et al. (2014) state that the development of inventory management systems was a gradual process that aimed to support inventory management practices. The economic order quantity (EOQ) model was created in 1913 in the United States of America (USA), and is one of the earliest inventory control models still used today by commercial organizations all over the world. The EOQ model is widely used in businesses today to manage inventory because it is straightforward and efficient, enabling them to achieve organizational objectives like cost reduction and profitability.

According to Rashid, Hossain, and Patrick, (2002), the ERP system is made up of a number of sections that support various business functional areas, including manufacturing, distribution, accounting, human resource, inventory management and transportation. Businesses can manage their inventories with the help of the ERP inventory control module. By lowering delivery times, order cycle times, and inventory costs, ERP inventory control solutions help businesses manage their inventories. On the other side, ERP inventory control modules are expensive to establish and maintain. According to Broatch (2001), businesses shell out a lot of cash for the installation and upkeep of ERP software.

Currently, many businesses around the world use the Just in Time (JIT) production model, which originated in Japan in the late 1980s (Franco and Rubha, 2017). To avoid inventory exceeding demand, the JIT inventory management system was implemented, and later, the Learn Manufacturing (L.M.) technology was adopted in the United States of America to replace the JIT inventory management system. In the early twenty-first century, many businesses and their suppliers began collaborating to coordinate their just-in-time efforts, resulting in the JIT inventory management system's implementation, which delivered materials and components to the workstation only when they were needed, reducing waste and increasing productivity. Inventory management systems have improved as computer technology has advanced (Silver, 2007). The Universal Product Code (UPC) has improved inventory management systems, and radio frequency technology, which uses microchips to communicate product information, is one of the incredible technologies that has been implemented in inventory management (Agha, 2010).

Given this information, the researcher was motivated to carry out an investigation into how inventory management systems impact the performance of a manufacturing organization in Zimbabwe.

1.2 Problem Statement

THE Cotton company of Zimbabwe is facing the problem of stock-out costs since have not adopted inventory control management techniques and systems in their procurement and supply chain. Inefficient inventory management systems have resulted in manufacturing companies losing their competitiveness in the market. According to Zuva and Choga (2018), the majority of cotton companies in Zimbabwe utilize spreadsheets and other manual processes to manage, report, and reconcile their stockpiles, which makes them ineffective. The manufacturing companies in Zimbabwe's cotton industries must compete with firms in other regions of the nation. To do this, COTTCO must adopt more effective techniques for controlling and managing inventory, such as cutting waste from the production process and lowering holding and ordering costs. This is serious for a manufacturing company and may cause a production operation to breakdown or be delayed.

The performance of businesses has suffered as a result of their reluctance to advance in fashionable computerized inventory management systems, such as ERP inventory control modules, continuous review systems, and periodic review systems, to name a few. The consequences of stock out are numerous and detrimental, such as material and labor loss, a decline in customer satisfaction, a decrease in goodwill, a loss of market share, and a reduction in profits. The high operational costs incurred by manufacturing companies have hindered their ability to achieve their profitability objectives. These high costs are due to the inefficiency of the basic inventory management systems they are currently using, which lead to high inventory costs and an inability to maintain optimal inventory levels. Hence, in many manufacturing organizations, inadequate inventory management systems have increased operational costs, disrupted production operations, and caused organizational underperformance.

In light of this circumstance, the researcher decided to conduct a study to determine how inventory management systems affect organizational performance in Zimbabwe's cotton industry. The study would seek to examine these issues and come up with a suitable model to address them.

1.3 Research Objectives

1.3.1 Primary objective

The main objective of this research is to examine the inventory management and control methods used in manufacturing firms in Zimbabwe, with a particular emphasis on The Cotton Company of Zimbabwe, which will be used as a case study.

1.3.2 Secondary Objective

1. The purpose of this study is to examine how effective inventory management can contribute to the profitability of a manufacturing firm.

2. This research aims to determine how optimal inventory levels can affect the overall performance of an organization.

3. The aim of this research is to examine how inadequate inventory management affects the efficiency of a manufacturing company.

4. The main focus of this study is to assess the efficiency of various inventory management methodologies and strategies in a manufacturing firm.

Research question

1) What are the benefits of effective inventory management for manufacturing firms' profitability?
2) What effects does an optimal inventory level have on organizational performance?
3) How effective are inventory management tools and techniques in manufacturing firms?
4) To what extent has inventory contributed to manufacturing firms' profitability?

1.5 Hypotheses.

The following were the study's hypotheses:

H1: Firms that implement effective inventory management practices can gain a considerable competitive advantage.

H2: Organizational Performance will be strong in firms with high levels of Inventory Management Practices.

H3: Firms with a strong competitive edge will have a strong organizational performance.

H4) The effectiveness of inventory management systems does not have a direct impact on the performance of an organization.

H5) There are no indirect benefits to organizational performance from implementing inventory management systems.

Significance of the Study

The research will aid in the researchers understanding and knowledge of inventory management and the company's performance. The researcher will benefit from this because he will be able to deal with issues concerning the impact of inventory management on the performance of organizations. The researcher gained in-depth knowledge of the research topic. The necessary knowledge gained will be used by the researcher in the future to assist procurement departments in improving inventory management systems, as highlighted by the results of this research.

The research will aid in determining the role of inventory management in the performance of a company as well as the benefits and costs associated with using inventory techniques to improve organizational performance. In addition, this study makes two different contributions to Zimbabwe's cotton industry. Therefore, this study will assist in identifying suitable inventory management systems that can be utilized by cotton industry companies to enhance their competitiveness in the economy and boost their overall performance. This is because the prices of raw materials and resources are currently volatile in the economy. Bindura University of Science Education values the research because it expands the database on existing knowledge of the effectiveness of inventory management systems. This study will be submitted to the university library as a contribution to future research.

1.7 Research assumptions

The author conducted this study under the assumption that:

- The sample population will reflect the total population.
- The information gathered is trustworthy.
- Participants will answer the questions honestly.

1.8 Delimitation of the Study

The investigation will center on the effects of an inventory management system on the performance of a manufacturing organization. It will be carried out at the Cotton Company of Zimbabwe in Harare, Zimbabwe, under the cotton industry.

1. 9 research limitations

The researcher is likely to face the following problems:

- Since the researcher was self-funded, he was limited by budgetary limitations. The researcher was successful in securing help from family and friends. The researcher has employed questionnaires to get information from respondents in order to overcome the problem of limited financial resources. This was in accordance with the argument made by Hair et al. (2003) that questionnaires are efficient in terms of cost and have standard replies that make it simple for researchers to understand the data.
- Irresponsive: Some respondents might take a while to complete the surveys, and some might desire to keep the details of the company's performance very private. The researcher assures the discouragement that it will remain private. This was avoided by the researcher, who obtained informed consent by writing letters to participant organizations requesting authorization to conduct the research and assuring COTTCO respondents that the study is only being done for academic reasons. The author followed Walliman's (2011) recommendation to clarify the inquiry process and confidentiality measures when interacting with organizations, managers, or those in positions of responsibility.
- Due to time constraints, the researcher sent questionnaires to participants via email, and the completed questionnaires were also returned through email. This approach is in line with Sekaran's (2003) assertion that email is a fast and cost-effective method of communication, with the added benefit of guaranteed delivery, providing the email address is correct. Respondents, such as senior management, were too preoccupied to

answer the research questions. The researcher scheduled meetings with all of the senior management as a solution to that.

1.10 Definition of key terms

To put it in other words, inventory refers to both raw materials and finished products. It is a valuable asset for a company as it is one of the key sources of revenue production and earnings for shareholders.

An inventory management system is a technological solution that tracks a company's products across the supply chain, making it easier to coordinate and manage purchase, shipping, receiving, warehousing, and returns.

Inventory control, also known as stock control, ensures that an organization has the appropriate amount of supplies to meet customer demand and provide financial elasticity by implementing suitable internal and production controls.

Organizational performance refers to the ability of a company to achieve its objectives and maximize results, and in the modern workplace, it refers to a company's capacity for achieving objectives amid ongoing change. The study of inventory management in the context of a Zimbabwean manufacturing firm aims to evaluate the impact of inventory management on organizational performance and assess the effectiveness of various inventory management tools and techniques.

1.11 Structure of the Research

Chapter One covers the introduction, study background, problem statement, research objectives, research questions, hypotheses, assumptions, study scope, definition of terms, research structure, and summary. The second chapter focuses on a literature review that includes a theoretical analysis, empirical evidence, and identification of gaps in existing research. The third chapter explains the data collection methodology, including research design, sampling methods, research instruments, data analysis, and presentation. Chapter Four presents the data gathered, analyzed, and discussed. Finally, chapter five concludes the research findings and discussions by providing a summary, conclusions, and recommendations.

1.12 Summary

This section has explored the study's context, the issue statement, the research goals that have guided the research, the research queries, presumptions, and research boundaries. The subsequent section will explore the pertinent literature on the implications of inventory management systems.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction.

Theoretical review, empirical research, and chapter summary are the three elements that make up this chapter. The theoretical review, which includes a clarification of inventory management philosophies and inventory management systems, is covered in the first section of this chapter. This chapter's second portion will examine empirical evidence, or the investigations that other researchers have undertaken on the subject. At the end of the chapter, there is a summary of the chapter.

2.1 Theoretical Review

An arrangement that systematizes all inventory management tasks is referred to as "inventory management system management, according to Kafyetta (2016). Inventory management systems are considered crucial for the success of any business and are primarily utilized to precisely record stock movements through the use of supply chain hardware and software tools. According to Saleemi (2004), inventory management is a crucial problem in every company that shouldn't be overlooked. Saving valuable investments is the aim, along with reducing costs and increasing the budget. He further explains that the main goal of inventory management is to reduce idle time caused by stock shortages and non-availability, as well as minimize inventory carrying costs and losses due to expiration.

In many businesses around the globe, inventory is one of the most important and conspicuous aspects of conducting business. As a result, inventory needs to be effectively managed and controlled to support the operations of the company. There are three primary types of inventory: finished goods, work-in-progress, and raw materials. This is consistent with Gitman's (2009) statement that inventory generally comprises three elements: raw materials, work-in-progress, and finished goods. Hopp and Spearman (2000) further categorize inventory into raw materials, work-in-progress, finished goods, and spare parts. Work-in-progress refers to products that are partially finished, while raw materials are the materials that have been purchased and will be utilized in the production process. However, finished goods are defined as stock things that are prepared to be sold by Nwankwo and Osho (2010). To maximize profits, inventories, which account for a sizable portion of a business's expenditures, must be carefully managed. Poor inventory management causes deficits for

many cotton organizations. Therefore, stockpiles are unpredictable, wasteful, and expensive unless they are under control.

To explore how inventory control systems, impact the performance of manufacturing companies, various theories are employed. According to Mawonde, D and Demberere,C (2020), there are many theories which raise serious questions about how inventory management systems affect organizational efficiency such as theory of constraints, institutional theory, resource-based view theory, lean theory, and economic order theory are some of the major theories.

2.1.1 Theory of Constraints

Goldratt (2004) proposed the theory of constraints as a management philosophy aimed at improving organizational performance and increasing efficiency in output throughput. The theory of constraints is based on the idea of enhancing organizational performance and efficiency. The theory focuses on identifying the weakest link or constraint in a chain and raising or reducing it as needed. However, the theory is not without its challenges. Kazim (2008) notes that long lead times, unnecessary inventories, inappropriate material orders, lack of control over priority orders, resource conflicts, high levels of urgent situation orders, high levels of delegation, and lack of engagement from key customers are some of the issues associated with the theory of constraints. The theory of limits is based on the notion that a company will not function as effectively as one that maximizes material flow and the value produced by operational performance. This is due to the fact that a company that maximized the output of every machine would not act in this manner.

According to the theory of constraints, the capacity and capability of these constraints must be successfully regulated in order to improve the operational performance of the organization. Companies have reportedly had difficulty investing in the organizational and technological frameworks necessary to accomplish the synchronization of systems that permit coordinated inventory movements, according to Fawcett, Ogden, Magnan, and Cooper (2006). The notion of limitations serves as the foundation for a manufacturing technique used to minimize inventory. A straightforward relationship that emphasizes the impact of the inventory management system on the development of operational performance is the foundation of the Theory of Constraints Measures. The extent to which an inventory

management system enhances corporate organizations' operational performance serves as evidence of its efficacy.

To improve operational efficiency and ensure smooth operations, manufacturing firms need to adopt inventory management systems that can help address bottlenecks. This may require investing in new technology for inventory management that can alleviate or eliminate constraints. This idea is in line with the theory of constraints, which has contributed to the development of literature in this field.

2.1.2 Lean Theory

The lean theory builds upon the principles of just-in-time philosophy and emphasizes the organization of buffer stock and reducing waste in the manufacturing process. It highlights the importance of inventory leanness in enhancing the efficiency of corporate organizations and is considered the best inventory management system. The theory advocates for producers to adapt to demand selection to reduce stock supplies and lower inventory transportation costs. To achieve this, the solution proposed involves ensuring that materials are available through long-term collaborations, which include data and information sharing, as well as partner interchange across enterprises.

As an outcome, this study recognizes the significance of a lean inventory management system in reducing excessive inventory expenses and boosting the productivity and profitability of commercial organizations.

2.1.3 Institutional theory

A fundamental theory for comprehending organizational behavior is the institutional theory. Understanding how organizations react to mounting demands for improved management of their internal and external environments has been made easier with the help of institutional theory. Organizations in business do not function in a vacuum. (Berthod, 2017). Chandler and Hwang (2015) explained that the institutional theory describes how organizations respond to external pressures by promoting standardization across industries. This theory highlights the influence of the external environment on organizations, including the implementation of practices, methods, and procedures, as well as the enhancement of formal organizational structures. Organizations apply a variety of procedures, processes, rules, and social norms

that have evolved and been institutionalized in the external environment in order to be regarded as legal.

According to Kauppi (2013), organizations must adopt effective strategies from different sectors. Isomorphism is the theory that most accurately describes the homogeneity that institutional theory permits. Institutional isomorphic change, according to DiMaggio and Powell (1983), can take place in a variety of ways, including normative isomorphism, which is linked to professionalization; mimetic isomorphism, which results from standard responses to uncertainty; and coercive isomorphism, which arises from the problem of legitimacy.

Organizations use mimetic isomorphism to model themselves after businesses that are more successful than they are, especially in advanced technologies. (DiMaggio and Powell, 1983). Isomorphism and imitative behavior, according to Kauppi (2013), may be advantageous to late adopters, particularly with regard to technical advancements. According to Kauppi (2013), organizations can gain from seeing the success of the adoption of cutting-edge technology and can also learn from any issues the organization may have had with the technology.

To effectively adopt and implement modern inventory management systems for optimal financial performance, manufacturing organizations may need to emulate successful practices of other companies, especially when facing problems that lack clear solutions or causes (known as mimetic isomorphism). This is why the institutional theory is highly relevant to this study.

2.1.4 Theory of Economic Order Quantity Model

The EOQ model is an important inventory decision-making model that aims to minimize the balance of costs between holding inventory and reordering it. According to Schroeder (2000), EOQ is the ordering quantity that minimizes these costs. In order to calculate a basic EOQ, Ogbo (2011) asserts that the cost of ordering and keeping stock, the rate of demand, the cost of each unit, immediate replenishment, and no stock-outs are critical premises. The cost curve related to inventory has a minimum point, meaning that there is an optimal inventory level that balances holding costs and ordering costs. As inventory holdings increase, ordering costs decrease, but holding costs increase. At this moment, the lowest total inventory cost is the quantity of inventory that minimizes the sum of the costs associated with storing the inventory and placing orders, which is known as the EOQ.

The EOQ formula:

$$EOQ = \sqrt{\frac{2DS}{H}}$$

SOURCE: AUTHOR (2023), where

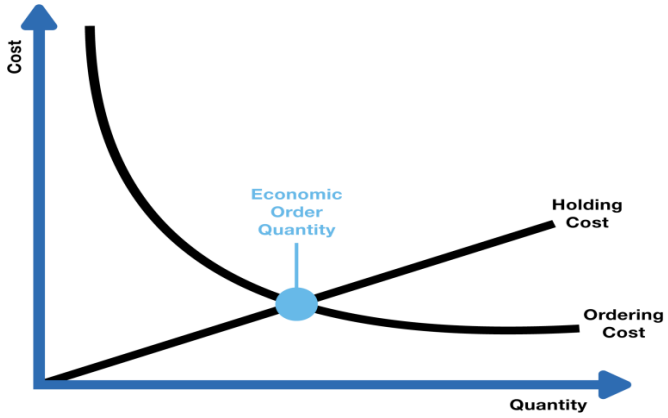
S = Ordering cost per unit Where

D = Demand i n units per year

H = Holding cost per unit

EOQ = Economic Order Quantity

Figure 2.1 EOQ graphical presentation:



SOURCE: https://www.bluecart.com/blog/economic-order-quantity (2023).

It is important to acknowledge the significance of the economic order quantity model in this study, as it demonstrates that controlling inventory to an optimal level can lead to a reduction in inventory costs. Nyabwanga et al. (2012) state that the economic order model theory suggests that maintaining an optimal inventory level can decrease the expenses associated with future business disruptions or losses resulting from supply shortages. EOQ can help reduce supplier expenses and guard against price fluctuations.

2.2 Types of Inventory management systems

In the day-to-day operations of an organization, inventory management systems are seen as essential elements with the potential to improve organizational performance. The types of inventory management systems listed by Ali et al. (2014) include input reordering, tracking, turnover, purchasing, receiving, and warehouse storage. The relationship between inventory management and inventory control systems is complex, and there is no clear consensus among managers and academics on how to distinguish the two. However, it is widely recognized that an effective inventory management system requires both inventory management and inventory control in order to improve supply chain productivity and efficiency, as well as ensure that the appropriate inventory is available when needed to meet customer demand.

There are several inventory management systems in use, ranging from simple to quite complex. A company must ensure that the inventory management system it deploys is efficient and effective. According to Posazhennikova (2012), computerized inventory management systems are the most successful in optimizing inventory control. This section will examine the literature on inventory management systems used by businesses for inventory management.

2.1. Perpetual Inventory management systems

The perpetual inventory management system involves the continuous updating of inventory records and accounts as inventory items are received, exchanged, moved, retrieved, and disposed of. This system is preferred by some businesses because it provides accurate information about their inventory and requires fewer manual inventory counts. According to En-Kanselu (2008), perpetual inventory management systems are believed to be quick and accurate when used and managed properly. Chopra (2015) suggests that using barcode scanners along with a database of inventory levels can further improve the performance of perpetual inventory control when used by storeroom workers.

Perpetual inventory management systems have shortcomings despite their relevance for improving the operation of the company. As it is hard to maintain these systems manually, they are first and foremost dependent on technology. Instead, they call for specialized hardware and software, which results in a high rate of execution, especially for companies

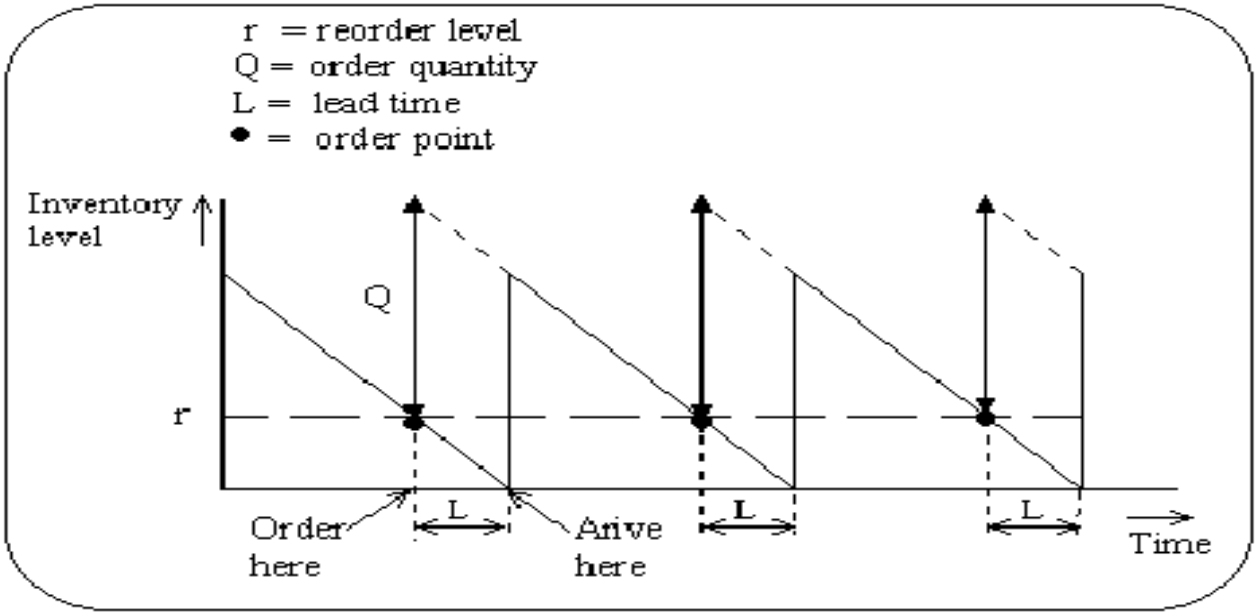
that have many locations or warehouses. They also require regular maintenance and updates, which add to the overall expense. Our second concern is that a perpetual inventory system, which lacks a uniform inventory system, can cause the recorded inventory to differ from the actual inventory over time.

2.2 Continuous Review System

The continuous review system, also referred to as fixed point reorder system, is an inventory management strategy that involves continuously monitoring inventory levels and placing orders based on a predetermined reorder threshold. The orders are typically based on a fixed lot size (Q) to optimize inventory management. In a continuous inventory review system, orders are placed when a certain position is reached after more frequent inventory reviews. Although the continuous inventory review system policy is not ideal, according to Chopra and Meindl (2010) it is sufficient to resolve concerns regarding the security of inventory control. The ability to update inventory counts in real-time makes it easier to decide when to place future orders for items, which is one benefit of having a continuous review system.

Additionally, since the system can deliver the expenses of sold goods in real time, correct accounting computations are made possible. The daily movement of goods must be tracked with specialized technology in a continuous inventory review system in order to maintain correct records. Bar code readers and scanners are two instances of specialized tools.

. **Figure 2.1.1. continues review system**



Source: 12 – 1 Copyright © 2010 Pearson Education, Inc. Publishing as Prentice Hall. Inventory Management 12

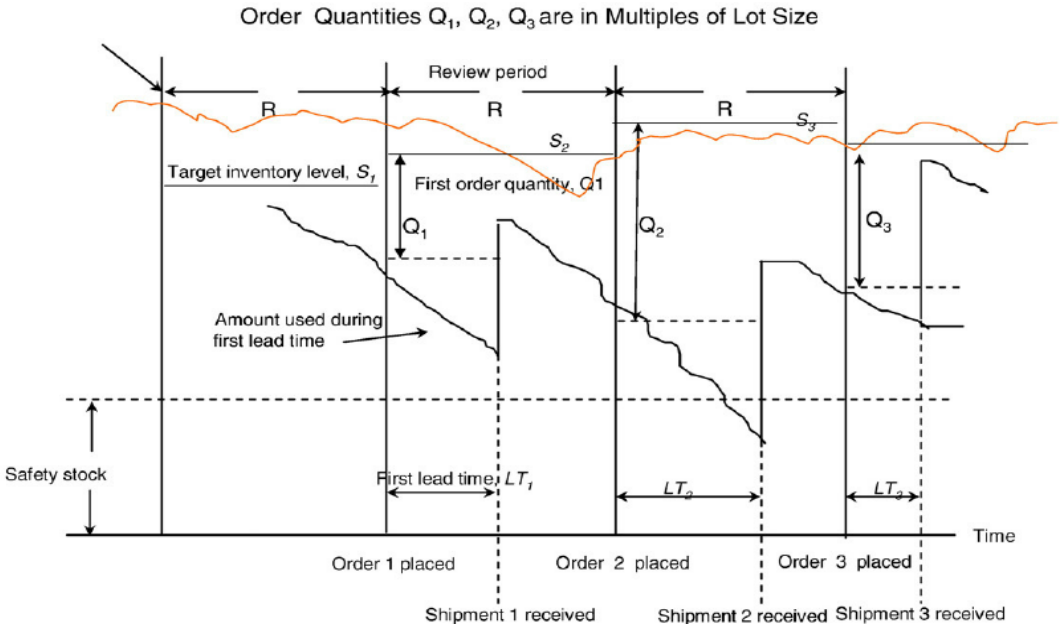
2.3 Periodic Inventory Systems

They do not conduct a daily inventory, which is in line with periodic inventory management systems. Instead, they are alleged to have given permission for businesses to understand the starting and ending stock levels within a given window of time. By using actual inventory amounts, these kinds of inventory management systems take inventory Chopra (2015) stated that the periodic inventory system is easy to use since, after conducting the physical count of inventory, the balance from the purchases account is moved to the inventory account to calculate the inventory's final cost. The periodic inventory system has few complications

The nature of control and review is the primary distinction between continuous review and periodic review. While conducting a periodic review, the inventory position is examined every predetermined amount of time, like every two weeks, whereas when conducting a continuous review, the inventory position is examined every time an inventory withdrawal is performed. By employing a periodic review system, a company's management can spend less time analyzing the amount of inventory and more time thinking about other business-related matters. The employment of a periodic inventory management system, however, is not without its drawbacks. More stocks are needed for this method, which tends to result in

higher holding costs like maintenance and insurance. Bigger stocks are also exceedingly challenging to keep track of, which increases the danger of theft and causes losses.

Figure 2.1.2: Periodic review system



Source: Adeyemi L. (2010).

The illustration of the periodic review policy inventory management system above illustrates how it is used with the presumption of fluctuating demand and a constant lead time.

In a periodic review inventory management system, inventory is checked at regular intervals. When the review period ends, an order is placed to bring inventory back up to the desired level. The desired level is shown by a dotted horizontal line, and the actual inventory level is shown by a downward-sloping line.

2.4 Just In Time (JIT).

A Japanese assembly-related philosophy known as the just-in-time (JIT) technique places a strong emphasis on having the appropriate resources available when you need them. The JIT method improves communication, reduces expenses and waste, and boosts quality, profitability, and efficiency.

Mazanai (2012) defines the "just-in-time technique" as a set of strategies aimed at reducing waste by ordering materials, components, and other items in advance to meet urgent manufacturing needs. To enhance the entire inventory supply chain, a set of strategies has been designed, such as shared product design with suppliers and customers, avoiding incompatible local sourcing, implementing rapid machine-determined timings, and adopting comprehensive preventive measures. As per Mazanai (2012), the JIT strategy is an inventory management approach that strives to minimize inventory and its related expenses, enhance efficiency, and decrease lead times, thereby improving a company's Return On Investment.

The Just-in-time (JIT) inventory system is an inventory management approach that strives to maintain low inventory levels by manufacturing only what is necessary when it is needed. According to Farzaneh (2012), JIT can decrease expenses related to storage, investments, insurance, ordering, and shipping. However, JIT requires significant coordination and is dependent on the company's specific circumstances. When all conditions are met, JIT can be more cost-effective than EOQ since it reduces the purchase price, protection charge, and ordering fee while also lowering stock investment and scrap expenses.

2.5 Economic Order Quantity (EOQ)

To determine when and how much to order, a company must establish logical inventory control, as per Bowersox (2002). This requires determining the economic order quantity (EOQ), which refers to the quantity of orders that minimize inventory holding costs while keeping prices in line with reorder costs, according to Ogbo (2011).

Onwubolu et al. (2006) suggest that the following assumptions are essential for EOQ: predictable and constant demand and lead time, receipt of inventory in a single batch and at a single time, no quantity discounts, variable costs limited to placing orders and maintaining inventory, and stock-outs can be completely avoided by timely orders. Under these assumptions, the inventory consumption graph has a sawtooth shape, indicating a gradual change over time. The EOQ method presents significant implementation challenges compared to other inventory control management techniques, as a business must understand records of annual consumption, ordering worth, annual sporting cost charge, unit value, and order amount.

The advantage of the EOQ approach is that it aims to identify the order quantity with the lowest overall cost of carrying the stock to reduce holding costs, resulting in reduced operating expenses. As a result, a company can use it as an appropriate inventory control management technique to achieve high profitability with these assumptions forming the foundation of EOQ.

2.6 Model for ABC Inventory.

Mandal (2012) proposes that the ABC inventory control system is founded on the notion that a small proportion of items may account for a significant proportion of the total inventory's cash value used in the production process, while a large proportion of the cash value of inventory may be derived from a significantly larger number of items. This technique involves managing high-value items more rigorously than low-cost ones, according to Ng (2007). In accordance with the ABC Inventory Model, each stock item is assigned an A, B, or C designation based on the quantity purchased. The least expensive item, "C," can be managed under simple physical control, while the most expensive item, "A," requires close supervision and accountability from the most qualified employees (Ng, 2007).

The ABC evaluation, on the other hand, is a well-established classification system based on the Pareto principle, claims Lyson (2006), who makes this statement when discussing how to prioritize things in the administration of an organization's stock. The ABC analysis is a method for organizing inventory management priorities that divides each area into A, B, and C. The greatest amount of management effort and attention are required when handling commodities. According to Lyson (2012) and Lyson & Farrington (2006), B items are in the center while C items get the least attention.

2.7 Barcode Inventory management systems

Physical inventory procedures are thought to be less accurate and efficient than barcode inventory management systems. Barcode systems, when used as a component of a complete control inventory system, instantly update inventory levels anytime workers scan them with a barcode scanner or mobile device.

En-Kanselu (2008) discusses the advantages of incorporating bar-coding into inventory management system procedures. These advantages include ensuring precise data on all

inventory transactions, eliminating the time-consuming data errors that may frequently occur with manual or paper systems, and reducing errors in manual data entry.

2.2 Empirical Review

Research has already been done on inventory management systems in connection with their impact on organizational performance in various industries, public institutions, and around the globe. In order to make the studies more pertinent to the current study topic, the parts that follow provide an overview of various investigations that were done in an African setting.

2.2.1 Inventory control management practices and organization performance

Numerous academics have examined various inventory management and control systems and their effects on organizational performance in research studies on inventory management that have been conducted all over the world. These studies have accumulated enormous knowledge about inventory management and organizational effectiveness. Maintaining an ideal inventory level is a requirement for implementing inventory management systems, claim Maria and Jones (2003). Additionally, Ballon (2000) believes that while making judgments about inventory, the cost of the inventory should be carefully considered. Additionally, Palmer and Dean (2000) believed that an organization's ability to manage its inventory effectively depends on the installation of effective inventory management systems.

Mogere, Oloko, and Okibo (2013) found that implementing material requirements, distribution planning, and vendor-controlled inventory had a positive impact on operational success and organizational performance. The examination was carried out at the Gianchore tea sector in Kenya as a case study. Its purpose was to assess how inventory management systems affected the tea industry's daily operations using a specially created questionnaire and regression data analysis.

In 2017, Osunsan and colleagues conducted a study in Uganda to investigate the relationship between inventory management and organizational profitability. The study, which was entitled "Inventory Management and Organizational Profitability: A Case of Gumutindo Coffee Cooperative Enterprise Limited," found that effective inventory management can lead to increased profitability for organizations.

The study used Gumutindo Coffee Cooperative Enterprise Limited as a case study. Gumutindo is a coffee cooperative in Uganda that has been in operation for over 30 years. The study found that Gumutindo had implemented a number of effective inventory management practices. The research design was descriptive. According to the study, Gumutindo Coffee Cooperative Enterprise Limited's profitability was positively impacted by inventory management. The investigation came to the conclusion that the inventory management was efficient and suggested additional inventory investment to raise inventory levels.

Shin and Ennis' (2015) study of the American manufacturing sector's profitability examined the link between effective inventory management andThe study's goal was to determine whether the firm will experience increased profits if it can successfully manage a low level of inventory over the course of a year. The study obtained balance sheets, income statements, and yearly financial statements for manufacturing enterprises in the United States using the computer database. Regression analysis was used to analyze the data in the study, and the results showed that a lower inventory-to-sales ratio is linked to a larger profit margin. The study's findings indicated a favorable correlation between increased inventory management effectiveness and firm profitability.

In addition, Kimaiyo and Onchiri (2014) examined how important inventory control is to the efficiency of recently established cooperative creameries in Kenya. A target demographic of 500 people was selected at random to comprise the study's final number of 83 participants. In order to demonstrate that controlling inventory by maintaining inventories and putting orders for expenses generally increased corporate performance, the study used a descriptive research method. According to the study's findings, a variety of businesses in Kenya appear to address the value of inventory control in supply chain management.

In Ethiopian micro and small businesses, the effect of inventory management methods on firms' competitiveness and organizational performance was empirically investigated by Atnafuand Balda (2018).

The data used in this analysis came from the study's sample of 188 micro and small businesses (MSEs) that are engaged in the manufacturing industry. Increased inventory management may improve organizational performance and competitive advantage, according

to the study's findings. A competitive advantage may also have a direct, positive impact on how well a business operates.

In their 2017 study, Otuya and Eginiwin examined the impact that inventory management procedures had on the success of SMEs in Nigeria. All SMEs operating in Delta State made up the study population, which was based on a descriptive research approach. Inventory turnover and SME financial success are significantly positively correlated, according to a data analysis using multiple regression. The study also discovered no clear positive relationship between inventory leanness and profitability as well as a negative association between inventory conversion period and profitability. The overall finding of the study was that inventory management significantly affects a company's financial performance. As a result, businesses' inventory systems should be maintained at the proper levels to boost earnings and reduce storage expenses for additional merchandise. The current research, which focuses on a single manufacturing company to acquire in-depth insights into the consequences of its inventory management practices on performance, is somewhat different from this study. These findings led the researcher to the conclusion that inventory management practices might also have a direct impact on how well manufacturing enterprises in Zimbabwe perform.

2.3 Chapter Summary

This chapter discussed the existing theories and research on inventory management. It started by describing the conceptual framework and hypothesis building, which are the foundation of the study. It then discussed the empirical literature and research gaps, which are the areas where further research is needed. The approach used to conduct the study will be discussed in the following chapter.

CHAPTER THREE

RESEARCH METHODOLOGY

INTRODUCTION

The research design employed in this study will be the chapter's initial point of emphasis. The methodology employed to carry out the study's research goals was also discussed in detail in this chapter. Additionally, this chapter aims to make clear how respondents were administered with data collection tools like questionnaires and interviews. This research study's data collection and analysis were crucial to ensuring the validity and trustworthiness of the data used, and they also considerably aided in determining the research's success.

This chapter's goal is to describe the approach used to achieve the study's objectives. The chapter is organized as follows: Section 3.1 describes the methodology employed in this investigation. Section 3.2, which describes the study's target population, is then included.

The sample size utilized is explained in Section 3.3, and the sampling strategies employed are explained in Section 3.4. The information source is described in Section 3.5. Following a discussion of the data collection tool used in Section 3.6, a description of the data collection process is provided in Section 3.7, Section 3.8 describes how the data will be presented and analyzed. While Section 3.9 explains the data presentation and pilot study in section 3.10. The validity and dependability of the models and the assessment tool are examined in Section 3.11, and the ethics that were upheld throughout the study are described in Section 3.12. The chapter is summarized at the end.

3.1 Research Approach

The study used a quantitative survey methodology to quantify and explain the current inventory control methods and gauge their impact on business performance in Zimbabwe's cotton industry. A quantitative survey is a research method that collects data from a large number of people through a survey. This type of research method was chosen because it allowed the researcher to have a large sample size, perform statistical analysis, and investigate relationships and factors that could not be directly measured.

3.2 Target Population

The workforce of the Cotton Company of Zimbabwe is the target population. Store controllers, procurement officers, managers, directors, accountants, IT human resources, and HODs are among the respondents who make up the population. According to Saunders et al. (2016), a population is a grouping of all observations of a random variable that are being studied and from which inferences are sought. According to The Cottco Human Resource records of 2022 the population directly link to inventory management is 30. The target population for this study is 30.

3.3 Sample size

28 respondents were chosen as a sample by the researcher. The sampling frame is 93.3% complete here. The model developed by Krejcie and Morgan (1970) was used to calculate the sample size. The model is presented as a table, which makes the sample for the population under consideration simpler. According to Saunders et al. (2016), a sample is a grouping of some, but not all, of the components of the sampling frame under study that are utilized to describe the population or to be an accurate representation of its features. The Yamane (1967) formula was used by the researcher to confirm how the model calculated the sample size. It is as follows:

n = N/ (1+N e2)

n = sample size N = population size e = the level of precision

$$\frac{30}{1+30(0.05)\ (0.05)}$$

Applying 5% margin of error the

Sample is 28

As a result, the sample size was set at 28 employers. However, it is worth noting that 28 surveys were issued to the company, and 27 complete copies of questionnaires were returned, for a response rate of 96.4%. According to Ray (2012), a response rate of 75% or above

indicates a good and appropriate response proportion. As a result, 28 responses made up the sample size for data analysis.

Table 3.1 Population and sample

DEPARTMENT	POPULATION	SAMPLE
Procurement	6	5
Stores and Logistics	8	8
Production management	4	4
IT department	6	5
Human Resource	2	2
Finance	4	4
TOTAL	**30**	**28**

Source: Primary data (2023)

3.4 Sampling Technique

3.4.1 Convenience Sampling

A convenient sampling approach includes picking circumstances where it is easier to obtain the necessary information for the sample (Saunders et al., 2016). In order to obtain study data, the researcher adopted a convenient way of picking a sample from the stratum. The researcher is free to select the most convenient departments for him based on the organization's inventory management.

3.3.2 Stratified Sampling

The researcher utilized stratified sampling since it was possible to divide the population into homogeneous strata. The population was divided into strata by the researcher, including directors, H.O. Ds, accounting departments, procurement departments, and IT departments. Stratified sampling ensures that all groupings of population elements are represented, reducing the dominance of any other group (Cooper, 2003). The population is divided into homogeneous groups (strata), which lowers sampling mistakes (Saunders et al., 2016). The stratified sample strategy was adopted because it improves data collection efficiency and accuracy (Ghauri & Gronhaug, 2005).

3. 5 Information Source.

3.5.1 Primary Information

This information was compiled for the first time and is unique in nature (Jankowicz, 2000). To gather primary data, the researcher employed questionnaires and interviews. Kothari (1990) defined primary data as information that is obtained for the first time and is hence unique in nature. Primary data was utilized because it can be controlled for inaccuracy to ensure correctness and because it is directly related to the issue at hand (Kumar, 2005). However, the researcher encountered some difficulties when attempting to use primary data due to the time and expense involved in data collection.

3.5.2 Secondary Data

Data that has previously undergone numerous statistical methods and was gathered by other researchers. The researcher used secondary sources for this study, including firm documents, reports, books, e-journals, journals, and websites. Since the information is easily accessible, it was simple for the researcher to gather secondary data about the use of enterprise resource planning as a strategic sourcing tool from the internet and libraries.

3.6 Data Collection Tools

According to Saunders et al. (2016), a research instrument is any tool that a researcher uses to collect data for a study. In order to balance the potential weaknesses of the two instruments, structured questionnaires and in-person interviews were utilized as tools for data collection. The use of this two-research instrument also makes it easier to defend their arguments in order to improve the data's accuracy.

3.6.1 Questionnaires

For the research study, the researcher created precise questionnaires. In order to learn more about how an organization's performance is affected by its inventory management system, the costs and advantages of using inventory control techniques, and the crucial success factors that affect how effective these techniques are, questionnaires were developed. Closed-ended questions were intended for respondents to respond to in questionnaires. The Procurement and Stores department, the Accounts department, the IT department, and the Human Resources department at the COTTCO firm all received questionnaires from the researcher.

The use of questionnaires was made possible by their low cost and standardized responses, which made it simple for the researcher to evaluate the results (Hair et al., 2003). Likert scales of 0 to 1 point have been used to organize structured questions on demographics (0 = female and 1 = male), and scales of 1 to 5 points have been used for other factors (1 = strongly disagree, 2 = disagree, 3 = uncertain, 4 = agree, and 5 = highly agree).

The questions are divided into four categories:

The first part of the document, Section A, was a letter to the respondents outlining the research study and asking them to answer the questionnaire honestly. The letter advised the respondents to attempt all of the questionnaire's questions and warned them against writing their names on the forms. The first section also includes demographic questions for each respondent, such as gender, age, experience, degree of education, and departmentThe next section, labeled as portion B, comprises a set of inquiries regarding how inventory management systems can impact the productivity of a manufacturing firm.

The third segment (segment C) includes questions about the advantages and disadvantages of using inventory management system management in an organization. The last section (Section D) includes questions about the essential success variables that influence the efficacy of inventory control instruments.

3.6.2 Personal Interviews

This involves a situation where the interviewer asks questions of the interviewee, and the interviewee responds to the questions (Jankowicz, 2000). As posited by Saunders et al. (2016), personal interviews are one of the main data collection apparatuses. This is a technique for retrieving peoples' interpretations of events, definitions of circumstances, and reality-constructions (COOPER, 2003). The researcher went to COTTCO's head office and conducted face-to-face interviews with managers and HODs who are directly linked to inventory management. The researcher prepared an interview guide, which he used to remain focused, and he asked the same question to every interviewee. Interviews were utilized by the researcher because they enable the gathering of high-quality data with the necessary depth and enable the interviewer to read non-verbal cues when verbal cues are ineffective (COOPER, 2003).

3.7 Data Collection Procedure

In order to conduct the study, the researcher first requested authorization in writing from COTTCO. The study will only be utilized for educational purposes, according to the letter that informed COTTCO Company of its objective. The researcher set up appointments for interviews and handed out questionnaires in person and through email to participants after obtaining permission to conduct the study. Following the appointment, the researcher brought up concerns about confidentiality, privacy, and freedom from potential harm to encourage respondents to participate fearlessly (Saunders et al., 2016). Following that, complete copies of the questionnaires were emailed back to the researcher, and some were collected in person. To remind the respondents of the interview date, the researcher calls and emails them often.

3.8 Method of Data Analysis

The researcher employs the Excel application to thoroughly assess a significant amount of data gathered through interviews and questionnaires, changing some of the responses to improve the data quality for coding. Each question and answer was cross-checked in order to identify and reduce errors caused by respondents. Furthermore, the researcher reviewed qualitative data collected through interviews.

3.9 Data Presentation

The information gathered was presented in the form of a pie chart and tables. The diagrams are presented in the form of figures and tables.

3.10 Pilot Study

Before administering the questionnaires to the respondents, the researcher ran a pilot study. Prior to the actual whole-scale investigation, this pilot study was conducted to assess the validity and reliability of the research instrument designed and to cope with ambiguous questions.

3.11 Validity and Reliability

A good measurement tool, according to Cooper (2003), should be an accurate counter or indicator of what the researcher is interested in measuring. The researcher was concerned with the validity and reliability of a measurement tool when evaluating it.

3.11.1 Validity

To ensure data validity, the researcher collected data using both a questionnaire and personal interviews. The researcher performed a content validity check to ensure that all of the questionnaire items were consistent with the objectives. A pilot study was conducted to test the study's face validity; it was carried out so that the researcher could make changes to the questionnaire to address some of the issues raised by respondents as well as test the validity and reliability of the questions in the questionnaire (Sekaran & Bougie, 2010).

3.11.2 Reliability

The Cronbach's Alpha coefficients were used to assess the results' dependability. It evaluates the consistency and dependability of the measurement tool (Bland and Atlman, 1997). A dependable coefficient of 0.70 or above is typically considered to be satisfactory. According to Joppe (Golafshani, 2003), dependability is the degree to which outcomes are consistent across time. A metric is considered reliable when it produces consistent results (Cooper, 2003). Reliable equipment should be durable and perform effectively in a variety of situations.

3.12 Research Ethical Considerations

During the research study, the participants were asked for their informed consent. The researcher began by seeking permission to carry out the study at Cottco and then briefed the participants on the study's objective. This aligns with Walliman's (2011) view that researchers are required to seek consent from the managers or individuals with overarching responsibilities in organizations before conducting a research study and explain the study's purpose.

The researcher promised Cottco that the information they provided would be kept confidential and that the study would only be used for academic purposes. This is in line with

Patten's (2009) recommendation that researchers should assure participants of confidentiality, not share their information with external parties, and use the information for its intended purpose. Patten (2009) argues that confidentiality is an important ethical principle in research. He states that researchers should take steps to protect the confidentiality of their participants, including, obtaining informed consent from participants, de-identifying data, storing data securely and not sharing data with unauthorized individuals

Furthermore, in order to conceal respondents' identities, the researcher ordered them not to write their names on surveys. The security of participants' identities was critical because the information sought was proprietary and used for competitive and strategic purposes by a cotton industry company. This is in keeping with Morrison et al. (2011), who contend that participants should withhold their names when providing confidential information in order to participate freely and without fear of repercussion and enable the researcher to gather more relevant data.

Lastly, this study was not copied or plagiarized by anyone. Ezikiel (2008) defined plagiarism as the practice of passing off someone else's ideas or works as your own. The references section contains citations for every piece of literature and every structure used in this study. As a result, the researcher conducted the complete investigation and prepared the report.

3.13 Chapter Summary

This section outlines the methodology employed in the research, encompassing the approach taken, the population and sample size, sampling methods, data sources, data collection tools, data collection procedures, methods for data analysis and presentation, and considerations for validity, reliability, and ethical issues. The following chapter will present, analyze, and interpret the collected data.

CHAPTER FOUR

Analysis and discussion of the data presentation

4.0 Introduction

This chapter displays, analyzes, and interprets data gathered from respondents via interviews and questionnaires. The study's findings have been analyzed and reviewed, and they cover all of the research topics in the questionnaire and interview guide that are attached to this report. Based on the responses from respondents, the data is presented using tables, a pie chart, and figures. The research findings were analyzed and discussed in connection to the findings in the literature. The interpretation of data acquired to allow the researcher to draw appropriate findings and give recommendations for a better understanding of the study.

4.1 Response rate

Questionnaires were distributed to 28 participants and there was 100% response rate which is of the 28 participants. The table below stipulate the response per department. The percentage of survey respondents is displayed in Table 4.1 below.

Table 4.1 Response rate.

Department	**Sample**	**Response**	**Response rate**
Procurement	5	5	100%
Stores and Logistics	8	8	100%
Production	4	4	100%
IT department	5	5	100%
Human Resource	2	2	100%
Finance	4	3	75%
TOTAL	**28**	**27**	**96.47%**

Source: primary data (2023)

The COTTCO company received 28 surveys, as stated in Table 4.1 above, and 27 of them were satisfactorily completed and returned on time. With a respectable response rate of 96.47%. According to Ray (2012), a response rate of 75% or above is considered to be a

"fortunate" rate of return because most studies often obtain lower response rates, hence the response rate is good and reasonable.

4.2 Analysis of the demographic information

The researcher made distinctions amongst the respondents in this area based on the respondents' sex, age, work experience, and educational level. Each item has an impact on the study's methodology, and these elements also have implications for the industry being investigated. Based on the total number of responses, the percentage of distinctiveness for each set of respondents was calculated. The researcher recognized the importance of acquiring this data because it is thought to show a range of replies to the question of how an inventory management system affects a company's performance.

4.2.1 Participants' Profile

This study aimed to investigate how organizational performance in a cotton manufacturing company is impacted by inventory control management systems. In-depth personal interviews were conducted with the production manager, three store managers, buying manager, and logistics manager. These individuals contributed information that was then processed to provide the conclusions of this study. As shown in the table below, all managers had experience of at least two years, thus they were all assumed to be sufficiently knowledgeable about the inventory control management techniques employed in the company's production facility. Other senior management staff, particularly the finance manager, human resource manager, and IT managers in the same unit were also included as part of the study to round out the findings. This was done in part to ensure the accuracy and validity of the data gathered regarding the impact of inventory control management systems on organizational performance.

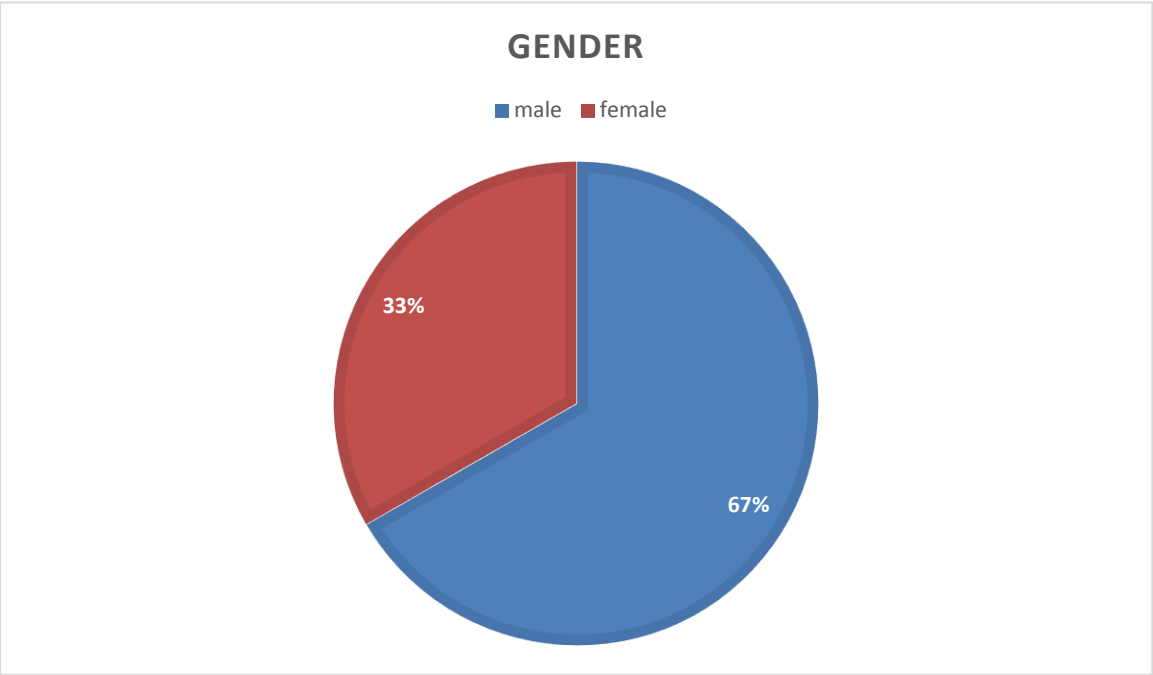
Table: 4.2 Years of working Experience.

Position held	**No of managers**	**Years of work experience**	**.Inventory management role**
Production Managers	**3**	**3**	Supervising raw material input and finished inventory output
Purchasing Officer	**4**	**7**	Controlling stock movement and purchasing stock
Logistics Director	**2**	**6**	Taking care of the corporate store
Stores Control Officer	**5**	**2**	Warehouse management
Store Control Officer	**3**	**5**	Supervising the manufacturing process
Factory Foreman	**2**	**4**	Supervising raw material input and finished inventory output

Source: Primary data (2023)

Table above show that purchasing officers and logistics team have more working experience within the cottco company.

Fig 4.2 The respondents' gender



Source: Primary data 2023

Figure 4.2 depicts the outcomes of respondents' gender responses. The findings demonstrate an imbalanced gender distribution of responders, with males outnumbering girls. Female respondents made up 33% of the population, while male respondents made up 67%. As a result of the unequal gender distribution of responders, the cottco firm of Zimbabwe is dominated by male workers, despite the fact that women outnumber men in Zimbabwe's population. As a result of the scope of the work in the COTTCO company, which involves many stores and warehousing activities brings about gender imbalance to the workforce. It is generally that woman prefer clerical and administrative work than physical labour such as stores and warehousing duties such as counting stock two times per day. Even though at COTTCO company they use bar codes inventory system, they are still using manual material handling systems for loading and offloading deliveries thereby reducing the number of women in the workforce composition.

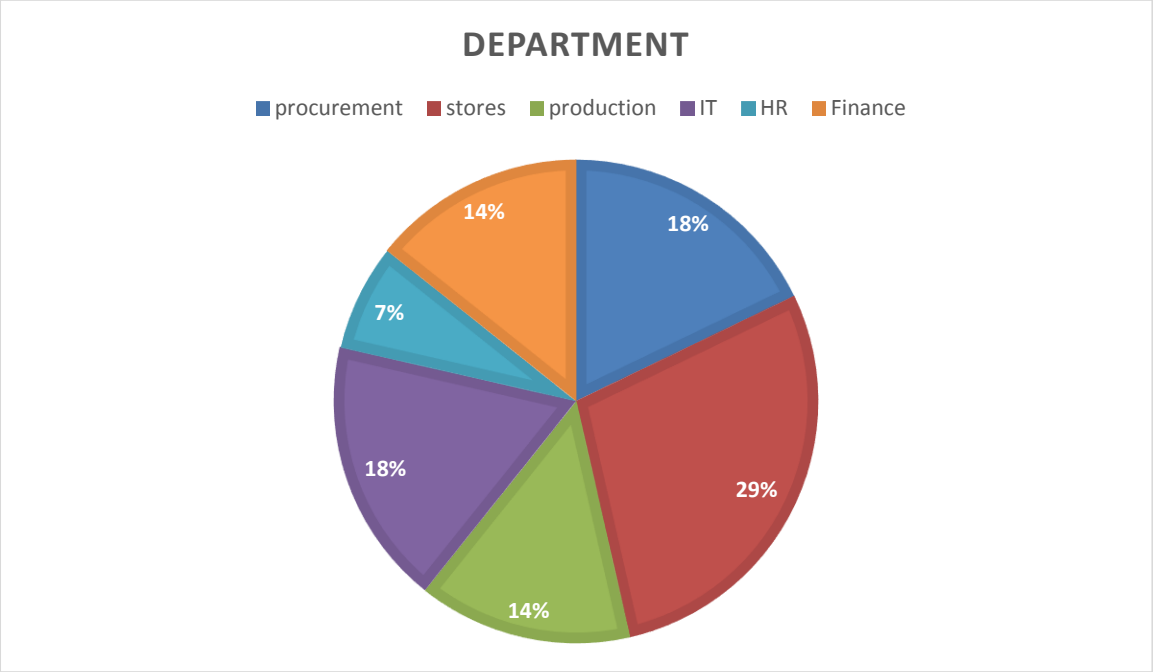
Table 4.2.1 Age of respondents

Sample number	minimum	maximum	sum	mean	
28	18	60	1100	34.28	

Source: Primary data (2023)

The data on the age of respondents are shown in Table 4.2.1 above. The average age of responders was 34.28 years. According to the findings, the majority of responders are 34 years old. From the composition of the workforce, many workers are arranged from 30-35 of the respondents who are active. This illustrate that the company has many younger and vibrant workforces who are technocrats, easily adapt to changes and are eager to learn new things as far as improve inventory system and Enterprise Resource Planning is linked. In this age group there is less resistance to change than older people in the company.

Fig 4.2.1 Department at work.



primary sources (2023)

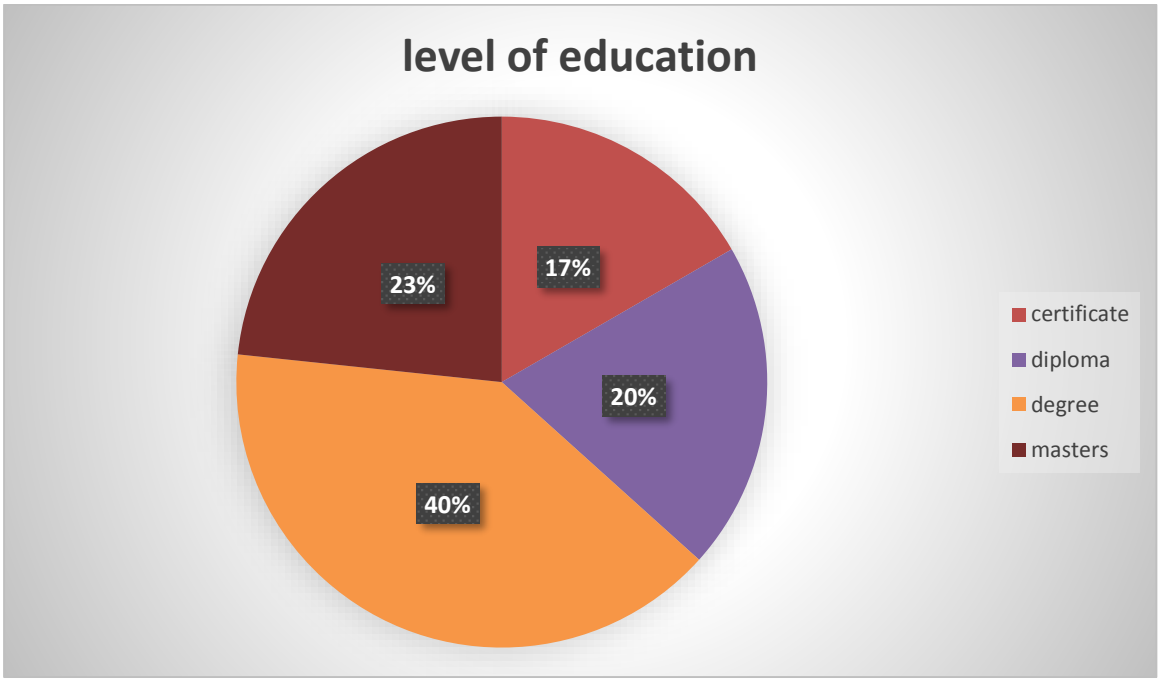
To determine if the participants were from vital departments involved in inventory management, the study aimed to identify their respective departments. Figure 4.2 illustrates

that the largest proportion of respondents (29%) worked for the stores department, which is directly involved in the inventory management process. This aided the researcher in obtaining trustworthy information about how inventory management systems affect organizational performance in the Zimbabwean cotton industry.IT department and procurement department has large percentage than of Human Resource and finance department, this will add value to the researcher since IT are the engineers of the system software and are the ones who contribute to the success of the system.

4.3. Education level

Fig 4.3 Level of education

Source: Primary data (2023)



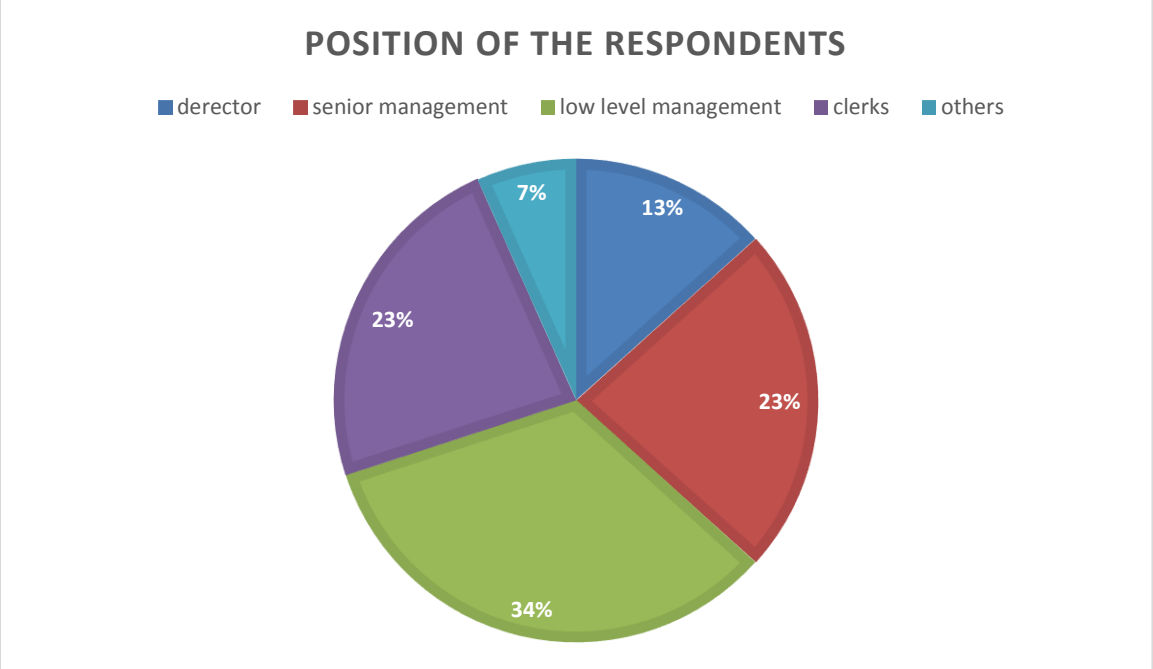
Source: Primary data (2023)

According to Fig. 4.3, respondents with degrees and postgraduate degrees make up a considerable fraction of the sample, indicating that professionalism is in great demand at the cottco company. This demonstrates that the organization employs employees who specialize in specific areas, which boosts the system's performance. This demonstrates that the response to the research topic will be helpful because the majority of the workforce will be well informed and will easily grasp the questions because they are related to the system.

Participants in the "Others" group have completed professional courses such as CIPS. The company educates users, which contributes to good inventory management.

Position at work

Fig 4.3.1



Source: Primary data (2023)

The position of respondents in the company is depicted in Figure 4.4 above. According to the findings, 34% of respondents are lower level employees, while 7% are in other jobs. The findings on the respondents' positions in the cottco company were viewed as very essential since they disturb the quality of data provided for the research.

4.4 Reliability Evaluation

To ensure the accuracy of the research study's conclusions, Cronbach's Alpha was computed and utilized to verify the internal consistency and reliability of all the variables in the questionnaire. Dennis and Cindy (2022) claim that comparing the amount of shared variance, or covariance, among the items that make up an instrument to the amount of overall variation, is how Cronbach's alpha is used to evaluate reliability If an instrument is dependable, Cronbach's Alpha states that there should be a high degree of correlation between the items in

relation to the variance. Results of the measurement instrument's reliability test are displayed in Table below.

Table 4.4.1 Reliability test.

Variables	Value of Cronbach's alpha	Number of Items
Inventory control system (ICS)	0.763	**3**
organisational performance (OP)	0.824	**6**
lead time (LT) and inventory level (IL),	0.746	**6**
purchase efficiency (PE),	0.724	**4**

Source: Primary data (2023)

The results of the dependability test for inventory management systems (ICS), lead time (LT), inventory level (IL), purchase efficiency (PE), and organizational performance (OP) are shown in Table 4.4.1 above. The results reveal that all variables have a cronbachs alpha value greater than 0.70. The results support Nunnally and Bernstein's (1994) recommendation that a measurement instrument's approved cronbach's alpha value be larger than 0.70.

4.5 extend of using following inventory management systems to do in COTTCO company.

The extent of using inventory management system at COTTCO was measured using four items. Respondents were asked to rate the extent to which JIT was practiced at COTTCO in the sample. Responses were elicited on a 5-point scale 1 = strongly disagree, 2 = disagree, 3 = uncertain, 4 = agree, 5 = strongly. These responses were then analysed using frequencies and percentages

Table 4.5 Inventory management techniques.

Technics	1	2	3	4	5
identified inventory requests throughout the entire organization using enterprise resource planning (ERP).	10(35.7%)	7(25%)	5(17.8%)	4(14.2%)	4(14.2%)
Getting the correct materials in the right quality at the right time by using the Just In Time (JIT) method.	1(3.5%)	1(3.5%)	2(7.1%)	10(35.7%)	15(53.5%)
Inventory is continuously tracked and ordered using the Continuous Review System (CRS).	2(7.1%)	4(14.3%)	3(10.7%)	14(50%)	7(25%)
employed the Periodic Review System (PRS) to review the position of the inventory throughout predetermined time periods.	10(35.7%)	8(28.6%)	5(25%)	3(10.7%)	2(7.1%)
To maintain an optimal inventory level, use Economic Order Quantity (EOQ).	2(7.1%)	1(3.5%)	4(14.3%)	14(50%)	6(21.4%)

Source: primary data 2023

Key: 1 = strongly disagree, 2 = disagree, 3 = unsure, 4 = agree, 5 = strongly disagree

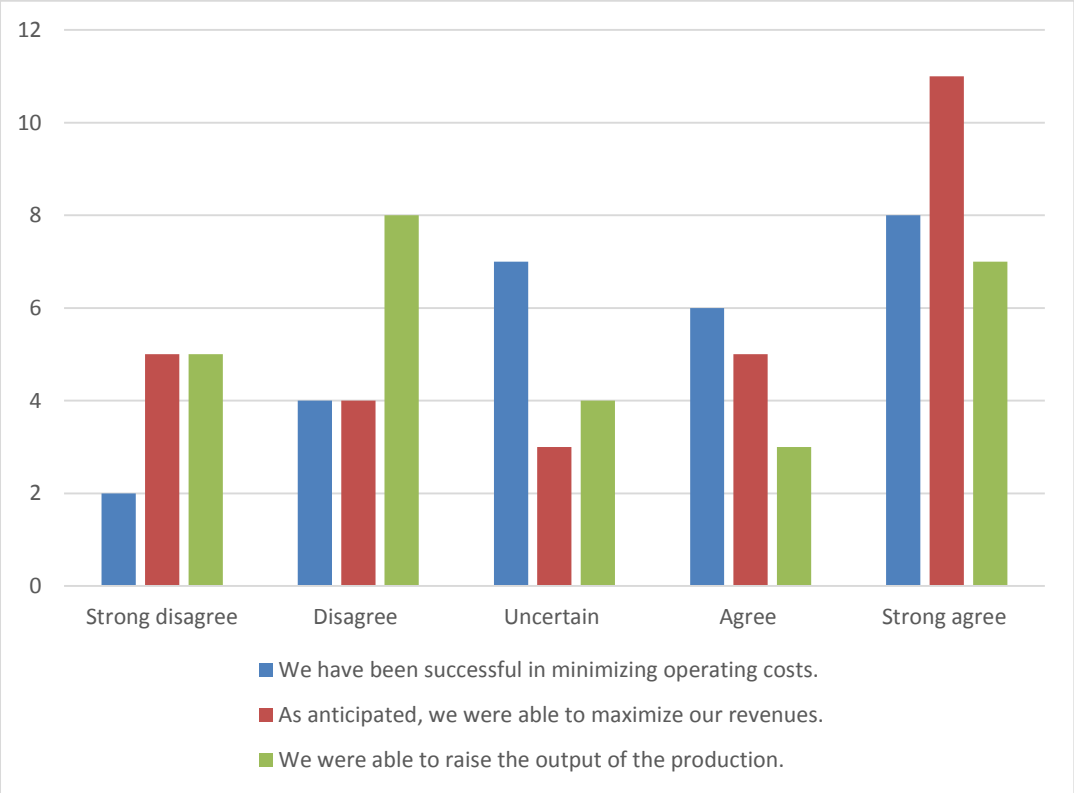
Table 4.5 results suggest that the respondents rated very high extent on JIT, CRS and EOQ as compare to other technics. The table indicates that the company prefer to use inventory management system which reduce storage cost and maintain continues flow of inventory. This is because JIT (Just-in-Time): JIT inventory management system aims to reduce inventory costs by receiving goods when they are needed rather than when they are ordered.

This system requires coordination between suppliers which is farmers and manufacturers to ensure the timely delivery of goods.

EOQ (Economic Order Quantity): EOQ inventory management system minimizes the total inventory cost by determining the optimal ordering quantity that balances the costs of order and holding. The system closely monitors the inventory levels and places the necessary orders to avoid stakeouts. Continuous Review System: The continuous review system involves setting up a fixed review period during which the inventory levels are assessed to determine if an order is needed. The system helps to keep inventory levels in check by ordering sufficient quantities at specific times.

4.5 The impact that inventory management systems have on The COTTCO Company's success.

Fig 4.5.1



Source primary data (2023)

From the bar graph above the findings are consistent with Hypothesis 1, which holds that businesses with strong inventory management practices have strong competitive advantages. The statistical support for Hypothesis 1 demonstrates that effective inventory management

practices directly enhance competitive advantage. Implementing inventory management procedures may significantly increase a company's ability to compete by offering better product delivery, quality, and pricing. This result is in line with research done in Kenya by Naliaka and Namusonge (Citation2015), who found that inventory management had an impact on manufacturing enterprises' ability to compete.

The second theory holds that methods of inventory management directly affect how well organizations work. Strong agreement on the aforementioned figure serves as additional evidence. The organization can enhance its performance in terms of profitability, output level, and cost efficiency by utilizing various inventory management techniques, such as ABC analysis, EOQ decision, customer relationship building, vendor management inventory, and JIT techniques.

4.6 The structural equation model's (SEM) results and hypothesis testing

A group of statistical models known as structural equation modeling (SEM) aims to shed light on the connections between various variables. It enables researchers to look at several dependent and independent variables' interactions at once. First and foremost, SEM allows for the testing of causal links between constructs using a variety of measuring items (Hair, Black, Babin, & Anderson, Citation 2006). Furthermore, it provides strong and exacting statistical methods to cope with complex models (Hair et al., Citation2006; Tabachnick & Fidell, Citation2009). The measurement model in this study was assessed using STATA's maximum likelihood (ML) estimation techniques.

Table 4.6.1. Model goodness of fit test

			CFI	RMSEA	TLI
criteria	**x2**	DF	**≥0.90**	**≤0.050**	**≥0.90**
Class1	47.37	41	0.982	0.028	0.978
Class 2	55.923	41	0.962	0.041	0.953
Class 3	75.35	41	0.913	0.064	0.884
Class 4	55	41	0.961	0.041	0.952

where x2=Chi Square, DF=Degree of Freedom, CFI=Comparative Fit Index, RMSEA=Root Mean Squared Approximation Error, and TLI=Tucker-Lewis Index.

The whole model has a good fit, as shown in Table, with CFI = 0.982, TLI = 0.978, and RMSEA = 0.028, which is very good. Three hypothesized correlations exist between the variables Inventory management techniques, Competitive Advantage, and Organizational Performance.

4.7 How effective inventory management affects profitability

Two levels of analysis were completed. The strength and importance of the relationship between raw material management and profitability of the Zimbabwean cottoco manufacturing company were first assessed using Pearson correlation. Second, multiple 4 regression analysis was used to determine the effect of raw material management on the profitability of the manufacturing organization. This is how the numerous regressions are expressed:

P = Profit (dependent variable) in (1) where P = o + iRM + 2SCt + 3Fxt + 4IM + Ui.

Raw materials, or RM, are made up of both domestic and foreign raw materials.

15% of the cost of sales goes toward storage.

FX stands for foreign exchange charges, which includes all foreign currencies bought for imports.

IM stands for maintenance, repairs, and operating materials (including engineering spares and other miscellaneous supplies). The regression's intercept is equal to o, and its coefficients are equal to i, i, 2, i, 3, and i.

The error term, Ui=, includes explanatory variables that are implicitly included in the model but not explicitly.

T stands for time.

Analysis and Discussion of Data The relationship between the independent raw material inventory management and the dependent variable profit was examined using Pearson product correlation. The outcomes are shown in Table below.

Table 4.7.1 The relationship between inventory management and profit

		P	SC	FX	IM	RM	
Pearson Correlation							
	P	1.00	0.602	0.201	0.751	0.935	
	SC	0.602	1.00	0.239	0.711	0.682	
	FX	0.201	0.239	1	0.214	0.427	
	IM	0.751	0.711	0.214	1	0.021	
	RM	0.935	0.682	0.427	0.021	1	
Sig (1-tailed)	P	-	0	0.411	0.02	0.001	
	SC	0	-	0.472	0.424	0	
	FX	0.411	0.472	-	0.212	0.072	
	IM	0.02	0.424	0.212	-	0.442	
	RM	0.001	0	0.072	0.442		

Source: primary data from cottco database (2023)

The following terms are important: profit (P), storage costs (SC), foreign exchange costs (FX), indirect materials (IM), and raw materials management (RM).

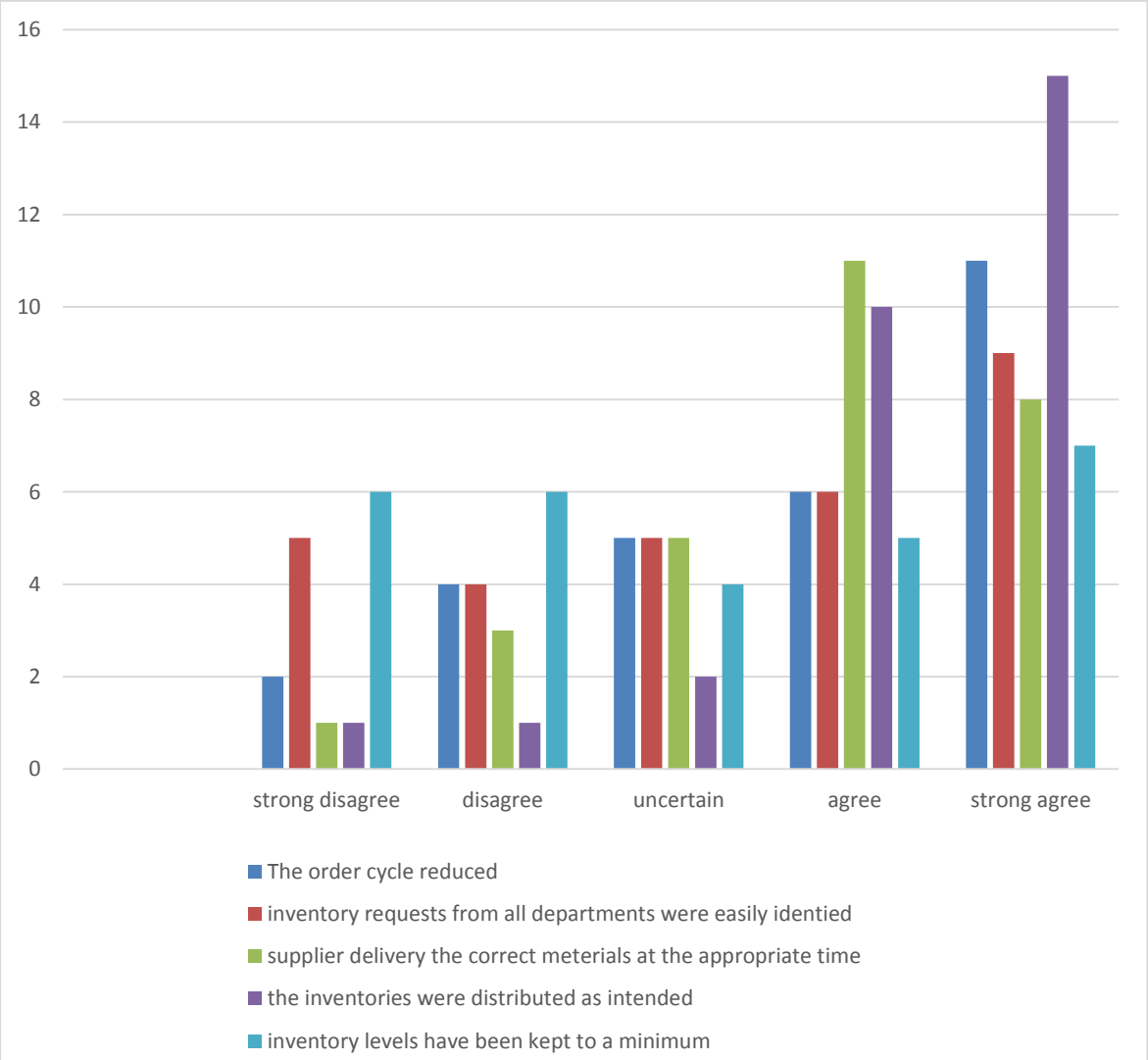
As can be seen from Table 4.6., inventory control of raw materials and manufacturing companies' profitability are positively correlated. This study has the consequence that manufacturing enterprises become more profitable as their raw material inventory management practices improve. Profitability will rise 9.35% with every 1% improvement in raw material inventory management. The relationship is 93.5% solid as a whole. With a significance value of 0.001, which is less than 0.05 (0.0010.05), the one-tailed test of significance revealed that the result is statistically significant.

The study now evaluates the following hypothesis: Ho: The study has found that there is a strong positive correlation between raw materials inventory management and profitability in manufacturing firms in COTTCO. Therefore, it can be concluded that efficient raw materials inventory management has a significant impact on the profitability of manufacturing firms.

H1: Powerful The management of raw material inventories has a big impact on how profitable manufacturing companies are in COTTCO. Given the foregoing, it is concluded that raw materials inventory management significantly affects the profitability of manufacturing businesses in the Cottco company and that the null hypothesis is rejected while the alternate hypothesis is accepted. This strongly suggests that effective inventory management of raw materials increases the profitability of Zimbabwe's industrial sector.

4.8 Results achieved with the use of inventory control management system in the supply chain division.

Table 4.8 Results of using inventory control system



The use of inventory control management systems in the supply chain division can achieve a number of results, including, Reduced inventory costs**,** Inventory control systems can help to

reduce inventory costs by ensuring that the right amount of inventory is on hand at the right time as shown by the fig above many respondents agreed to reduce order cycle. This can be done by using demand forecasting, reorder point, and economic order quantity (EOQ) models.

Improved customer service, Inventory control systems can help to improve customer service by ensuring that products are available when customers need them. This can be done by using just-in-time (JIT) inventory systems and vendor-managed inventory (VMI) systems, as shown by the fig 4.8 above inventories were distributed as intended. Increased profitability: Inventory control systems can help to increase profitability by reducing inventory costs and improving customer service. This can lead to increased sales and revenue, which can lead to increased profits.

4.9 Chapter summary

The data on research findings was given, analysed, and discussed in the chapter based on feedback from questionnaires distributed throughout the Cottco corporation of Zimbabwe. The chapter included a summary of the questionnaire and interview guide response rates as well as the outcomes or conclusions drawn from those research tools. The study findings were presented and analyzed using tables, graphs, and figures, and they were debated while taking the results of the literature review from chapter Two into account. The focus of the following chapter will be a summary of the study's findings, conclusions, and suggestions for improving the COTTCO's use of inventory management systems.

CHAPTER FIVE

5.0 INTRODUCTION

This study's main goal was to ascertain how the Cotton Company of Zimbabwe's inventory management systems affected organizational performance. The study's background revealed that mining businesses are underperforming because they are not using all of their capacity.

Additionally, the cotton industry's cottco company is hesitant to invest in contemporary computerized inventory management systems; instead, they continue to employ antiquated inventory management systems that are inefficient and are raising the cost of their inventory, which is significantly hurting their performance. Based on this study challenge, a thorough analysis into how inventory management systems affect organizational performance in the cotton industry was conducted. Thus, the primary research findings, conclusions, and research suggestions are summarized in this chapter.

5.1 Summary of research findings

The purpose of this study was to examine how the Cotton Company of Zimbabwe's organizational performance was impacted by its inventory management systems. The study's primary audience was the company's senior management and registered permanent employees. The research employed a quantitative survey methodology. The researcher discovered that inventory control methods improve organizational performance both directly and indirectly. Additionally, it was discovered that inventory management systems have less of a direct impact on organizational performance in the cotton industry than they do on purchasing performance when used in conjunction with inventory management systems. The results show that most of the time, inventory management systems have been indirectly linked to organizational performance through lead time control, optimal inventory level, and better purchasing performance.

5.2 Conclusions

The study aimed to establish a relationship between inventory management systems, lead time, inventory levels, purchasing performance, and organizational performance. It also proposed five critical elements of inventory management systems, which were supported by the empirical data collected from respondents. The study concluded that the implementation of inventory management systems has a positive effect on lead time, optimal inventory levels, purchasing performance, and organizational performance in the Cottco company in Zimbabwe. The hypotheses were all confirmed by the results of the study, which also

highlighted the existence of a purchasing performance metric that mediates the relationship between inventory management systems and organizational performance.

The results of this study generally imply that using inventory management systems to manage inventories has a beneficial direct and indirect impact on organizational performance. By enhancing profitability, production output, and cost effectiveness, the enhanced purchasing performance in COTTCO's supply chain departments through the use of inventory management systems may improve the company's performance. In order to support the literature on the impact of inventory management systems on organizational performance, this study offers empirical data.

5.3 Recommendations.

• Supply chain departments of businesses in Zimbabwe's cotton industry sector should implement cutting-edge inventory management systems like the economic order quantity (EOQ), continuous review system (CRS), ABC analysis, periodic review system (PRS), just-in-time (JIT) technique, and periodic review system (PRS), in order to improve inventory management procedures. This enables them to maintain the ideal inventory levels and successfully manage lead times, which enhances purchasing performance in their supply chain departments and, ultimately, enhances the performance of the entire company by raising profitability, production output, and cost effectiveness.

• In order to determine how inventory management methods are affecting business operations, companies in Zimbabwe's cotton industry must regularly execute performance measurement systems for inventory management, such as audits in supply chain departments.

5. 4 Research Suggestions for the Future

The author suggests that future studies should focus on the effects of modern computerized inventory management systems on organizational performance in various industries other than cotton, and using different systems than those employed in this study. Additionally, research on the impact of inventory management systems on purchasing performance is required to fill gaps in knowledge. This would aid in better understanding the impact of inventory management systems on organizational performance.

5.5 Summary

The chapter examined the study's summary, conclusions, and suggestions

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APPENDIX 1: PERMISSION TO CARRY OUT A RESEARCH

Bindura University of Science Education

P. Bag 1020 Bindura

06 may 2023

REF: AUTHORITY TO CARRY OUT A RESEARCH IN THE PROCUREMENT DEPARTMENT.

I do hereby ask for permission to carry out my research in your organisation. I am a student at Bindura University of Science Education (BUSE) studying a bachelor of commerce honours degree in Purchasing and Supply and I carried out my internship at your organisation in the Procurement department. I am carrying out a research on a topic: **The effectiveness of inventory management system on performance of a manufacturing company. A case study The Cotton Company of Zimbabwe (COTTCO)**. The research is being carried out in partial fulfilment of the requirement for the completion of the above-mentioned area of study. In this regard, I kindly ask for your assistance in filling the questionnaire. You are kindly requested to provide sincere and honest answers to the best of your knowledge. You are free to provide any answers you deem are appropriate. There is no right or wrong answer. Every answer shall have a special contribution to the research. Please be assured that this research is purely for academic purposes and the information you are going to provide will be treated with utmost confidentiality and will be used for this study only and to this end, it will not be published. On behalf of Bindura University, the researcher would like to promise no misuse of information so obtained. Your cooperation in filling the questionnaire is greatly appreciated.

Yours faithfully

Innocent Chikochi ……

innocentchikochi1996@gmail.com

0783513530

INNOCENT CHIKOCHI B190743B

Measurement Instrument

SECTION A: Demographic information

INSTRUCTIONS

- Please use the checkboxes below to select your best answer to each question about yourself.
- Each question demands a response, and you may choose only one.
- Do not fill out the questionnaire with your name.

Tick where appropriate.

1. What is your gender?

Male	
Female	

2. How old are you?

18-24	
25-35	
36-45	
46-55	
55 above	

3. Level of Education

Certificate	
Diploma	

Undergraduate degree	
Postgraduate degree	

4. Department

Procurement	
Diploma	
Undergraduate degree	
Postgraduate degree	

5. Position at work

Director	
Senior management	
Medium level management	
Low level management	
Clerks	
Others	

6. How many years have you worked at The Cottco Company of Zimbabwe?

0-1	
2-4	
4-6	

7 and above	

SECTION B INSTRUCTIONS:

Use the following scale to show your responses:

1 = strongly disagree, 2 = disagree, 3 = uncertain, 4 = agree, 5 = strongly agree

Question: In your organization, how do you use the inventory control methods listed below?

No	Item	Strong disagree	Disagree	Uncertain	Agree	Strong agree
7.	Enterprise Resource Planning (ERP) has been utilized to identify inventory requests throughout the entire organization.	1	2	3	4	5
8.	To get the correct materials in the right quality at the right time, we employed the Just in Time (JIT) technique.	1	2	3	4	5
9.	To manage the distribution of inventories, we have adopted Distribution Requirements Planning (DRP).	1	2	3	4	5
10.	We have been tracking and ordering inventories continually with the Continuous Review System (CRS).	1	2	3	4	5
11.	To keep our inventory level at its ideal level, we have implemented economic order quantity (EOQ).	1	2	3	4	5
12.	For the purpose of tracking the inventory situation at predetermined intervals, we have adopted the periodic review system (PRS).	1	2	3	4	5

Question: How have you managed inventory levels using inventory management systems?

13.	We were able to keep inventory levels at optimal levels.	1	2	3	4	5

Question: What results have you achieved with the use of inventory management systems in your supply chain division?

14.	The order cycle time has been reduced.	1	2	3	4	5
15.	Inventory requests from all departments were easily identified.	1	2	3	4	5
16.	Suppliers delivered the correct materials at the appropriate time.	1	2	3	4	5
17	Inventory levels have been kept to a minimum.	1	2	3	4	5
18.	Every department's inventory requirements were met as predicted.	1	2	3	4	5
19.	The inventories were distributed as intended.	1	2	3	4	5

Question: What impact has the use of inventory management systems had on your organization's performance?

20.	We have kept running costs to a bare minimum.	1	2	3	4	5
21.	As planned, we were able to maximize our revenues.	1	2	3	4	5

22.	We were able to boost production output.	1	2	3	4	5

Question: What has your department's supply chain's experience been like with lead times?

23.	Longer lead times and stock outs have both happened to us.	1	2	3	4	5
24.	The lead time has been shortened.	1	2	3	4	5
25.	We have kept our inventory levels at their ideal levels despite shorter lead times.	1	2	3	4	5

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