FACTORS INFLUENCING WAREHOUSE INVENTORY MANAGEMENT PERFORMANCE: A QUANTITATIVE STUDY

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DECLARATION

We hereby declare that:

(1) This undergraduate FYP is the end result of our own work and that due acknowledgement has been given in the references to ALL sources of information be they printed, electronic, or personal.

(2) No portion of this FYP has been submitted in support of any application for any other degree or qualification of this or any other university, or other institutes of learning.

(3) Equal contribution has been made by each group member in completing the FYP.

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DEDICATION

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LIST OF ABBREVIATIONS

WMS	Warehouse Management Systems
AGVs	Automated Guided Vehicles
RFID	Radio-Frequency Identification
JIT	Just-In-Time
AS/RS	Automated Storage and Retrieval Systems
EPOS	Electronic Point of Sale
CAGR	Compound Annual Growth Rate
OMS	Order Management Systems
TMS	Transportation Management Systems
SKUs	Stock Keeping Units
EOQ	Economic Order Quantity
IT	Information Technology
TOC	Theory of Constraints
RBV	Resource-Based View
RDT	Resource Dependence Theory
SSPs	Strategic Supplier Partnerships
IMP	Inventory Management Performance

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PREFACE

This study was driven by the recognition that aspects such as robust documentation practices, advanced technological integration, and strategic supplier partnerships are pivotal to effective inventory management but remain under-explored in academic and industry discussions. These elements, while acknowledged, often lack the granular focus required to develop actionable strategies that address real-world challenges.

This study aims to address this gap by examining how these factors impact warehouse inventory management performance. By focusing on the integration of technology and the importance of supplier partnerships, we seek to uncover practical insights that organizations can use to enhance their inventory management practices.

The goal of this research is to provide actionable strategies to improve warehouse operations, helping organizations achieve greater efficiency, sustainability, and competitive advantage. Through this work, we aim to contribute meaningful solutions to one of the most vital aspects of modern supply chain management.

ABSTRACT

This study examines the factors influencing warehouse inventory management performance in Malaysian warehouses, specifically focusing on the roles of documentation, technology, and strategic supplier partnerships. This quantitative study, involving 128 participants from Malaysia's different sectors such as logistics and transportation, food and beverage, semiconductor fabrication and assembly, and so on to assess their perspectives on how documentation, technology, and strategic supplier partnerships influence warehouse inventory management performance. Grounded in Theory of Constraints (TOC), Resource-Based View (RBV), and Resource Dependence Theory (RDT), the research explores the relationship between inventory management performance and documentation, technology, and strategic supplier partnerships. Data were collected through structured questionnaires and analysed using Pearson Correlation Coefficient through the SPSS software. The research found that while documentation showed limited impact, technology and strategic supplier partnerships had a significant positive influence on inventory performance. These findings suggest that adopting advanced technology and fostering strong supplier relationships are critical to improving warehouse efficiency. The study also concludes with recommendations for future research to further enhance inventory management practices.

CHAPTER 1: RESEARCH OVERVIEW

1.0 Introduction

Chapter 1 explores the factors influencing warehouse inventory management performance, focusing on the relationship between performance and key elements such as documentation, technology, and strategic supplier partnerships. The study aims to identify how these factors interact to optimize warehouse operations, providing businesses with insights into effective inventory management strategies that can enhance operational efficiency and competitiveness. This chapter also outlines the research background, objectives, study hypotheses, and the challenges that motivated the research. Additionally, the chapter highlights the significance of the study and presents its structure.

1.1 Research Background

Modern supply chains are complex systems that interconnect the globe. Efficient supply chains can control costs and ensure delivery to customers with minimal delays and interruptions (Kanike, 2023). Inventory management is a key component in achieving these goals, involving both the technological systems that support the process and the management practices that guide their use. Warehouse inventory management is a crucial process that involves the receipt, tracking, auditing, and management of products within a warehouse (Stephen, 2022). This dual focus on systems and practices ensures that businesses can operate smoothly and efficiently. It encompasses activities such as monitoring inventory levels, managing inventory turnover, and optimizing inventory to meet customer demands. By implementing robust inventory management practices, businesses can minimize the risks of stockouts, reduce excess inventory, and ensure they have sufficient stock to meet customer needs. This not only enhances customer satisfaction but also contributes to lowering operational costs and boosting overall warehouse productivity (Hiba Saleem, 2024; Shukaili et al., 2023).

In the context of modern warehousing, the role of advanced technologies and well-executed management practices has become essential. The systems including Warehouse Management Systems (WMS), robotics, Automated Guided Vehicles (AGVs), and Radio-Frequency Identification (RFID), provide the tools for efficient operations. Effective management practices, such as training and strategic planning, ensure that these systems are implemented and used to their full potential. Current practices include inventory control techniques such as ABC analysis, Just-In-Time (JIT) inventory management, economic order quantity calculations, and safety stock strategies, all essential for optimizing warehouse operations.

Despite the critical role of both inventory management systems and management practices, warehouses face numerous challenges. Issues such as inaccurate inventory tracking, inefficient warehouse operations, and outdated technology can hinder performance. The combination of inaccurate inventory tracking, inefficient warehouse operations, and outdated technology significantly undermines inventory management performance. These issues lead to lower accuracy and reliability in inventory records, making it challenging to optimize stock levels, plan replenishments, or manage supply chain operations effectively. As a result, operational efficiency is reduced, driving up costs through higher labour, increased storage expenses, and frequent errors. However, there are significant opportunities for improvement, particularly through the adoption of automation and robotics, the implementation of sustainability initiatives, and the enhancement of employee skills through training and development.

In Malaysia, the warehousing industry is rapidly evolving, driven by increased demand from sectors such as e-commerce and manufacturing. However, many warehouses still rely on traditional methods, which can lead to inefficiencies and errors. The integration of automated systems, such as Automated Storage and Retrieval Systems (AS/RS) and AGVs, can significantly enhance operational efficiency, reduce labour costs, and minimize errors. Furthermore, sustainability has become a key focus, with efforts to implement energy-efficient equipment, optimize warehouse layouts, and adopt sustainable packaging practices, all of which can reduce environmental impact and operating expenses (Ecklund, 2010).

Additionally, investing in employee training and development is crucial for enhancing inventory management performance. As technology continues to advance, warehouses need skilled personnel who are adept at using cutting-edge tools and best practices to streamline processes and minimize errors (Mecalux, 2023). Recent trends in the industry highlight a shift towards increased automation, a focus on sustainability, omni-channel integration, and the adoption of blockchain technology for secure inventory tracking. The global warehouse management system market was estimated at USD 3.94 billion in 2023 and is expected to increase at a compound annual growth rate (CAGR) of 19.5% from 2024 to 2030, with Malaysia expected to see a compound annual growth rate (CAGR) of 19.72% between 2021 and 2026, reflecting the increasing importance of advanced inventory management systems in the region (Analyze the Current State of Smart Warehouse and Its Trends, Challenges, and Opportunities, Including Relevant Data and Statistics in Malaysia - DNC, 2023; KHOR, 2017; Warehouse Management System Market | WMS Industry Report, 2025, 2024; Karim et al., 2018).

This research aims to investigate and determine the factors influencing warehouse inventory management performance, focusing on the critical elements of documentation, technology, and strategic supplier partnerships. Understanding these factors is essential for businesses in Malaysia looking to improve their inventory management practices, optimize warehouse operations, and enhance competitiveness in the global market.

1.2 Research Problems

Effective inventory and order flow, often known as inventory management, is a component of efficient supply chain management. In recent years, there might be serious risk ramifications for privacy and legal obligations if controls are not implemented (Lennane, 2024). Overall company performance can be greatly improved by effective inventory management. A well-managed inventory system ensures efficient allocation of resources, accurate demand forecasting, and a streamlined inventory replenishment process that allows a company to respond quickly to market demand and avoid unnecessary expenses. By optimizing these aspects, higher operational efficiency can be achieved, and overall performance can be improved (Karim et al., 2018).

Over the next five years, 54% (1225) of warehouses plan to increase the number of inventory SKUs they carry to achieve optimal warehouse inventory management performance. It is imperative to implement item-level tagging because, when done correctly, it can increase inventory accuracy from 63% to an astounding 95%. Businesses can achieve a 90% accuracy rate in demand forecasting with machine learning, even with a three-month lag. This is a significant improvement over the 60% accuracy that can be obtained with manual methods. 75% of supply chain management experts are concentrating on improving their inventory management procedures because they understand how important these changes are. In the end, companies can save 10% on their total inventory costs by cutting down on both stock-outs and overstocks, which will improve operations and save costs (Inventory Management Statistics 2023 in Malaysia, 2023).

Despite advances in warehouse inventory management, inventory inaccuracies remain a persistent problem, with many records being incomplete or incorrect due to reliance on manual processes. These inaccuracies often lead to overstocking or understocking, while challenges such as the wide variety of products and insufficient knowledge of specifics like sorting dates and times further complicate product sorting, hindering efficient processing and potentially causing delivery delays (Manjrekar et al., 2021). Many businesses, whether manufacturers or distributors, encounter substantial issues in efficiently managing their inventory, which can negatively affect their financial performance. A common problem is the discrepancy between physical inventory and system records, often discovered only during year-end stock counts. Such exceptionally, including missing goods, can remain undetected throughout the year, resulting in hidden losses (Chuang & Oliva, 2015). These inaccuracies severely undermine profitability, as by the time they are identified, it is often too late to implement corrective measures, leading to avoidable reductions in profit. Effective inventory management is essential for maintaining financial stability, yet many companies struggle to achieve the necessary accuracy and control in their processes (Karim et al., 2018).

Inadequate inventory visibility can also result in poor inventory level assessment, which can cause shortages or overbuying of essential goods. This is generally due to a lack of real-time updates or system integration. In addition, returns management can be a problem, as returns are sometimes mixed with shipments, leading to delivery errors or even accidental resending of returns (Manjrekar et al., 2021).

Attaining optimal performance is being impeded by current warehouse inventory management problems. A startling 74% of companies reported experiencing a shortage of essential components and supplies, which had an impact on all industries. Additionally, one-third of companies sell things that aren't really in stock, which causes them to miss shipment deadlines. To make matters worse, 7% of small businesses don't keep any inventory records at all, aggravating these issues. The primary cause of inefficiencies in 46% of warehouses nowadays is still human error. Demonstrating how far short of optimal warehouse inventory management current practices are (Inventory Management Statistics 2023 in Malaysia, 2023; Leads List of Warehouses in Malaysia, 2024).

Ahmad et al. (2015) stated that a component of the supply chain, inventory management has always been the subject of previous literature. Many studies in the manufacturing (Chalotra, 2013), automotive (Othman & Falsafah, 2012), service logistics (Rahman & Laosirihongthrong, 2008), motor industry (Hussain & Waveren, 2009), retailing Rajwinder et al. (2010), and integrated operations strategy (Kannan & Tan, 2005) have been done to ascertain the relationship between supply chain and organization performance. Rajwinder et al. (2010) investigated the relationship between competitive advantage, organizational performance, and organized retail supply chain management practices. Othman & Falsafah (2012) studied supply chain strategy and practices toward the performance of the supply chain in the automobile industry. A different researcher took a closer look. Jonsson & Mattsson (2008) investigated how inventory management practices affected how planning performance was perceived, while van Heck et al. (2010) went into greater detail in their suggested framework for enhancing inventory management performance using a process-oriented measurement framework. Agus & Hajinoor's (2012) research in Malaysia examined how supply chain management and inventory practices were oriented towards the level of performance in the industry. Research on the relationship between inventory management performance and practices, however, is scarce (Kagashe & Terevael, 2012).

To address the challenges and research gaps identified in the existing literature, this study proposes to explore and analyze the various factors influencing warehouse inventory management performance in Malaysia. These factors, including persistent inventory inaccuracies, reliance on manual processes, and inadequate system integration, contribute to reduced accuracy, inefficiency, and higher operational costs. Given these impacts on performance metrics such as inventory accuracy rates, fulfillment speed, and resource allocation, this research aims to contribute to a deeper understanding of these problems within the Malaysian context. By investigating the specific challenges faced by Malaysian warehouses, including the root causes of discrepancies and inefficiencies, this study will identify strategies that can be implemented to enhance inventory accuracy, operational efficiency, and overall warehouse performance. The findings from this research will not only fill the existing knowledge gap but also offer practical solutions that can be adopted by warehouse managers and supply chain professionals in Malaysia to achieve optimal inventory management performance.

1.3 Research Objectives & Research Questions

1.3.1 General Objective

RO: To investigate the factors influencing warehouse inventory management performance.

1.3.2 Specific Objectives

RO1: To examine the influence of documentation on warehouse inventory management performance.

RO2: To examine the influence of technology on warehouse inventory management performance.

RO3: To examine the influence of strategic supplier partnerships (SSPs) on warehouse inventory management performance.

1.3.3 Research Questions

RQ1: Is there an influence of documentation on warehouse inventory management performance?

RQ2: Is there an influence of technology on warehouse inventory management performance?

RQ3: Is there an influence of strategic supplier partnerships on warehouse inventory management performance?

1.4 Hypotheses of the Study

H1: There is an influence of documentation on warehouse inventory management performance.

H2: There is an influence of technology on warehouse inventory management performance.

H3: There is an influence of strategic supplier partnerships on warehouse inventory management performance.

1.5 Research Significance

The significance of this research is rooted in its potential to address a critical gap in the existing body of knowledge. While warehouse performance has been extensively studied, there is a noticeable scarcity of research that specifically examines the relationship between various variables and warehouse inventory management performance. This study seeks to fill that gap by identifying and analyzing the key elements that influence inventory management performance within the context of Malaysian warehouses.

Our investigation is theoretically significant because it improves the supply-demand balance of different systems, reduces expenses, and increases operational effectiveness. Implementing systematic ordering, production, and distribution techniques will assist in supply chain partners' collaboration. Then, understanding the theoretical significant of inventory management can help with resource allocation optimization. By identifying the best order amounts, cutting waste, and controlling storage space, for instance, the implementation of Economic Order Quantity (EOQ) and Just-In-Time (JIT) enables businesses to allocate resources effectively.

As businesses in Malaysia face increasing demands for efficiency and accuracy in their supply chains, understanding the factors that impact warehouse inventory management is crucial. Effective inventory management directly affects a company's ability to meet customer expectations, control costs, and maintain a competitive edge in the market. By focusing on the Malaysian context, this research will provide localized insights that are vital for businesses operating in the region, helping them to optimize their inventory management practices and improve overall operational performance.

The study's approach is particularly significant because it goes beyond merely identifying influencing factors; it involves an in-depth examination of three selected variables that are hypothesized to have a substantial impact on warehouse inventory management performance. This focused analysis will allow for a deeper understanding of how these factors interact and contribute to the effectiveness of warehouse operations. The results of this study will offer valuable evidence-based recommendations that businesses can implement to enhance their inventory management systems.

Another key aspect of this research is its cross-industry analysis. While many studies tend to focus on a single industry, this research recognizes the importance of understanding how these variables impact warehouse inventory management across different sectors. By investigating the influence of these factors in multiple industries simultaneously, the study aims to provide a more comprehensive perspective that can be applied across diverse business environments. This broader approach ensures that the findings are not only relevant to specific industries but are also adaptable to various industrial settings.

In summary, this research holds significant value for both academia and industry. It will contribute to the academic understanding of the factors influencing warehouse inventory management performance and provide practical insights that can be used by industry professionals to improve their operations. The findings of this study will have the potential to drive improvements in warehouse efficiency, reduce costs, and enhance overall supply chain performance in Malaysia, with implications that could extend to other regions facing similar challenges.

1.6 Scope of Study

The study investigates the factors (documentation, technology, and strategic supplier partnerships) influencing warehouse inventory management performance across companies within Malaysia. The top management levels who work on the warehouse operations or management serve as the unit of analysis.

1.7 Operational Definitions of Terms

To establish a shared understanding of key terms often interpreted differently, the following definitions are provided for clarity within this research.

1.7.1 Warehouse Inventory Management Performance

Refers to how effectively and efficiently a warehouse handles its inventory. This performance metric reflects the warehouse's ability to manage stock effectively, achieve business objectives, minimize costs, and meet market demands. It encompasses all warehouse activities from the arrival of goods until their dispatch.

1.7.2 Documentation

Also known as "stores record". Refers to the systematic process of capturing, storing, and analyzing information related to inventory management. Effective documentation and record-keeping help organizations track inventory movements, reduce errors, and support efficient stock control and auditing processes.

1.7.3 Technology

Refers to the tools and systems, particularly in Information Technology (IT), used to improve information processing, communication, and management within a warehouse. This includes computers, software, networks, and specialized systems such as EDI and EPOS, which streamline operations such as inventory management and stock control.

1.7.4 Strategic Supplier Partnerships

Strategic supplier partnerships involve long-term, collaborative relationships between firms and their suppliers, focused on shared goals. Just as with customer relationship management, companies must build strong connections with their suppliers. These partnerships often include practices like VMI for more optimized operations and outcomes.

1.8 Chapter Summary

Chapter 1 introduces the research on factors affecting warehouse inventory management performance in Malaysian warehouses, emphasizing the roles of documentation, technology, and strategic supplier partnerships. It highlights challenges like inventory inaccuracies and inefficiencies, outlines research objectives, questions, and hypotheses, and underscores the study's significance in addressing knowledge gaps and offering actionable insights. Key terms are defined for clarity, establishing a foundation for the study's exploration in subsequent chapters.

CHAPTER 2: LITERATURE REVIEW

2.0 Introduction

This chapter covers all relevant scholarly literature on the research topic. This chapter includes an examination of the foundational theories, conceptual framework, and developed hypotheses to assess the validity of the proposed theories. Reviewing the literature helps improve comprehension of the research issue and find unexplored areas.

2.1 Underlying theories

2.1.1 Theory of Constraints (TOC)

The Theory of Constraints (TOC), a concept developed by Eliyahu Goldratt, is a management philosophy that focuses on identifying and addressing the most critical limiting factor, or constraint, within any given process to enhance overall system performance. The fundamental premise of TOC is that a system’s performance is limited by its weakest link, much like a chain is only as strong as its weakest link. Therefore, improving the weakest part of the system leads to significant improvements in overall performance. When applied to inventory management, TOC can significantly influence performance by targeting the constraints that limit the efficiency and effectiveness of inventory control processes. The idea of constraints in inventory management aims to determine the optimal inventory level to prevent shortages due to market volatility (“Theory of Constraints (TOC) Management System Fundamentals,” n.d.; Tundura, 2016).

The Theory of Constraints (TOC) is crucial for optimizing inventory management as it focuses on identifying and eliminating bottlenecks that impede the smooth and efficient flow of inventory. TOC operates on the principle that the overall performance of a system is determined by its weakest link, much like how a chain is only as strong as its weakest link. To address these bottlenecks, TOC employs a structured five-step method. The first step involves identifying the constraint, which is the most critical limiting factor affecting inventory management. This step is followed by exploiting the constraint, which means maximizing its efficiency and ensuring that it operates at its full potential. The next step is subordinating everything else to the constraint, aligning all other processes and resources to support and not hinder the constraint. Once the constraint is fully exploited and subordinated, the process moves to elevate the constraint, which involves making necessary investments or changes to remove or mitigate the bottleneck. Finally, to ensure continuous improvement and prevent the re-emergence of constraints, TOC advocates for repeating the process (Panigrahi et al., 2019; Atnafu & Balda, 2018).

This strategy improves production planning and control (PPC), lowers machine downtime, tool breakage, order scheduling, and boosts throughput while lowering inventory levels and operating costs. However, issues like extended lead times, inadequate inventory, and emergency orders must be addressed. Finally, TOC seeks to maximize efficiency and profitability by properly managing restrictions and enhancing inventory management procedures (Panigrahi et al., 2019; Atnafu & Balda, 2018).

Besides that, the Theory of Constraints (TOC) is also crucial for understanding how documentation impacts inventory record accuracy and management performance. Inaccurate documentation can be a significant constraint, leading to stockouts, overstocking, and inefficiencies. TOC suggests first identifying this constraint and then improving documentation processes, such as regular audits, cycle counting, and computerized systems, to ensure accurate records (Bickbashy & Saleem, 2024).

Prioritizing accurate record-keeping through staff training, advanced software, and robust validation procedures is essential. Elevating the constraint involves adopting advanced technologies like RFID and integrated supply chain software for real-time updates. Continuous improvement through regular reviews ensures sustained accuracy. Accurate documentation enhances operational efficiency by reducing errors and delays, minimizing holding costs, and ensuring reliable order fulfillment, which boosts customer satisfaction. It supports informed decision-making and regulatory compliance by providing a clear audit trail. Applying TOC principles to documentation helps organizations systematically address constraints, improving overall inventory management performance (Bai et al., 2020).

The use of technology in warehouse inventory management performance relates to the Theory of constraints (TOC). To increase overall system performance, TOC focuses on locating and resolving bottlenecks or limitations. In this case, technology offers instruments and strategies to improve the application of TOC principles. As is typical in warehouse inventory management, technology can improve TOC. For example, ERP systems or real-time analytics of information can improve TOC installation by increasing visibility, reliability, and decision-making when finding and addressing constraints.

Additionally, TOC can incorporate a continual method for system optimization, enhanced by technology that efficiently evaluates modifications, generates circumstances, and monitors data. With a methodical approach to resolving issues technology may also improve analysis and visualization to identify the underlying reasons and provide solutions. Although they are interconnected, TOC is not totally dependent on technology; its development has been more widely focused on controlling restrictions within an organization. Although not being reliant on technology, TOC can be made more effective with the guidance of strong technological tools (SPENCER & COX, 1995).

Theory of Constraints (TOC) can be used to recognize weak areas within the supply chain process so that appropriate fixes can be made. Specifically, supplier partnerships are crucial to achieving inventory management performance. To prevent fragile connections in the supply chain because of bad connections, it is crucial to maintain effective relationship management (Kosgei & Gitau, 2016). TOC gains from collaborations that prioritize strategies for the future over temporary ones. Strategic partnerships also provide priority to long-term relationships above transactional experiences, which is consistent with TOC's belief that ongoing alignment and mutual commitment are the keys to lasting progress. In addition, these collaborations can foster collaborative problem-solving, which may help in the creation of creative answers to limitations that could restrict output (James, 2023).

2.1.2 Resource-Based View (RBV)

Birger Wernerfelt introduced the Resource-Based View (RBV) and refined by Jay B. Barney and other scholars (Kshetri, 2021). The Resource-Based View (RBV) theory in strategic management identifies the sources of a firm’s competitive advantage. It highlights two key internal sources: unique resources and their effective application. Efficient use of these resources can enable long-term competitive advantage (Akinlabi, 2021). RBV Theory has two main assumptions; (i) organizational resources within an industry may differ, and (ii) those resources may not be movable across firms (Rashid & Rasheed, 2023). Enterprises gain a competitive advantage by using unique resources that differ from competitors. The Resource-Based View (RBV) theory’s second premise is that these resources are non-movable and non-transferable, meaning they don’t easily shift between companies. Thus, a corporation gains an edge by possessing critical, unique resources that competitors lack (Akinlabi, 2021).

The RBV theory explains how technology generates value by enhancing valuable resources or processes, leading to improved firm performance and competitive advantage. In warehouses, technology adoption aims at cost reduction and revenue generation, improving operations. Such improvements result from resource synergy across the supply chain, aligning with RBV's focus on synchronizing supply, production, and delivery (Kithinji, 2015). By leveraging technology to improve and synchronize resources and processes, warehouses can achieve substantial gains in performance, reduce operational costs, and gain a competitive edge in the market.

The RBV theory also stresses strategic alliances as valuable intangible assets that help businesses gain a competitive edge by improving supply chain linkages and operational efficiency. Isolating mechanisms such as corporate culture, management capabilities, information asymmetries, and property rights all contribute to the creation of imitation barriers, making it difficult for competitors to reproduce the firm's performance. The RBV framework also emphasizes the importance of supplier segmentation based on strategic value, tactical capabilities, and potential. Effective supplier management, including timely payments and conflict resolution, is critical for maximizing delivery efficiency and maintaining a competitive advantage (Jaja et al., 2024; *View of Influence of Strategic Supplier Relationship on Supply Chain Performance in Manufacturing Firms in Nairobi Country*, 2024).

2.1.3 Resource Dependence Theory (RDT)

Resource Dependence Theory (RDT) examines the interactions between organizations and their external environment, emphasizing the dependencies that develop as organizations require resources controlled by others. The theory holds that organizations are not self-sufficient and must manage interactions with other entities to obtain crucial resources. The goal is to minimize dependency on external sources while maximizing control over resource acquisition (Pfeffer & Salancik, 1978).

In the context of strategic supplier relationships, RDT is particularly relevant. Strategic supplier partnerships are essential for managing resource dependencies effectively. Organizations can obtain access to key resources like raw materials, technology, and information by building strong, mutually beneficial connections with their suppliers (Jajja et al., 2019). These partnerships help mitigate risks associated with resource shortages and supply chain disruptions, thereby enhancing organizational stability and performance (Donato, 2016).

Resource Dependence Theory (RDT) offers several theoretical insights into managing strategic supplier relationships. First, RDT emphasizes the importance of reducing dependency on any single supplier by diversifying the supplier base or forming strategic alliances. This diversification helps organizations secure a stable supply of resources and lessen the risks associated with over-reliance on one source (European Proceedings, 2019). Second, strategic supplier relationships can shift power dynamics within the supply chain, allowing organizations to negotiate more favorable terms and ensure priority access to resources, which balances power between organizations and suppliers. Third, RDT highlights how these partnerships enhance resource control and collaboration. By working closely with suppliers, organizations can better manage the flow of resources and align their processes with those of their partners, thus reducing uncertainties and improving efficiency (Donato, 2016). Finally, effective management of strategic supplier relationships enables organizations to adapt to market changes more flexibly, as aligning strategies with suppliers allows for greater responsiveness to evolving conditions.

2.2 Review of variables

2.2.1 Warehouse Inventory Management Performance

Warehouse inventory management performance refers to the execution of work as it is carried out in the warehouse. According to Öz and Özyörük

(2021), performance measurement involves evaluating specific actions or activities to determine their efficiency and effectiveness. The primary objective is to assess whether the current situation meets optimal standards, and if not, to promptly identify and address the causes of poor performance. In our study, the performance measurement that we use is to evaluate the efficiency and effectiveness of inventory management performance. This is because of this performance measurement can well explain the linkage of inventory management performance with documentation, technology and strategic supplier partnerships. Complete and accurate documentation can be a powerful incentive to improve efficiency and facilitate the inventory management process. Appropriate use of technology can increase the efficiency of the operation and make the working result more accurate. In addition, efficient and effective communication with strategic partners can eliminate unnecessary errors and enhance inventory management performance.

Warehouse performance is typically assessed across four key areas: input, output, efficiency, and effectiveness (Kumar et al., 2021). Effective inventory management performance results in seamless production and distribution operations, reduced wastage, and improved financial outcomes for the organization.

Crisan et al. (2023) categorized warehouse performance metrics into three broad categories: order fulfillment, inventory management, and overall warehouse performance. Achieving effectiveness and efficiency in inventory management performance requires adherence to a set of activities and metrics that include a range of activities and measurements. This performance is measured by the alignment of inventory management processes with organizational goals, which minimizes inventory holding costs, ensures order accuracy, reduces lead times, and improves overall operational efficiency.

Jossep (1999) indicates that inventory management is the art and science of managing and maintaining inventory levels of specific items using the lowest possible cost and in line with the relevant goals and objectives formulated by management.

Inventory management encompasses all of the processes involved in generating and controlling inventory levels of raw materials, semi-finished materials (work-in-progress), and finished goods to ensure enough supplies are available while minimizing the expenses of over- or under-stocking. Inventories are critical to ensuring production, market continuity, and the distribution system. They act as a facilitator and launch pad for production and distribution systems, allowing manufacturing companies to run smoothly and efficiently by decoupling separate components of the overall operation. Proper inventory management focuses on material planning and control, aiming to balance high-quality commodity availability with minimized inventory costs (Mesay, 2022).

Inventory management has a tremendous impact on an organization's productivity (Almrdof & Attia, 2021). Its primary goals include advising managers on re-order quantities, timing, frequency, and safety stock levels to prevent stockouts. The overarching purpose is to balance having necessary inventory while minimizing stockouts. Additionally, effective inventory management aims to maintain inventory levels at the lowest possible cost while ensuring consistent and adequate supplies to support operational continuity. Effective inventory management is essential for any organization and is influenced by trends toward greater integration of logistics activities beyond organizational boundaries to reduce costs (Bogale, 2018).

2.2.2 Documentation

Umaru (2016) emphasizes that maintaining accurate inventory records is crucial for meeting project or repair demands, analyzing inventory levels, disposing of excess stock, and ensuring satisfactory customer service.

Besides, stock records should keep track of the receipts, issues, and stock balances for each individual item stored in the warehouse on a daily basis. Stock records give management the data needed to ensure accountability through stocktaking and stock audit exercises. Records can be posted manually, but mechanical methods are frequently more efficient in situations where the volume and complexity of the documents handled account for a significant portion of the total. Compared to the computer posting system, manual posting is slower, more prone to errors, and more likely to be misplaced or lost as a result of repeated handling.

According to Mesay (2022), maintaining documentation and stores record is crucial for guaranteeing accountability, streamlining coordination among providers, and enhancing service quality. Sustaining long-term client relationships is ensured by maintaining accurate records and documentation, which offer a more comprehensive history of each customer's needs. Second, the organization carries out its duties with effective recording and documentation systems. When offering services, inventory management techniques like documentation and records will give clients access to pertinent data and records whenever they need it. By assisting staff in organizing their thoughts, and maintaining accurate records and documentation will also result in better services for the customers. The records that track the inventory are the most crucial documents and store records when it comes to inventory management procedures. It enables the staff to physically monitor every movement in the stocks.

Documentation is a stock record system that allows for the efficient collection, storage, and use of information to support store operations and inventory control. It also provides a platform for the analysis and utilization of this data. An inability to maintain accurate inventory records could lead to an inability to control the inventory (Bogale, 2018; Atyam, 2010).

According to Demissie (2015), it is possible to draw the conclusion that some elements of the organization's current stock records practice had an impact on how well inventory control worked, inefficiencies in updating previously accumulated documentation work, a delay in updating inventory records used for stock control, and ultimately an indirect violation of inventory control regulations as a result of late entry. Inventory control was significantly impacted by the lack of a set time or date for posting inventory records. Organizational inventory control was impacted by manual recording systems and posting delays that resulted in disparities between actual and physical stock balances.

2.2.3 Technology

Technology covers a wide range of equipment and machines capable of data capture, processing, and transmission, as well as complicated computer, software, and networked systems that facilitate data analysis and communication. It extends beyond technological products to include the use of knowledge and tools to solve issues, improve processes, and develop human capacities in a variety of sectors, including education and social structures, where changes can lead to positive outcomes (Kambura Ngatuni, 2018; Dhodi, 2018).

As stated earlier, information technology is the engine of any business. To succeed in this field, information technology is a must for warehouse managers. The computer is the main ICT tool that supports inventory control by calculating the ideal stock levels and dispatch quantities. This allows the determination of the optimum quantity of goods to be kept and dispatched to meet user requirements. Inventory variables (stock levels, demand and delivery dates) can be compared by the computer to achieve this goal (Nduta Gitau, 2016; Kwame & Ampadu, 2017).

Processing inventory efficiently is critical for businesses to fulfill customer requirements, minimize costs and maintain optimal operational performance. In this day and age, a variety of technologies have emerged to simplify the inventory management process and improve overall efficiency.

Dilip Kumar Vaka (2024) noted that warehouse managers could leverage (Internet of Things) **IoT**-enabled devices to obtain real-time insights into inventory status, allowing them to make informed decisions. Procurement departments can employ IoT to track inventory fluctuations and anticipate demand trends effectively. Patterns, trends, and unusual situations in inventory actions can be identified, allowing companies to predict demand, replenish goods promptly, and avoid stock-outs. IoT devices automate inventory monitoring tasks such as temperature control, racking period tracking and inventory tracking, thereby reducing manual interference and human error. For example, temperature-critical stock is stored in temperature-specific warehouses, so that if the temperature is abnormal, it can be regulated in time to avoid damage to the stock.

Automated storage and retrieval systems (AS/RS) involve an automated system for storing and retrieving goods that use robots or automated technologies to recover inventory items rapidly and exactly. This reduces processing orders time and expenses, as well as human errors. The AS/RS system further increases the ability to store by leveraging vertical area, allowing for density storage configurations and lowering warehouse and distribution center footprints, hence increasing warehouse usage (Dilip Kumar Vaka, 2024).

Warehouse managers can take control of inventory management by using the technology called **EDI**. The term "EDI" describes the structured data interchange that takes place between trading partners' electronic systems. The International Data Interchange Association describes EDI as the electronic movement of structured data using established message standards from one computer system to another (Kwame & Ampadu, 2017). Electronic Data Interchange (EDI) enables immediate interaction between businesses without the need for any human involvement. Inventory control has changed as a result of this technology. Resupply may be started immediately when needed, and messages are transmitted from their original location without further risk of loss or theft thanks to the EDI system that connects the purchasing organization and its suppliers (Lwiki et al., 2013).

An **EPOS** (Electronic Point of Sale) system is an advanced technology that improves inventory management by delivering real-time data on visitor behavior, sales patterns, and the profitability and attractiveness of each product. It also leads to significant cost savings. The system helps to synchronize supply and demand, decreases inventory downgrades and obsolescence, reduces the potential for pilferage, and keeps purchasing personnel informed. Furthermore, EPOS enhances customer service, which benefits overall economics. By scanning and recording sales-related data, billing transactions, communicating within and between outlets, confirming checks, and giving timely sales data (Kwame & Ampadu, 2017).

2.2.4 Strategic Supplier Partnerships (SSPs)

Long-term table relationships are preferred over short-term and adversarial partnerships in the partnership (Ampadu, 2017). Strategic supplier relationships (SSRs) represent a shift from short-term, transactional dealings to long-term, cooperative partnerships that benefit all involved. The contracts are longer term in order to give the supplier confidence and the motivation to invest and improve. These relationships rely on trust and commitment, allowing for more flexible and responsive interactions without the need for constant monitoring. Effective coordination ensures activities are aligned, reducing inefficiencies. Organizational compatibility and top management support are essential for fostering a collaborative environment and ensuring strategic alignment (Tarigan & Siagian, 2021). Without these, strategic misalignment may arise, resulting in inefficiencies and potential conflicts. Furthermore, establishing trust and commitment in SSPs may be time-consuming and takes ongoing effort on both sides.

Nduta Gitau (2016) emphasizes that proper communication between customers and suppliers enhances efficiency and effectiveness within a firm.

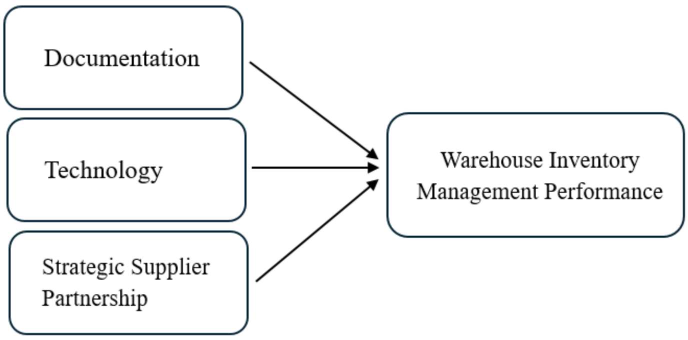
Despite the rise of new technologies and electronic communication methods, personal connections with supplier representatives remain essential. Clear and direct communication is crucial for successful partnerships, and the integration of new technology should complement rather than replace personal interactions (Ampadu, 2017).

SSRs focus on long-term goals such as innovation, market expansion, and competitive advantage, aiming to create value for customers and increase profitability for partners. The strategic partnership will enable the enterprise and supplier to solve the constraints faced by the supplier in obtaining information, providing raw materials, and achieving the targeted product delivery times (Jajja et al., 2019). These partnerships lead to improved responsiveness, guaranteed product availability, optimized inventory and costs, and increased revenue. Overall, SSRs provide significant competitive advantages and better financial performance, essential for managing modern supply chains and ensuring sustainable business growth (Tarigan & Siagian, 2021). As global supply chains continue to evolve, the importance of SSPs in driving business resilience and adaptability will only increase.

Long-term Strategic Supplier Partnerships (SSPs) play an important role in enhancing warehouse inventory management performance by addressing several key areas. These partnerships, characterized by long-term contracts and mutual trust, enable warehouses to achieve better inventory control and operational efficiency. The extended contract durations foster confidence and commitment from suppliers, which translates into more reliable and predictable inventory flows. This stability allows warehouses to implement more accurate demand forecasting and inventory planning, reducing instances of stockouts and overstocking. Effective communication and coordination, as emphasized by Gitau (2016), are also critical components of SSPs that contribute to inventory management. Clear and direct communication between suppliers and warehouses ensures that inventory levels are aligned with actual demand, minimizing discrepancies and enhancing the efficiency of inventory turnover. Furthermore, the trust and collaborative environment fostered by SSPs facilitates the integration of advanced inventory management technologies and practices, leading to optimized inventory levels and reduced costs. By focusing on long-term goals such as innovation and market expansion, SSPs enable warehouses to not only manage inventory more effectively but also drive overall supply chain performance, ensuring that products are available when needed and reducing operational disruptions (Tarigan & Siagian, 2021; Jajja et al., 2019).

2.3 Proposed Theoretical/ Conceptual Framework

Figure 2.1: A Conceptual Framework on Documentation, Technology, and Strategic Supplier Partnership Influencing Warehouse Inventory Management Performance Among Companies



The main aim of a conceptual framework model in this study is to discover the relationship between the independent variables which are documentation, technology, and strategic supplier partnership with the dependent variables which is inventory management performance. This study would also examine how the underlying theories are related to the research framework.

In this study, we mentioned the Theory of Constraints (TOC), which is directly related to inventory management and documentation. TOC focuses on identifying the most significant limiting factor (constraint) in a process and systematically improving it. In the context of inventory management, effective documentation is crucial for identifying and managing these constraints, thereby improving overall performance. Proper documentation ensures accurate tracking of inventory levels, identifies bottlenecks, and supports the decision-making process to optimize the flow of goods.

Additionally, the study incorporates the Resource-Based View (RBV), which is associated with technology and strategic supplier partnerships. RBV suggests that a firm's competitive advantage is derived from its ability to utilize valuable, rare, inimitable, and non-substitutable resources. In the context of this study, technology and strategic supplier partnerships are viewed as critical resources that can significantly enhance inventory management performance. The integration of advanced technology enables more efficient processes and data-driven decision-making, while strong supplier partnerships ensure reliability, quality, and flexibility in the supply chain, ultimately leading to improved inventory management outcomes.

The study also explores Resource Dependence Theory (RDT), which is closely associated with strategic supplier relationships. RDT posits that organizations are inherently dependent on external resources to survive and thrive, leading to interdependencies with other organizations. According to RDT, firms should prioritize the development and maintenance of close, long-term relationships with their suppliers as a strategic imperative. In the context of this study, RDT is directly linked to strategic supplier partnerships, wherein cultivating enduring supplier relationships mitigates risks and ensures a stable supply chain, ultimately enhancing inventory management performance.

2.4 Hypotheses Development

2.4.1 Relationship between Documentation and Warehouse Inventory Management Performance

According to Muturi (2016) and Rashid & Amirah (2017), one of the elements influencing an organization's ability to manage stock effectively is its documentation practices. The study found that effective inventory management performance depends heavily on documentation. The study findings recommended that tracking procedures of documentation in inventory management positively affect the quality of the inventory control system within the organization. This is because the inventory reporting process within the organization typically provides management with all the details needed to ensure complete accountability and compliance by stocktaking and stock auditing.

Additionally, Chan & et al. (2017) concurred in their study "The Factors that Influencing Effectiveness of Inventory Management in Manufacturing SMEs of Batu Pahat Johor" that one issue manufacturing organizations face with inventory management is documentation/store records procedures. Additionally, order processing of the organization's inventories revealed that the organization's documentation procedures have a significant impact on the effectiveness of inventory management in the majority of manufacturing industries, primarily small and medium firms.

One of the elements influencing inventory management is documentation/store records, and the outcome matched the findings of earlier research by James Ng'ang'a (Chan & et al., 2017). The outcomes have demonstrated that the efficacy of inventory management is influenced by the methods used to handle or monitor inventory and documentation.

Therefore, hypothesis 1 was developed as follows:
H1: There is an influence of documentation on warehouse inventory management performance.

2.4.2 Relationship between Technology and Warehouse Inventory Management Performance

Lin et al. (2015) state that information is the lifeblood of all organizations. Every inventory manager requires information technology to excel in his job. Several studies have previously demonstrated the potential of information technology to improve performance. According to these studies, inventory management methods, particularly the use of information technology, allow organizations to decentralize operational operations while centralizing strategic processes due to the transparency afforded by the systems. The use of information technology to improve inventory management is not new. IT technologies such as Electronic Data Interchange (EDI) have evolved into today's web technologies such as Business to Business and collaborative commerce (Kithae & Achuora, 2017).

In Uganda, Sheila (2010) discovered a substantial positive association between information sharing and inventory management, implying that if chain partners apply information technology and interact with one another, inventory management may improve. Evelyne (2018) states that information and communication technology is a driving factor in any organization. An inventory manager must use information communication technologies on a daily basis in order to succeed. According to the analysis, 88% of all respondents said that information technology was used for inventory management in the manufacturing industry, while 12% said that information technology had no bearing on management in the sector. A key factor in determining the effectiveness of inventory control is information technology.

Therefore, hypothesis 2 was developed as follows:
H2: There is an influence of technology on warehouse inventory management performance.

2.4.3 Relationship between Strategic Supplier Partnerships and Warehouse Inventory Management

Performance

According to research, not all suppliers are seen as tactical or strategic providers. Scholars contend that providers must first be systematically evaluated in order to select those who offer the purchasing organization their skills, talents, and alluring benefits (Nag & Ferdausy, 2021).

Strategic Supplier Relationships have to establish strong connections between suppliers and organizations. These entities must have both the capability and willingness to form long-term partnerships while maintaining productive relationships with service or component suppliers that benefit all parties within the supplier network. Such strategic relationships foster mutual benefits and ongoing contributions in critical areas like marketing, technological advancement, and product development. Involving suppliers effectively aids in making cost-efficient design choices, evaluating designs, selecting superior technologies and components, and assessing designs. Organizations that adopt strategic alliances can gain mutual advantages and minimize inefficiencies in both work and time. Therefore, the discussion suggests that an organization can enhance its warehouse performance by forming strategic partnerships with its suppliers (Malik et al., 2023).

Therefore, hypothesis 3 was developed as follows:
H3: There is an influence of strategic supplier partnerships on warehouse inventory management performance.

CHAPTER 3: METHODOLOGY

3.0 Introduction

This chapter outlines how the research will be conducted. This chapter aims to discuss the study's research designs and suitable methodologies to examine the influence of the factors (documentation, technology, strategic supplier partnership) and warehouse inventory management performance.

3.1 Research Design

This study employs a quantitative research approach, integrating grounded theory with hypothesis testing. Data collection will utilize both open-ended and closed-ended questionnaires, and the analysis will be conducted using SPSS software. The research aims to examine the factors influencing warehouse inventory management performance (IMP), with IMP as the dependent variable and documentation, technology, and SSP as independent variables.

Through causal research, the study seeks to reveal cause-and-effect relationships among these variables, identifying the factors that most significantly impact warehouse inventory management performance. The theoretical framework draws on the Theory of Constraints (TOC), Resource-Based View (RBV), and Resource Dependence Theory (RDT) to guide the analysis of these relationships.

3.2 Sampling Design

3.2.1 Target population

The target population in our study context comprises those supervisory level, managerial level, and senior management level who are involved in warehouse operations across the industries. This includes employees across various managerial roles and levels within companies. Thus, the participants who responded to the research questionnaire formed the intended population for the study. These targeted respondents were requested to provide their input and insights regarding their level of agreement on warehouse inventory management performance and the proposed factors (documentation, technology, strategic supplier partnerships).

3.2.2 Sampling Frame & Sampling Location

The sampling frame in our study is targeted at the supervisory level, managerial level, and senior management level who are involved in warehouse operations. The sampling location of the study will center on warehouses located in Malaysia, encompassing the 13 states and 3 federal territories within this region. By focusing on these areas, we aim to capture a comprehensive view of the factors influencing warehouse inventory management performance.

3.2.3 Sampling Elements

This study focuses on respondents who are employed across various top management roles, including directors, supervisors, and managers engaged in warehouses across industries. We anticipate that individuals from these diverse roles will offer valuable insights for our research.

3.2.4 Sampling Technique

Sampling techniques can be classified into probability sampling and non-probability sampling (Showkat & Parveen, 2017). Non-probability sampling was used in this study. This study employed judgmental (purposive) sampling as it allows the researcher to intentionally select participants who have specific knowledge or experience relevant to the study's objectives, ensuring that the data collected is directly applicable and insightful (Nikolopoulou, 2022).

3.2.5 Sampling Size

Sampling size is the number of people who participated in the research and represented a group through their data (Coursera, 2023). Using G*Power to calculate the appropriate sample size, we aim to collect 119 responses across various industries to assess perspectives on how documentation, technology, and strategic supplier partnerships influence warehouse inventory management performance. G*Power is employed for sample size calculation due to its user-friendly interface, which is intuitive and straightforward. Additionally, it supports various types of power analyses—including a priori, post-hoc, compromise, criterion, and sensitivity assessments—making it a widely used tool for determining statistical power and sample size requirements (Kent State University, 2018).

3.3 Data Collection Methods

The primary data-gathering approach is used in this study. The primary data collection approach is the best way to get updated data because the goal of this study is to discover the elements that influence warehouse inventory management performance. To create our questionnaire, we gathered several examples forms that are pertinent to the subject of our study and either created or altered them. Subsequently, those who were targeted were provided with a link to a questionnaire to gather primary data.

3.4 Research Instrument

3.4.1 Questionnaire Design

The questionnaire for this study consists of three sections (A to C). Section A collects personal and company information, including job position, job tenure, industry involvement, years of operation, and firm size, using multiple-choice questions. Section B gathers opinions on warehouse inventory management performance, while Section C addresses opinions on documentation, technology, and strategic supplier partnerships, and their relationship with inventory management performance. Both Sections B and C use a 5-point Likert scale (strongly disagree, disagree, neutral, agree, strongly agree) with a total of 20 questions.

The 5-point Likert scale is chosen for its simplicity, higher response rates, and reduced cognitive load, offering enough differentiation without overwhelming respondents (Khan, 2014). AYBEK and TORAMAN (2022) found that a 5-point scale is more reliable and easier for respondents compared to a 3-point scale, without significant loss of reliability compared to a 7-point scale. Therefore, a 5-point scale is recommended for this study.

Table 3.1

Personal and Company Information Questionnaire

Section	Items	Scale of Measurement
A	Job Position	Nominal Scale
	Job Tenancy	Ordinal Scale
	Industry	Ordinal Scale
	Organization Operating Years	Ordinal Scale
	Firm Size	Ordinal Scale

The results of Sections B and C are then evaluated using a five-point Likert scale in the questionnaire, which makes it easier to compare the results from different studies (see Table 3.2). An internal scale, ranging from strongly disagree to completely agree, is used in our questionnaire to display the degree of agreement (see Appendix 3.2).

Table 3.2

Dependent Variable and Independent Variable Questionnaires

Section	Variables	Measurement	Scale Technique
B	Inventory Management Performance	Interval Scale	5-point Likert scale
C	Documentation	Interval Scale	5-point Likert scale
	Technology	Interval Scale	5-point Likert scale
	Strategic Supplier Partnerships	Interval Scale	5-point Likert scale

3.4.2 Pilot Test

Pilot studies serve the purpose of identifying and addressing unforeseen issues early on in the process (Pearson et al., 2020). The SPSS software is used to generate the results of this pilot study, which involves 50 respondents. We can move on to the full study because the results show that this set of questionnaires is reliable (see Appendix 3.3).

3.5 Data Processing

According to Duggal (2023), data processing is the process of gathering unprocessed data and turning it into information that can be used. The raw data is gathered, arranged, processed, evaluated, stored, and displayed in a usable format. As a result, it provides the background and structure required for computer interpretation and enables employees across the organization to use it.

3.6 Proposed Data Analysis Tool

3.6.1 Descriptive Analysis

Descriptive analysis aims to summarize and present data clearly, highlighting key characteristics and patterns. According to Zikmund et al. (2012), it transforms raw data into an interpretable format through organization and manipulation, often using descriptive statistics displayed in tables or visual formats like pie charts and bar charts. For example, Section A of the questionnaire collected respondents' personal and company information, analysed using frequency distribution to illustrate data distribution. Tables were chosen for their ability to accommodate both nominal and ordinal scale data.

3.6.2 Reliability Analysis

One technique for evaluating the dependability and consistency of measurements, data, or processes is reliability analysis. Amirrudin et al.

(2020) define measurement error as score variances brought on by variables unrelated to the subject of the measurement. When it comes to evaluating internal consistency, Sürücü and Maşlakçı (2020) point out that the Cronbach's Alpha Coefficient is the most widely used technique.

Table 3.3

The Standard of Cronbach's alpha

Coefficient Alpha (α) Value	Reliability
> 0.80 to 1.00	Very Reliable
> 0.60 to 0.80	Reliable
> 0.40 to 0.60	Quite Reliable
> 0.20 to 0.40	Rather Reliable
0.0 to 0.20	Less Reliable

Note. From: Ahdika, A. (2017).

3.6.3 Inferential Analysis

Inferential statistics encompasses the application of statistical methodologies to examine hypotheses and derive conclusions from research outcomes (Allua & Thompson, 2009). This study utilizes a specific inferential statistical method, namely multiple regression analysis, which is employed when multiple independent variables fall within the metric domain.

The findings indicate a noteworthy correlation between three independent variables—documentation, technology, and strategic supplier partnerships—and warehouse inventory management performance.

3.6.3.1 Pearson Correlation Coefficient

The degree of correlation between various variables was assessed using Pearson correlation. The two continuous variables' degree of correlation is measured (Srivastac, n.d.). Because of its effectiveness in assessing the connections between the mediator and the dependent variable as well as the relationships between independent variables and the mediator, Pearson's Correlation Coefficient analysis was selected for this investigation.

Table 3.4 The Scale of Pearson's Correlation Coefficient

The scale of Correlation Coefficient	Value
$0 < r \leq 0.19$	Very Low Correlation
$0.2 \leq r \leq 0.39$	Low Correlation
$0.4 \leq r \leq 0.59$	Mediates Correlation
$0.6 \leq r \leq 0.79$	High Correlation
$0.8 \leq r \leq 1.0$	Very High Correlation

Source: (Selvanathan, Jayabalan, Saini, Supramaniam, & Hussin, 2020)

3.7 Chapter Summary

To ensure the accuracy and reliability of our findings, we've outlined the proposed methodologies in a step-by-step manner. Additionally, our study utilizes SPSS software to conduct data analysis for Chapter 4.

CHAPTER 4: DATA ANALYSIS

4.0 Introduction

This chapter analyzes the personal and company information of 128 respondents and evaluates pilot study findings using SPSS. It includes frequency tables, pie charts, and an assessment of the hypothesis's viability. Inferential analysis examines the relationship between independent and dependent variables, followed by a chapter summary.

4.1 Descriptive Analysis

The questionnaire's section A contains inquiries intended to collect 128 respondents' demographic data and company data. For example, job position, job tenancy, industry, organization operating years, and firm size.

4.1.1 Job Position

Figure 4.1

Percentage distribution of Job Position

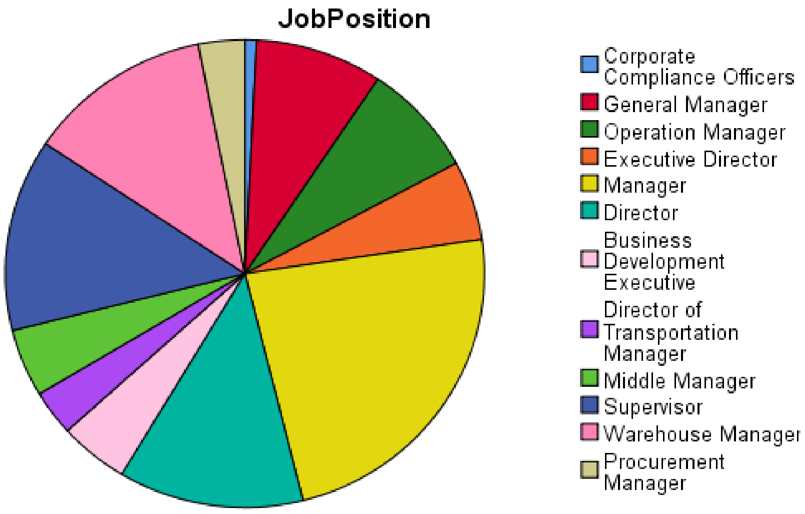


Table 4.1

Frequency distribution of Job Position

	Frequency	Percent	Valid Percent	Cumulative Percent
Corporate Compliance Officer	1	0.8	0.8	0.8
General Manager	11	8.6	8.6	9.4
Operation Manager	10	7.8	7.8	17.2
Executive Director	7	5.5	5.5	22.7
Manager	30	23.4	23..4	46.1
Director	16	12.5	12.5	58.6
Business Development Executive	6	4.7	4.7	63.3
Director of Transportation Manager	4	3.1	3.1	66.4
Middle Manager	6	4.7	4.7	71.1
Supervisor	17	13.3	13.3	84.4
Warehouse Manager	16	12.5	12.5	96.9
Procurement Manager	4	3.1	3.1	100
Total	128	100.0	100.0	

According to the table above, 128 respondents can be simply categorized as supervisory level, managerial level, and senior management level. 17

respondents or 13.28% are at supervisory level, 77 respondents or 60.16% are at managerial level, while 34 respondents or 26.56% are senior management level. This indicates that most of the job position falls within the managerial level among three levels.

4.1.2 Job Tenancy

Figure 4.2

Percentage distribution of Job Tenancy

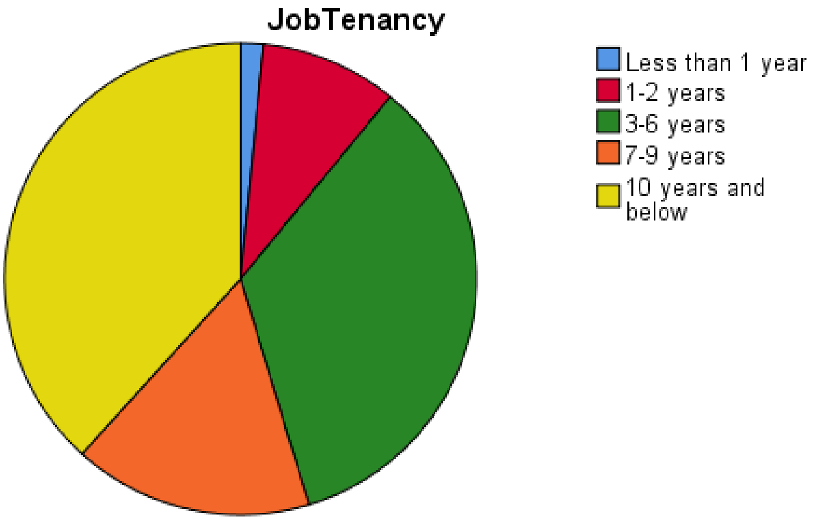


Table 4.2

Frequency distribution of Job Tenancy

	Frequency	Percent	Valid Percent	Cumulative Percent
Less than 1 year	2	1.6	1.6	1.6
1-2 years	12	9.4	9.4	10.9
3-6 years	44	34.4	34.4	45.3
7-9 years	21	16.4	16.4	61.7
10 years and above	49	38.3	38.3	100.0
Total	128	100.0	100.0	

The questionnaire divided respondents' ages into five groups based on their job tenancy: less than 1 year, 1-2 years, 3-6 years, 7-9 years and 10 years and above. According to the figure and table above, only 2 respondents, or 1.6% of the total, are in the category of less than 1 year. Following them were 12 respondents, representing 9.4% of the total in 1-2 years. 44 respondents are within the range of 3-6 years and the majority of the sample falls within the range of 10 years and above, comprising 49% of the total sample. Lastly, 21 of the respondents are falls within the range of 7-9 years. In summary, the comparison suggests that the majority of the sample falls within the 10 years and above range.

4.1.3 Industry

Figure 4.3

Percentage distribution of Operating Industry

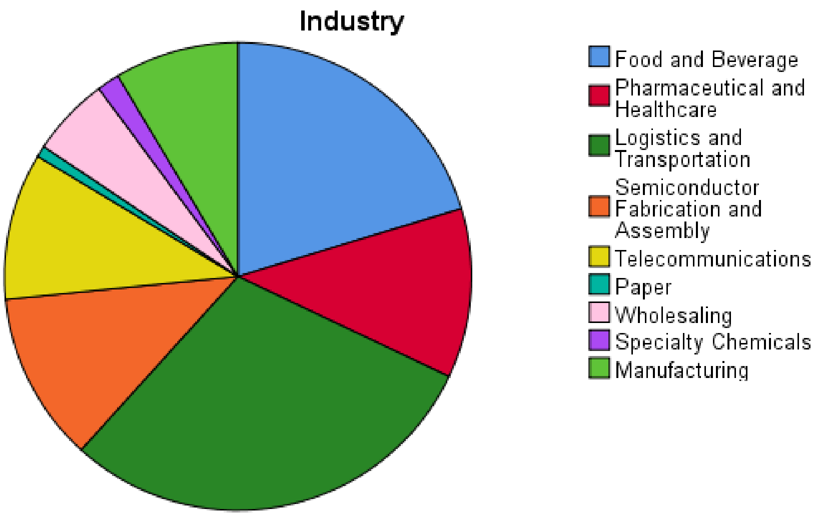


Table 4.3

Frequency distribution of Operating Industry

	Frequency	Percent	Valid Percent	Cumulative Percent
Food and Beverage	26	20.3	20.3	20.3

Pharmaceutical and Healthcare	15	11.7	11.7	32.0
Logistics and Transportation	38	29.7	29.7	61.7
Semiconductor Fabrication and Assembly	15	11.7	11.7	73.4
Telecommunications	13	10.2	10.2	83.6
Paper	1	0.8	0.8	84.4
Wholesaling	7	5.5	5.5	89.8
Specialty Chemicals	2	1.6	1.6	91.4
Manufacturing	11	8.6	8.6	100
Total	128	100	100	

The table comprises 128 respondents distributed across various industries, with logistics and transportation representing the largest share at 29.7% (38 respondents), followed by food and beverage at 20.3% (26 respondents). Pharmaceutical and healthcare with semiconductor fabrication and assembly each account for 11.7% (15 respondents each), while telecommunications make up 10.2% (13 respondents) and manufacturing 8.6% (11 respondents). Smaller sectors include wholesaling at 5.5% (7 respondents), specialty chemicals at 1.6% (2 respondents), and paper at 0.8% (1 respondents). The cumulative percentage indicates that over 60% of the data comes from the top three industries, highlighting a concentration in logistics and transportation, food and beverage, and pharmaceutical and healthcare.

4.1.4 Organization Operating Years

Figure 4.4

Percentage distribution of Organization Operating Years

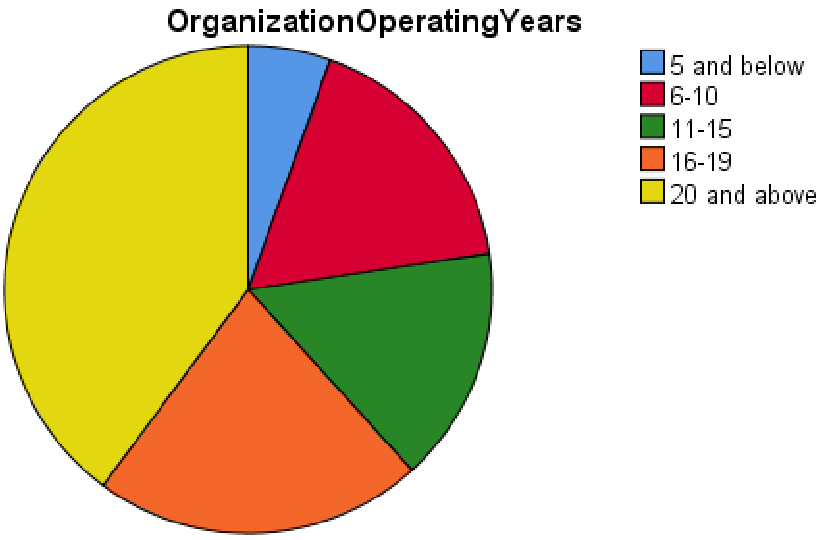


Table 4.4

Frequency distribution of Organization Operating Years

	Frequency	Percent	Valid Percent	Cumulative Percent
5 and below	7	5.5	5.5	5.5
6-10	22	17.2	17.2	22.7
11-15	20	15.6	15.6	38.3
16-19	28	21.9	21.9	60.2
20 and above	51	39.8	39.8	100.0
Total	128	100.0	100.0	

The data in the figure and table provides information on the distribution of organizations based on their years of operation. According to the table, the largest portion of organizations falls within the 20 years and above category, comprising 39.8% of the total sample. Organizations that have been operating for 16–19 years make up 21.9% of the sample, while those in operation for 6–10 years and 11–15 years account for 17.2% and 15.6% of the sample, respectively. The smallest group includes organizations with 5 years or fewer in operation, representing only 5.5% of the sample. This distribution suggests a greater representation of organizations with long operational histories, with nearly 40% of the sample having 20 years or more of experience.

4.1.5 Firm Size

Figure 4.5

Percentage distribution of Firm Size

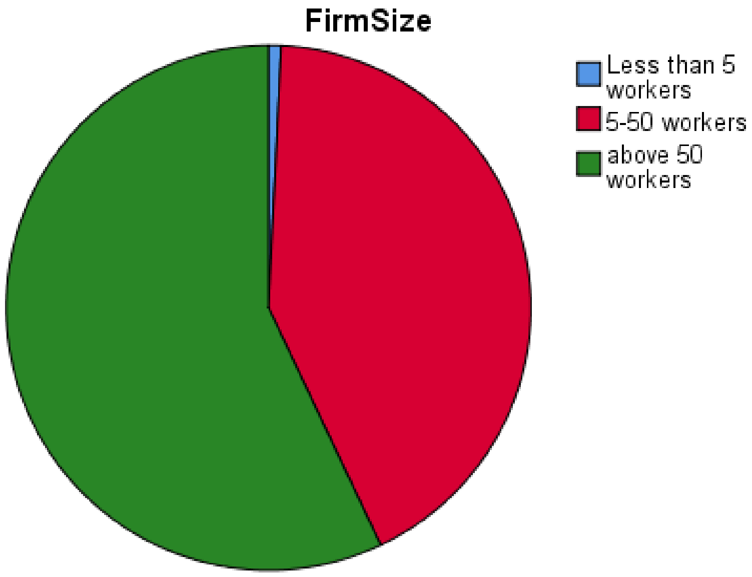


Table 4.5

Frequency distribution of Firm Size

	Frequency	Percent	Valid Percent	Cumulative Percent
Less than 5 workers	1	0.8	0.8	0.8
5-50 workers	54	42.2	42.2	43.0
Above 50 workers	73	57.0	57.0	100.0
Total	128	100.0	100.0	

According to the table, the majority of firms fall into the above 50 workers category, representing 57% of the total sample. Firms with 5 to 50 workers constitute 42.2% of the sample. The smallest category, firms with fewer than 5 workers, accounts for only 0.8% of the sample.

The cumulative percentages indicate that 43% of the sample consists of firms with 50 or fewer employees, while the remaining 57% are firms with more than 50 employees. This breakdown provides a clear overview of the firm size composition within the sample, showing a concentration of responses from larger firms.

4.2 Central Tendencies Measurement of Constructs

This section covers the measurement of mean and standard deviation for the independent variables (documentation, technology, and strategic supplier partnerships) and the dependent variable (inventory management performance). These calculations were conducted using SPSS to analyze responses based on a five-point Likert scale: Strongly Agree=5, Agree=4, Neutral=3, Disagree=2, and Strongly Disagree=1.

Table 4.6 Central Tendencies Measurement of Constructs

		IMPavg	DOCavg	TECHavg	SSPavg
N	Valid	128	128	128	128
	Missing	0	0	0	0
Mean		3.8385	4.2409	4.1901	3.9375
Std. Deviation		0.52160	0.46194	0.48815	0.55415

Table 4.6 displays central tendencies in the measurement of constructs of three independent variables and one dependent variable. It provides information on the sample size, means, and standard deviation of each variable. This table shows that the sample size is 128 and there is no missing data. The dependent variable which is inventory management performance has then lowest mean of the four variables,

3.8385 and the second highest standard deviation, 0.5216, while the strategic supplier partnerships had the second lowest mean which is 3.9375 and the highest standard deviation which is 0.55415, according to the findings. Conversely, technology had the second-highest mean (4.1901) and highest standard deviation (0.48815). The independent variable which is documentation had the largest mean and the lowest standard deviation, measuring 4.2409 and 0.46194, respectively.

4.3 Scale Measurement

To evaluate the dependability of the dependent variable, inventory management performance, and the three independent variables - documentation, technology, and strategic supplier partnerships, we utilized SPSS statistical software for conducting reliability analysis. The analysis comprised a sample of 128 respondents.

4.3.1 Reliability Analysis

Table 4.7 Alpha Coefficient Range

Alpha Coefficient Range	Strength of Association
<0.6	Poor
0.6 to < 0.7	Moderate
0.7 to < 0.8	Good
0.8 to < 0.9	Very Good
0.9	Excellent

Table 4.8 Cronbach's Alpha Reliability Test

Variables	Number of items	Cronbach's Alpha	Result of Reliability
Inventory Management Performance	6	0.765	Good

Documentation	6	0.766	Good
Technology	4	0.755	Good
Strategic Supplier Partnership	4	0.531	Poor

Table 4.8 presents the findings of the reliability analysis conducted on the variables under study. It is noteworthy that the Cronbach's Alpha coefficient for inventory management performance's variable is 0.765, indicative of commendable reliability, given that this value falls within the recommended range of 0.70 to 0.80. Similarly, the documentation variable and technology yield a Cronbach's alpha of 0.766 and 0.755 respectively, also indicating a good level of reliability, as it resides within the range of 0.60 to 0.70. Conversely, the reliability analysis unveils a Cronbach's alpha of 0.531 for the strategic supplier partnership variable, suggesting a poor level of reliability.

4.4 Inferential Analyses

In this study, we decided to set the confidence level at 95%, so the alpha value used in the inferential statistics is 0.05. The confidence level helps to illustrate the probability that our hypothesis estimate is correct. If the resulting p-value is less than the Alpha value, the result is meaningful.

4.4.1 Multiple Regression Analysis

Multiple regression is a statistical technique used to examine the relationship between one dependent variable and several independent variables (E. Turvey, 2013). In this study, multiple regression analysis is used to test the hypothesis and understand how the dependent variable (inventory management performance) is influenced by the independent variables (Documentation, Technology, Strategic Supplier Partnerships).

This method is chosen because it effectively analyzes the impact of multiple independent variables on a single dependent variable. The analysis estimates the dependent variable based on the average of the independent variables, helping to determine the variance in the dependent variable explained by each independent variable.

Table 4.9 Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.616^a	.380	.365	.41567

a. Predictors: (Constant), SSPavg, DOCavg, TECHavg

R-value

The correlation coefficient between the independent and dependent variables is known as the R-value (University of Miami, 2020). After running the multiple regression analysis, the value of the correlation coefficient (R-Value) for this study is 0.616. The R-value falls between 0.6 to 0.79, which is defined as positive and high correlation between dependent variables (Inventory Management Performance) and independent variables (Documentation, Technology, Strategic Supplier Partnerships).

R-Square

The R-squared value indicates the percentage or quantity of independent variables that could explain variations in the dependent variable (Fernando, 2023). In this study, independent variables (Documentation, Technology, Strategic Supplier Partnerships) are able to explain 38% of the variations in the dependent variable (Inventory Management Performance) in this research. Nonetheless, 62% (100% - 38%) of the data in this study remain unexplained. Stated differently, this analysis has not considered other relevant substitution variables that play a critical role in understanding inventory management performance.

Table 4.10 ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	13.127	3	4.376	25.326	.000^b
	Residual	21.425	124	.173		
	Total	34.552	127			

a. Dependent Variable: IMPavg

b. Predictors: (Constant), SSPavg, DOCavg, TECHavg

H1: The three independent variables (Documentation, Technology, Strategic Supplier Partnerships) significantly explain the variance in inventory management performance.

Based on the table 4.10 (ANOVA), the p-value (Sig:0.000) is less than the alpha value of 0.05. The F-statistic is significant, there is significant evidence against the null hypothesis. The model of this study is a good descriptor of the relation between the dependent and predictor variables. Consequently, the independent variables (Documentation, Technology, Strategic Supplier Partnerships) are significant to explain the variance in inventory management performance. The alternate hypothesis is supported by the data.

Table 4.11 Coefficients^a

Model		Unstandardized B	Coefficients Std. Error	Standard Coefficients Beta	t	Sig.
1	(Constant)	1.108	.374		2.964	.004
	DOCavg	-.324	.276	-.287	-1.172	.243
	TECHavg	.647	.269	.605	2.401	.018
	SSPavg	.354	.076	.376	4.679	.000

a. Dependent Variable: IMPavg

Interpretation

In this study, the dependent variable (inventory management performance) had no significant influence by documentation. This is as a result of the documentation p-value of 0.243, which is higher than the alpha value of 0.05.

Regarding the dependent variable (inventory management performance) in this study is significantly predicted by technology. For technology, the p-value is 0.018, which is lower than the alpha value of 0.05, which explains this.

Strategic supplier partnerships significantly influence the dependent variable, which is inventory management performance. This is due to the fact that the strategic supplier partnerships p-value is 0.000, lower than the alpha value of 0.05.

Regression Equation

Regression Equation: $y = a + b1(x1) + b2(x2) + b3(x3)$

x1= Independent variable 1 (Documentation)

x2= Independent variable 2 (Technology)

x3= Independent variable 3 (Strategic Supplier Partnerships)

Inventory Management Performance: 1.108 - 0.324 + 0.647 + 0.354

Highest Contribution

Among the predictor variables analyzed, technology exhibit the most substantial influence on the variance of the dependent variable (inventory management performance). This assertion is supported by the highest Beta value observed for technology, which stands at 0.605, surpassing the Beta values of other predictor variables. Consequently, it can be inferred that technology make the most pronounced and distinctive contribution to elucidating the variation observed in the dependent variable (inventory management performance).

Second Highest Contribution

Strategic supplier partnerships emerge as the predictor variable exerting the second most significant impact on the variation of the dependent variable (inventory management performance). This conclusion is drawn from its Beta value, which ranks second highest among the predictor variables at 0.376. Hence, it can be deduced that strategic supplier partnerships make the second most influential and distinct contribution to elucidating the variation observed in the dependent variable (inventory management performance).

Lowest Contribution

Documentation is the predictor variables that contribute the lowest to the variation of the dependent variable (inventory management performance) because Beta value (under standardized coefficients) for this predictor variable is the smallest (-0.287). This means that documentation makes the least contribution to explain the variation in dependent variable (inventory management performance), when the variance explained by all other predictor variables in the model is controlled for.

Recommendations

In this study, we know that technology have the highest contribution and documentation have the lowest contribution. In order to obtain the factors that would influence the inventory management performance in warehouse, we should pay more attention to technology, and less emphasize on documentation and strategic supplier partnerships. This is because technology have a significant result whereas documentation and strategic supplier partnerships has no significant result on the dependent variable.

4.5 Chapter Summary

In Chapter 4, we analyzed data from 128 respondents using Google Form charts and SPSS tools. Descriptive statistics, including mean and standard deviation, were calculated for variables measured on a five-point Likert scale. Reliability was assessed with Cronbach's alpha, and Multiple Regression Analysis was used to examine the relationship between the dependent variable (inventory management performance) and independent variables (documentation, technology, and strategic supplier partnerships). Chapter 5 will provide a deeper analysis of the findings.

CHAPTER 5: DISCUSSION, CONCLUSION, AND IMPLICATIONS

5.0 Introduction

This chapter presents an in-depth discussion of the findings analyzed in Chapter 4 and provides validation of the hypotheses proposed in Chapter 1. Additionally, the chapter outlines the study's implications, acknowledges its limitations, and offers recommendations for future research.

5.1 Discussions of Major Findings

Table 5.1 Summary of Hypothesis Testing Results

Hypothesis	Result	
H1: There is an influence of documentation on warehouse inventory management performance.	Supported p-value = 0.243 > 0.05	
H2: There is an influence of technology on warehouse inventory management performance.		Supported p-value = 0.018 < 0.05
H3: There is an influence of strategic supplier partnerships on warehouse inventory management performance.		Supported p-value = 0.000 < 0.05

As shown in Table 5.1 three hypotheses were tested in relation to the research variables. Multiple Regression Analysis was employed to assess the confidence level and significance of each hypothesis. A hypothesis is considered significant if the p-value is less than the alpha level of 0.05; conversely, if the p-value exceeds the alpha level, the hypothesis is deemed not significant.

The correlation coefficient (R-value) for this study is 0.616. In this case, there appears to be a moderate positive correlation between inventory management performance and documentation, technology, and strategic supplier partnerships. The R-variance of this study is 0.380, which represents 38% of the variance accounting for inventory management performance. In addition, the ANOVA table further indicated that the p-value = 0.000 < 0.05, thus the F-statistic is significant.

RQ1: Is there an influence of documentation on warehouse inventory management performance?

The correlation coefficient of our study (β= –0.287) demonstrates a strong negative relationship between documentation and warehouse inventory management performance. According from Debala et al. (2022) shows significant positive relationship between documentation and warehouse inventory management performance.In our study, the result for documentation is not significant as the p-value = 0.243 > 0.05. This indicates that the negative relationship observed may not be a reliable finding and could be due to random variation in the sample rather than an actual effect. Among the three independent variables anaylsed, documentation is the only one showing a negative relationship with warehouse inventory management performance.

Despite the observed negative relationship, the lack of statistical significance means that there is insufficient evidence to assert a strong influence of documentation on performance within this context. Organizations should consider other factors that may interact with documentation, such as the quality of documentation practices, technology integration, and staff training, when evaluating inventory performance. As a result, documentation did not significantly affect warehouse inventory management in our current study.

RQ2: Is there an influence of technology on warehouse inventory management performance?

Multiple Regression Analysis revealed that technology has the biggest impact on warehouse inventory management performance (β = 0.605). Thus, a strong positive relationship between technology and warehouse inventory management performance is proposed. The technological results show a statistically significant association (p-value = 0.018 < 0.05).

The findings indicate that technology adoption can improve inventory accuracy, tracking, and operational efficiency, making it a critical factor for performance optimization in warehouses. This significant positive coefficient between technology and performance also shown in Kwame and Ampadu (2017). By simplifying inventory tracking and replenishment, technology helps warehouse operations overcome bottlenecks, according to the Theory of Constraints (TOC). Technology is emphasized by the Resource-Based View (RBV) as a strategic resource that improves capabilities for competitive advantage. When taken as a whole, these theories demonstrate how important technology is for improving warehouse inventory management effectiveness.

RQ3: Is there an influence of strategic supplier partnerships on warehouse inventory management performance?

According to the result generated from Multiple Regression Analysis, strategic supplier partnerships suggest a moderate positive relationship on warehouse inventory management performance with $\beta = 0.376$, and the result is significant with p-value = 0.000 < 0.05. The p-value confirms a significant relationship between strategic supplier partnerships and warehouse inventory management performance.

The significant positive relationship implies that strategic supplier partnerships can enhance warehouse performance by fostering collaboration and reliability in supply chains. This finding is consistent with Kwame and Ampadu (2017), who also identified a significant positive correlation between strategic supplier partnerships and performance. The Theory of Constraints (TOC), Resource-Based viewed (RBV) and Resource Dependence Theory (RDT) framework provides theoretical support for the finding by showing how strategic supplier partnerships help mitigate supply chain constraints, enabling more effective inventory management and warehouse performance.

5.2 Implications of the Study

5.2.1 Practical Implications

Studying IMP helps companies understand key drivers like documentation, technology, and strategic supplier partnerships that enhance operations, offering valuable guidance for managerial strategies.

5.2.1.1 Documentation

The results, indicating a non-significant influence of documentation on inventory management performance with a value of 0.243, suggest that documentation or inventory records may not directly impact performance outcomes in warehouse management as strongly as anticipated. This finding implies that while documentation is essential for establishing standardized procedures, regulatory compliance, and traceability, its role may be more supportive or indirect rather than a primary driver of performance improvements.

One perspective is that documentation is a fundamental part of inventory management but has no direct impact on operational measures like accuracy, turnover rate, or lead times. This finding supports the view that documentation alone may not provide significant performance benefits unless actively integrated with other dynamic elements (real-time technology systems or responsive supplier networks) that have a direct impact on inventory control efficiency and accuracy. For example, while accurate records are important, their utility may be determined by the quality of real-time data and technologies that allow for swift and effective decision-making.

5.2.1.2 Technology

Based on the hypothesis test in Chapter 4, it is proven that technology has significant influence towards inventory management performance. According to Fridah M (2015), an inventory management information system, which is a database for keeping and managing all kinds of data necessary for accurate and efficient inventory management, is the foundation of effective inventory management. Radio Frequency Identification (RFID) makes inventory tracking possible and improves inventory management efficiency. Hence, there is a significant relationship between technology and inventory management performance. Additionally, technology adoption can elevate industry standards. Policymakers may support this shift by incentivizing tools that improve real-time tracking and automation, while companies can use IoT and RFID to enhance forecasting, reduce waste, and adjust inventory to market needs.

The function of information technology is to help companies gain and maintain a competitive edge because it is not limited by time or location (Ramayah, Lim, & Sulaiman, 2005). The implementation of an efficient information system would facilitate inventory management and provide a company with a competitive edge (Coelho Jones & Ramos da Silva, 2013). Without appropriate computerized systems for inventory documentation, inventory management systems lose some of their effectiveness (ng'ang'a, 2013). Anokyewaa (2015) revealed similar results when she discovered that inadequate inventory management practices among SMEs are a result of a lack of computerized record keeping. Manual reports frequently result in a number of issues, including inefficiency and duplication, since handling the inventory takes more time (Arshad, Shoaib, & Sajjad Khan, 2000). Information technology use improves inventory management by making it more accurate and efficient, as stated in (Ali, 2011); thus, technology has a major impact on inventory management performance (Zainun & et al., 2018). Policymakers can incentivize data-driven inventory systems that support real-time tracking and automation, while companies using IoT and RFID can streamline inventory, improve forecasting, and lower costs.

Another element that could affect inventory management procedures and the performance of the inventory turnover ratio is information technology. According to the results of regression model in (Zainun & et al., 2018), shows that information technology significantly influences inventory management practices. According to Kagira (2012), factories run by the Kenya Tea Development Agency experienced issues with inconsistent inventory levels, inadequate demand control, and a lack of appropriate inventory control systems as a result of inadequate strategic inventory management systems. As technology reshapes industry practices, policymakers could promote data-driven tools for tracking and automation. Companies adopting IoT and RFID benefit through better forecasting, reduced waste, and improved cost efficiency.

5.2.1.3 Strategic Supplier Partnerships

According to the results analyzed in Chapter 4, strategic supplier partnerships have a significant influence on the inventory management performance. According to Joel Onyango (2015), maintaining strong strategic supplier partnerships can lead to good supplier relationship management, which guarantees efficient information flow and improved flexibility in the face of unpredictable developments.

Policymakers can encourage cooperative policies to strengthen supplier relationships and transparency, fostering resilient and reliable inventory flows. Practitioners who prioritize strategic partnerships gain benefits like reduced lead times, cost savings, and more adaptable supply chains, enhancing overall resilience and supporting business continuity.

Long-term collaboration through strategic supplier partnerships is also beneficial in recognizing and bringing forward improved solutions to organizational issues. Additionally, reliable relationships facilitate better communication between suppliers and buyers, successfully settle problems, and lower monitoring costs. This may significantly influence inventory management performance (Joel Onyango, 2015). Only then are organization seeing the value of building long-term relationships, as demonstrated by the COVID-19 pandemic and its profound effects on Global Supply Chains (Fratocchi et al., 2022). To promote shared value creation and resiliently in the face of challenges, it is essential to foster durable and trustworthy partnerships. Having a strong partner, at least looking forward, significantly lowers warehouse losses, and enables unforeseen events to be handled calmly (Holloway, 2024).

Decision makers in organizations also recommend that proper strategic sourcing decisions must be made before selecting trustworthy and reliable strategic supplier partners for long-term collaboration. Strategic sourcing decision includes contract management, utilization management, supplier strategy development, expenditure aggregation and fair and informed negotiation. Because these decisions are critical in choosing trustworthy suppliers, and trustworthy suppliers who can be partnered with over the long term should not only meet business requirements but also be in compliance with organizational goals and values. This will significantly improve the performance of inventory management (Holloway, 2024).

Therefore, organizations are willing to maintain a good relationship with their suppliers because it is beneficial to them.

5.2.2 Theoretical Implications

This research integrated Theory of Constraints (TOC), Resource-Based View (RBV), and Resource Dependence Theory (RDT) to examine the relationships between warehouse inventory management performance and documentation, technology, and strategic supplier partnerships respectively.

Among the theories integrated in this research—Theory of Constraints (TOC), Resource-Based View (RBV), and Resource Dependence Theory (RDT)—RBV and RDT share similar conceptual foundations, as both emphasize the strategic importance of resource management in achieving competitive advantage and organizational stability.

From a theoretical aspect, the results may show limitations in the Theory of Constraints (TOC) if used simply for documentation. TOC focusses on decreasing bottlenecks to improve operational outcomes; nevertheless, documentation alone may not address the underlying constraints that affect inventory management performance, such as process inefficiencies or supply chain delays. As a result, the findings emphasise the need of viewing documentation as part of a larger, integrated strategy to inventory management success, rather than driving it on its own. The Resource-Based View (RBV) suggests that a firm's internal resources, such as technology and unique capabilities, are central to sustaining a competitive edge. It highlights the strategic value of acquiring and managing resources that are valuable, rare, and difficult to imitate. Conversely, Resource Dependence Theory (RDT) focuses on the management of dependencies on external resources, such as supplier relationships, to mitigate risks and maintain operational continuity. This theory emphasizes the importance of securing essential resources through strong, strategic partnerships. Both theories thus share the concept that effective resource control and management—whether internal or external—are essential to organizational resilience and performance.

While RBV concentrates on leveraging internal assets and RDT on external partnerships, they both underscore the importance of strategically managing resources to enhance competitiveness and reduce vulnerability. In contrast, TOC provides a distinct yet complementary perspective, focusing not on resource ownership or dependency but on identifying and alleviating internal bottlenecks to optimize operational efficiency. In this way, TOC complements RBV and RDT by adding a process-oriented approach to improve performance beyond the scope of resource possession or dependency.

5.3 Limitations of the Study

From our results, we found out that the limitations of this project including data collection constraints. The reliance on self-reported data through questionnaires may introduce response bias, as participants' perceptions and responses might not fully align with actual practices in inventory management. Most of the respondents' responses may be based on their personal perceptions, which might not objectively reflect actual practices. This subjectivity can result in data that does not align with on-the-ground realities. For example, warehouse managers might perceive their inventory management practices as highly efficient, while an external audit might reveal discrepancies or inefficiencies.

Furthermore, resource and time limitations is one of the limitations. This limitations on research are multifaceted, affecting various stages of the project from data collection to analysis and reporting. Resource and time constraints often mean that researchers cannot survey or interview as many participants as would be ideal for comprehensive analysis. A smaller sample size can affect the statistical power of the study, reducing its ability to detect significant relationships or trends. This limitation may lead to results that are less representative of the broader population and decrease the generalizability of the findings.

Other than that, focusing on a specific set of independent variables like documentation, technology, and strategic supplier partnerships provides a structured framework for research, but it inherently restricts the study's comprehensiveness. This focus may lead to an incomplete picture of the multifaceted nature of warehouse inventory management performance. While the chosen independent variables are critical for understanding aspects of warehouse performance, omitting other influential factors like workforce training or leadership styles can lead to an incomplete analysis. For example, the quality and frequency of workforce training can significantly impact the effectiveness of technology adoption and inventory accuracy, while strong leadership can drive better implementation of strategic partnerships and documentation processes. Warehouse operations are complex systems where various factors interact. By focusing solely on documentation, technology, and strategic supplier partnerships, the study may overlook how these variables interplay with others. For instance, workforce morale and training can enhance the effectiveness of technological tools and supplier collaboration, impacting overall performance.

5.4 Recommendations for Future Research

To address data collection constraints and response bias inherent in self-reported data, future researchers are recommended to incorporate various strategies to enhance reliability and validity. One effective approach is to use triangulation methods, combining observational studies, interviews, and document reviews to validate participants' self-reported data. This multi-method approach helps researchers cross-check responses against observed behaviors and existing records, thus strengthening data credibility. It is also crucial to implement standardized response metrics by establishing clear criteria and uniform rating scales for survey responses. This standardization can reduce inconsistencies caused by different interpretations of evaluative terms like "excellent" or "average," thereby promoting consistency across the sample. By adopting these strategies, future research can obtain data that more accurately reflects actual practices, improving the overall validity of findings and the applicability of results in practical settings.

In addition, the recommendation for future studies to solve the resource and time limitations is to secure additional funding and partnerships. Future researchers should seek external funding sources such as research grants, industry sponsorships, or collaborations with logistics firms to enhance available resources. Additional funding can support broader data collection efforts, including travel to more locations, the hiring of research assistants, and investment in advanced data collection tools, which collectively enable a larger and more diverse sample.

Moreover, planning for an extended data collection period can also improve research flexibility. By extending the timeframe for data collection, researchers can manage resources more effectively and gather data in phases, reducing pressure and accommodating a more thorough approach. This phased strategy ensures that time constraints are less impactful and that comprehensive, representative findings can be achieved.

To address the limitation of focusing on a specific set of independent variables and its impact on comprehensiveness, several recommendations can be made for future research. First, researchers should consider expanding the range of variables to include influential factors such as workforce training, leadership styles, organizational culture, and employee engagement. This broader scope would create a more holistic model of warehouse inventory management performance, capturing critical elements that interact with technology, documentation, and strategic supplier partnerships. Future research should also include comparative studies that analyze these additional variables across different warehouse environments or industries to show how factors like workforce training and leadership affect performance in varied settings, adding depth to findings and enabling broader generalizations.

5.5 Conclusion

To make the study's goals and hypotheses clearer, Chapter 5 summarized the key findings and condensed the descriptive and inferential analyses from Chapter 4. Additionally, it provided a summary of the hypothesis testing results. The study confirms significant connections between factors such as technology and strategic supplier relationships and warehouse inventory management performance. These findings offer practical insights for practitioners to develop strategies in improving warehouse inventory management performance with focusing on factors like technology and strategic supplier partnerships while suggesting future studies explore. The study's limitations are also listed in this chapter, along with several recommendations for how to strengthen them for more successful future research.

References

Abdul Raheem, A. R., Yahaya, K. A., Isiaka, S. B., & Aliu, o. A. (2011). Inventory management in small business finance: Empirical evidence from Kwara State, Nigeria. *British Journal of Economics, Finance and Management Sciences*, 2(1), 49–57.

Agus, A., & Shukri Hajinoor, M. (2012). Lean production supply chain management as driver towards enhancing product quality and business performance. *International Journal of Quality & Reliability Management*, *29*(1), 92–121. https://doi.org/10.1108/02656711211190891

Ahdika, A. (2017). Improvement of quality, interest, critical, and analytical thinking ability of students through the application of research based learning (RBL) in introduction to stochastic processes subject. *International Electronic Journal of Mathematics Education*, *12*(2), 167–191. https://doi.org/10.29333/iejme/608

Ahmad, F., Saad, R., Mohd, & Zien, R. (2015). The influence of inventory management practices towards inventory management performance in malaysian public hospitals. *International Academic ResearchJournal of Business and Technology*, *1(2)*, 142–148.

Akinlabi, B. (2021). Effect of inventory management practices on operational performance of flour milling companies in Nigeria. *Academic Science Archives*, *8*(2), 137–174. https://www.arcnjournals.org/images/ASA-IAJMMES-8-3-77.pdf

Allua, S., & Thompson, C. B. (2009). Inferential statistics. *Air Medical Journal*, *28*(4), 168– 171. https://doi.org/10.1016/j.amj.2009.04.013

Almrdof, F., & Attia, A. (2021). *The effect of inventory management practices on productivity*. https://archives.palarch.nl/index.php/jae/article/download/8332/7777/16316

Amirrudin, M., Nasution, K., & Supahar, S. (2020). Effect of variability on cronbach alpha reliability in research practice. *Jurnal Matematika, Statistika Dan Komputasi*, *17*(2), 223–230. https://doi.org/10.20956/jmsk.v17i2.11655

Analyze the current state of smart warehouse and its trends, challenges, and opportunities, including relevant data and statistics in Malaysia - DNC. (2023, March 9). Dnc-Automation.com. https://www.dnc-automation.com/analyze-the-current-state-of-smart-warehouse-and-its-trends-challenges-and-opportunities-including-relevant-data-and-statistics-in-malaysia/

Anokyewaa , C. (2015). *Computerised record keeping among small and medium enterprises - A case study in Sunyani Municipality*. Scribd. https://www.scribd.com/document/518259026/ANOKYEWAA-CHRISTIANA

Arshad, S., Shoaib, M., & Sajjad Khan, M. (2000). Computerized inventory system – Program development and execution. *International Journal of Agriculture & Biology*, 2(1-2), 55–58.

Atnafu, D., & Balda, A. (2018). The impact of inventory management practice on firms' competitiveness and organizational performance: Empirical evidence from micro and small enterprises in Ethiopia. *Cogent Business & Management*, *5*(1), 1–16. Tandfonline. https://doi.org/10.1080/23311975.2018.1503219

Atyam, S. B. (2010). Effectiveness of security control risk assessments for enterprises: Assess on the business perspective of security risks. *Information Security Journal: A Global Perspective, 19*(6), 343–350. https://doi.org/10.1080/19393555.2010.514892

AYBEK, E. C., & TORAMAN, C. (2022). How many response categories are sufficient for likert type scales? An empirical study based on the item response theory. *International Journal of Assessment Tools in Education*, *9*(2), 534–547. https://doi.org/10.21449/ijate.1132931

Bai, C., Dallasega, P., Orzes, G., & Sarkis, J. (2020). Industry 4.0 technologies assessment: A sustainability perspective. *ResearchGate*, *229*(5). https://doi.org/10.1016/j.ijpe.2020.107776

Bickbashy, S., & Saleem, H. (2024). *Improvements for inventory management practices A case study within the furniture manufacturing industry* (pp. 1–56). https://hj.diva-portal.org/smash/get/diva2:1883790/FULLTEXT01.pdf

Bogale, H. (2018). *Factors affecting effectiveness of inventory management practice: In Jimma university*. https://repository.ju.edu.et/bitstream/handle/123456789/5211/hmichael%204%20edited.pdf?sequence=1&isAllowed=y

Bukhari, S. A. R. (2021). *Sample size determination using krejcie and morgan table*. ResearchGate. https://www.researchgate.net/publication/349118299_Sample_Size_Determination_Using_Krejcie_and_Morgan_Table

Chalotra, V. (2013). Inventory management and small firms' growth: An analytical study in supply chain. *Vision: The Journal of Business Perspective*, *17*(3), 213–222. https://doi.org/10.1177/0972262913496726

Chan, S. W., Tasmin, R., A. H. Nor Aziati, Raja, Z. R., Fadillah , B. I., & Yaw, L. P. (2017). Factors influencing the effectiveness of inventory management in manufacturing SMEs. *IOP Conference Series: Materials Science and Engineering*, *226*(1), 012024. https://doi.org/10.1088/1757-899x/226/1/012024

Chuang, H. H.-C., & Oliva, R. (2015). Inventory record inaccuracy: Causes and labor effects. *Journal of Operations Management*, *39-40*(1), 63–78. https://doi.org/10.1016/j.jom.2015.07.006

Coelho Jones, G. D., & Ramos da Silva, V. (2013). *Impacts of computerized management process of stocks in mineiras family firms of building material: multicases study*.

Crisan, E., Liviu, I., Ana-Maria, T., & Emil, C. (2023). Warehouse performance measurement - a case study. *Annals of Faculty of Economics*, *4*(1), 307–312. https://econpapers.repec.org/article/orajournl/v_3a4_3ay_3a2009_3ai_3a1_3ap_3a307-312.htm

Coursera. (2023). *What is sample size?* Coursera. https://www.coursera.org/articles/what-is sample-size

Debala, G., Khan, S. T., & Bhat, M. A. (2022). Inventory management and organizational performance: Evidence from ethiopian public sector organizations. *INTERNATIONAL JOURNAL of AUDITING and ACCOUNTING STUDIES*, *4*(2), 231–247. https://doi.org/10.47509/ijaas.2022.v04i02.04

Demissie, D. (2015). *An assessment of the factors influencing inventory control; The case of population services international Ethiopia*. http://repository.smuc.edu.et/bitstream/123456789/758/1/DANIEL%20DEMISSIE.pdf

Dhodi, M. (2018). The effect of information technology on inventory management for the manufacturing companies in Mogadishu. *European Journal of Logistics, Purchasing and Supply Chain Management*, *6*(3), 20–29. https://www.eajournals.org/wp-content/uploads/The-Effect-of-Information-Technology-on-Inventory-Management-for-the-Manufacturing-Companies-in-Mogadishu.pdf

Dilip Kumar Vaka. (2024). Integrating inventory management and distribution: a holistic supply chain strategy. *International Journal of Managing Value and Supply Chains*, *15*(2), 13–23. https://doi.org/10.5121/ijmvsc.2024.15202

Donato, M. (2016). *The influence of resource dependency on collaboration in the construction supply chain*. https://vuir.vu.edu.au/32396/1/DONATO%20Matteo-thesis_nosignature.pdf

Duggal, N. (2024). *What is data processing: Types, methods, steps of data processing cycle*. Simplilearn.com. https://www.simplilearn.com/what-is-data-processing-article

Ecklund, D. (2010). *Warehousing efficiency and effectiveness in the supply chain process*. Www.scmr.com. https://www.scmr.com/article/warehousing_efficiency_and_effectiveness_in_the_supply_chain_process

Evelyne, K. N. (2018). *Factors affecting inventory management in manufacturing industry in Kenya a case study of Unga Group Limited.* https://core.ac.uk/download/pdf/220096746.pdf

Fernando, J. (2024). *R-Squared: Definition, calculation formula, uses, and limitations*. Investopedia. https://www.investopedia.com/terms/r/r-squared.asp

Findikli, M. A. (2019). Resource dependence theory, firm performance and producers-suppliers relationships. *The European Proceedings of Social & Behavioural Sciences*, *2357-1330*. https://doi.org/10.15405/epsbs.2019.01.02.14

Fratocchi, L., Di Stefano, C., & Godsell, J. (2022). When does the manufacturing reshoring strategy create value? *Journal of Purchasing and Supply Management*, *28*(3), 100771. https://doi.org/10.1016/j.pursup.2022.100771

Fridah M, K. (2015). Impact of information technology on inventory management in supermarkets in Nairobi city county. *Uonbi.ac.ke*. http://hdl.handle.net/11295/93313

Heck, G. van, Berg, J. van den, Davarynejad, M., Duin, R. van, & Roskott, B. (2010). Improving Inventory Management Performance Using a Process-Oriented Measurement Framework. *Communications in Computer and Information Science,* 279–288. https://doi.org/10.1007/978-3-642-16402-6_30

Hiba Saleem, S. B. (2024). *Improvements for inventory management practices a case study within the furniture manufacturing industry*. https://hj.diva-portal.org/smash/get/diva2:1883790/FULLTEXT01.pdf

Holloway, S. (2024). Exploring supplier relationships and inventory optimization in high-technology industries. *Preprints.org*. https://doi.org/10.20944/preprints202407.0523.v1

Hussain, F., & Waveren, C. C. van. (2009). The implementation of TQM in the component supply chain: A case study in the South African motor industry. *International Journal of Automotive Technology and Management*. https://doi.org/10.1109/picmet.2009.5261964

Inventory management statistics 2023 in Malaysia. (2023, May 9). Adynamics.com.my. https://adynamics.com.my/inventory-management-statistics/

Jaja, H. P., Gladson, P. C., & Julie, G.-N. (2024). Strategic supplier partnership and competitive advantage of bakery firms in rivers state. *International Journal of Social Sciences and Management Research*, *10*(4). https://doi.org/10.56201/ijssmr.v10.no4.2024.pg96.108

Jajja, M. S. S., Asif, M., Montabon, F., & Chatha, K. A. (2019). Buyer-supplier relationships and organizational values in supplier social compliance. *Journal of Cleaner Production*, *214*(331-344). https://doi.org/10.1016/j.jclepro.2018.12.289

James, K. (2023). Strategic supplier management practices and operational performance of development finance company of uganda (DFCU), kampala-uganda. *Kampala International University*.

Jessop, D. (1999). *Stores and Inventory Management: Professional Study Guides Series, 4 th Revised Edition.* Stamford, Lincs, United Kingdom: Chartered Institute of Purchasing and Supply.

Joel Onyango, O. (2015). Effect of strategic supplier relationship management on internal operational performance of manufacturing firms: A case of East African breweries limited, Kenya. *International Journal of Economics, Finance and Management Sciences, 3*(2), 115. https://doi.org/10.11648/j.ijefm.20150302.16

Jonsson, P., & Mattsson, S.-A. (2008). Inventory management practices and their implications on perceived planning performance. *International Journal of Production Research*, *46*(7), 1787–1812. https://doi.org/10.1080/00207540600988071

Kagashe, G., & Terevael , M. (2012). Medicine stock out and inventory management problems in public hospitals in Tanzania: A case of Dar es Salaam region hospitals. *International Journal of Pharmacy*, *2*(2), 252–259.

Kagira, K. (2012). Sustainable methods to address challenges facing small holder tea sector in Kenya: A supply chain management approach. *Journal of management sustainability.*

Kambura Ngatuni, E. (2018). *Factors affecting inventory management in the Kenya manufacturing industry. A case study of the Kenya manufacturing industry on Unga group ltd.* https://core.ac.uk/download/pdf/220096746.pdf

Kanguru, R. M. (2016). Inventory management practices of small, medium and micro enterprise in the Cape Metropole, South Africa. *Cape Peninsula University of Technology*. https://etd.cput.ac.za/bitstream/20.500.11838/2431/1/208179739-Kanguru-Rutendo%20Melody-Mtech-Cost-Management-Accounting-BUS-2017.pdf

Kanike, U. K. (2023). Factors disrupting supply chain management in manufacturing industries. *Journal of Supply Chain Management Science*, *4*(1-2), 1–24. https://doi.org/10.18757/jscms.2023.6986

Kannan, V. R., & Tan, K. C. (2005). Just in time, total quality management, and supply chain management: Understanding their linkages and impact on business performance. *Omega*, *33*(2), 153–162. https://doi.org/10.1016/j.omega.2004.03.012

Karim, N. A., Nawawi, A., & Salin, A. S. A. P. (2018). Inventory management effectiveness of a manufacturing company – Malaysian evidence. *International Journal of Law and Management*, *60*(5), 1163–1178. https://doi.org/10.1108/ijlma-04-2017-0094

Kent State University. (2018). *LibGuides: Statistical & qualitative data analysis software: About GPower*. Kent.edu. https://libguides.library.kent.edu/statconsulting/GPower#s-lg-box-5670531

Khan, S. (2014). *Why do you use 5 point likert scale and not 7 point likert scale for getting responses?* ResearchGate. https://www.researchgate.net/post/Why_do_you_use_5_point_Likert_scale_and_not_7_point_Likert_scale_for_getting_responses

KHOR, W. M. (2017). Inventory management strategies propensity toward supply chain management in the aerospace industry in Malaysia. the moderating effect of financial risk consideration. *Universiti Utara Malaysia*, 1–291. https://etd.uum.edu.my/7360/1/s94197_01.pdf

Kithae, S., & Achuora, J. (2017). *Influence of inventory management on performance of the private commercial banks in Kenya.* Carijournals. researchgate.net/profile/Achuora-Odoyo2/publication/346368524_INFLUENCE_OF_INVENTORY_MANAGEMENT_ON_PERFORMANCE_OF_THE_PRIVATE_COMMERCIAL_BANKS_IN_KENYA/links/608f8a5ea6fdccaebd02e66d/INFLUENCE-OF-INVENTORY-MANAGEMENT-ON-PERFORMANCE-OF-THE-PRIVATE-COMMERCIAL-BANKS-IN-KENYA.pdf?origin=journalDetail&_tp=eyJwYWdlIjoiam91cm5hbERldGFpbCJ9

Kithinji, F. M. (2015). *Impact of information technology on inventory management in supermarkets in Nairobi city country*. http://erepository.uonbi.ac.ke/bitstream/handle/11295/93313/Kithinji_Impact%20of%20information%20technology%20on%20inventory%20management%20in%20supermarkets%20in%20Nairobi%20city%20county.pdf?sequence=1

Kosgei, R., & Gitau, R. (2016). Effect of supplier relationship management on organizational performance: A case study of Kenya airways limited. *International Academic Journal of Procurement and Supply Chain Management*, *2*(2), 134–148. https://www.iajournals.org/articles/iajpscm_v2_i2_134_148.pdf

Kshetri, N. (2021). Chinese technology enterprises in developing countries: Sources of strategic fit and institutional legitimacy. *ScienceDirect*, 181–200. https://doi.org/10.1016/B978-1-84334-464-3.50012-X

Kumar, S., Narkhede, B. E., & Jain, K. (2021). Revisiting the warehouse research through an evolutionary lens: A review from 1990 to 2019. *International Journal of Production Research*, *59*(11), 1–23. https://doi.org/10.1080/00207543.2020.1867923

Kwame, H., & Ampadu, K. (2017). *Effect of inventory management practices on the performance of small and medium enterprises in cape coast metropolis*. https://ir.ucc.edu.gh/xmlui/bitstream/handle/123456789/4060/AMPADU%2C%202017.pdf?sequence=1&isAllowed=y

Leads list of warehouses in malaysia. (2024). SmartScraper. https://rentechdigital.com/smartscraper/b2b-database/leads-list-of-warehouses-in-malaysia

Lennane, A. (2024, May 7). *Why inventory management is crucial in mitigating risk - the loadstar*. The Loadstar. https://theloadstar.com/why-inventory-management-is-crucial-in-mitigating-risk/

Lin, K. J., Karim, K., & Carter, C. (2015). Why does China's stock market have highly synchronous stock price movements? An information supply perspective. *Advances in Accounting*, *31*(1), 68–79. https://doi.org/10.1016/j.adiac.2015.03.006

Lwiki, T., Boniface Ojera, P., O Box, P., & Bagmaseno, P. (2013). The impact of inventory management practices on financial performance of sugar manufacturing firms in Kenya. *International Journal of Business, Humanities and Technology*. https://www.researchgate.net/profile/Virginia-Wachira-3/publication/353904000_The_Impact_of_Inventory_Management_Practices_on_Financial_Performance_of_Sugar_Manufacturing_Firms_in_Kenya/links/6117b49c169a1a0103fd13d4/The-Impact-of-Inventory-Management-Practices-on-Financial-Performance-of-Sugar-Manufacturing-Firms-in-Kenya.pdf?_sg%5B0%5D=started_experiment_milestone&origin=journalDetail

Malik, T. M., Hassan, S. M., & Tufail, M. (2023). The impact of supplier strategic partnership in supply chain on organizational performance: An empirical study of supply chain management in an emerging economy. *Logforum*, *19*(2), 277–293. https://doi.org/10.17270/j.log.2023.789

Manjrekar, A., Jha, Dr. Swati., Khapare, S., Jagtap, P., & Yadav, V. (2021). Warehouse inventory management with cycle counting using drones. *SSRN Electronic Journal*. https://doi.org/10.2139/ssrn.3869512

Mecalux. (2023). *Why warehouse technologies are the wave of the future*. Www.mecalux.com. https://www.mecalux.com/logistics-articles/warehouse-technologies-future

Mesay, A. (2022). *Assessment of inventory management practices in the case of Agp Poultry Plc Addis Ababa, Ethiopia*. http://repository.smuc.edu.et/bitstream/123456789/7065/1/Aklilu%20Taye%20Mesay-Thesis.pdf

Mong'ina Ondari, L., & Muturi, W. (2016). Factors affecting the efficiency of inventory management in organizations in Kenya a case of firms in Kisii town. *International Journal of Economics, Commerce and Management*, *4*. https://ijecm.co.uk/wp-content/uploads/2016/04/4459.pdf

Musau, E., Namusonge, G., Nambuswa, E., & Ngeno, J. (2017). The effect of inventory management on organizational performance among textile manufacturing firms in Kenya. *International Journal of Academic Research in Business and Social Sciences*, *7*(11). https://doi.org/10.6007/ijarbss/v7-i11/3543

Nag, T., & Ferdausy, Dr. S. (2021). Supply chain management practices and supply chain performance in the manufacturing industries of bangladesh. *Logistics & Supply Chain Review*, *2*(1), 1–26. https://doi.org/10.38157/logistics-supply-chain-review.v2i1.192

Nduta Gitau, N. (2016). *The effect of inventory management practices on operational performance of warehousing firm of Mombasa county*. http://erepository.uonbi.ac.ke/bitstream/handle/11295/100184/Gitau_The%20Effect%20Of%20Inventory%20Management%20Practices%20On%20Operational%20Performance%20Of%20Warehousing%20Firms%20In%20Mombasa%20County.pdf?sequence=1

Ng'ang'a, K. J. (2013). An Assessment of the Factors Influencing Effectiveness of Inventory Control: Ministry of State for Provincial Administration and Internal Security, Nairobi - *Kenya. International Journal of Business and Commerce*, 3(1), 33–53.

Nikolopoulou, K. (2022). *What is purposive sampling? | definition & examples*. Scribbr. https://www.scribbr.com/methodology/purposive-sampling/

Othman, A., & Falsafah, D. (2012). *Hubungan strategi rantaian bekalan dengan prestasi rantaian bekalan di dalam industri automotif di Malaysia*. https://etd.uum.edu.my/3453/1/ABDUL%20AZIZ%20OTHMAN.pdf

Öz, H. H., & Özyörük, B. (2021). Performance measurement in-fourth party reverse logistics. *Measuring Business Excellence*, *27*(1368-3047). https://doi.org/10.1108/mbe-05-2019-0048

Panigrahi, R. R., Jyoti, R. D., Jena, D., & Tanty, G. (2019). Advance inventory management practices and its impact on production performance of manufacturing industry. *ResearchGate*, *8*(4), 1–6. https://doi.org/10.35940/ijrte.D8266.118419

Pearson, N., Naylor, P.-J., Ashe, M. C., Fernandez, M., Yoong, S. L., & Wolfenden, L. (2020). Guidance for conducting feasibility and pilot studies for implementation trials. *Pilot and Feasibility Studies*, *6*(1). https://doi.org/10.1186/s40814-020-00634-w

Pfeffer, J., & Salancik, G. R. (1978). *The external control of organizations: A resource dependence perspective*. Papers.ssrn.com. https://ssrn.com/abstract=1496213

Rahman, S. ur, & Laosirihongthrong, T. (2008). Quality management practices in logistics services in Thailand. *International Journal of Integrated Supply Management*, *4*(1), 49. https://doi.org/10.1504/ijism.2008.016067

Rajwinder, S., Harmandeep, S., Bhimaraya, M., & Rajinder, P. K. (2010). Relating organised retail supply chain management practices, competitive advantage and organisational performance. *Vision: The Journal of Business Perspective*, *14*(3), 173–190. https://doi.org/10.1177/097226291001400303

Ramayah, T., Chia Yan, L., & Sulaiman, M. (2005). *SME e-readiness in Malaysia: Implications for planning and implementation*. https://www.ramayah.com/journalarticlespdf/smeereadiness.pdf

Rashid, A., & Amirah, N. A. (2017). Relationship between poor documentation and efficient inventory control at Provincial Ministry of Health, Lahore.

American Journal of Innovative Research and Applied Sciences, 5(6), 420–423.

Rashid, A., & Rasheed, R. (2023). Mediation of inventory management in the relationship between knowledge and firm performance. *SAGE Open*, *13*(2), 215824402311645. https://doi.org/10.1177/21582440231164593

Selvanathan, M., Jayabalan, N., Saini, G. K., Supramaniam, M., & Hussin, N. (2020). Employee productivity in Malaysia private higher educational institutions. *PalArch's Journal of Archaeology of Egypt / Egyptology*, *17*(3), 66–79. https://doi.org/10.48080/jae.v17i3.50

Sheila, N. (2010). *Information sharing, inventory management and customer satisfaction in the downstream chain of manufacturing firms in Uganda*. https://news.mak.ac.ug/wp-content/uploads/2011/06/Namagembe_Sheila.pdf

Showkat, N., & Parveen, H. (2017). *Non-Probability and probability sampling*. ResearchGate. https://www.researchgate.net/publication/319066480_Non-Probability_and_Probability_Sampling

Shukaili, S. A., Jamaluddin, Z., & Zulkifli, N. (2023). The impact of strategic inventory management on logistics organization's performance. *International Journal of Business and Technology Management*, *5*(3). https://doi.org/10.55057/ijbtm.2023.5.3.24

SPENCER, M. S., & COX, J. F. (1995). Optimum production technology (OPT) and the theory of constraints (TOC): Analysis and genealogy. *International Journal of Production Research*, *33*(6), 1495–1504. https://doi.org/10.1080/00207549508930224

Srivastav, A. K. (2019). *Pearson correlation coefficient (formula, example) | calculate pearson R*. Wallstreet Mojo. https://www.wallstreetmojo.com/pearson-correlation-coefficient/

Stephen, N. (2022). *Warehousing and inventory management*. ResearchGate. https://www.researchgate.net/publication/360734122_WAREHOUSING_AND_INVENTORY_MANAGEMENT

Surucu, L., & Maslakci, A. (2020). Validity and reliability in quantitative research. *Business & Management Studies: An International Journal*, *8*(3), 2694–2726. https://doi.org/10.15295/bmij.v8i3.1540

Tarigan, Z. J. H., & Siagian, H. (2021). The effects of strategic planning, purchasing strategy and strategic partnership on operational performance. *Uncertain Supply Chain Management*, *9*(2), 363–372. https://doi.org/10.5267/j.uscm.2021.2.006

Theory of constraints (TOC) management system fundamentals. (n.d.). In *Statements on Management Accounting* (pp. 1–36). Institute of Management Accountants. Retrieved August 10, 2024, from https://www.imanet.org/-/media/c59b1edcb59a41cea64352e04ca5a63d.ashx?as=1&mh=200&mw=200

Tundura, L. (2016). Effect of inventory control strategies on inventory record accuracy in kenya power company, nakuru. *ResearchGate*, *5*(5), 1–11. https://doi.org/10.11648/j.jim.20160505.16

Turvey, B. E. T. E. (2013). *Multiple regression analysis*. Multiple Regression Analysis - an overview | ScienceDirect Topics. https://www.sciencedirect.com/topics/social-sciences/multiple-regression-analysis

Umaru, M. (2016). *An assessment of the factors influencing effectiveness of inventory control; ministry of state for provincial administration and internal security, Nairobi -Kenya*. Academia.edu. https://www.academia.edu/22565054/An_Assessment_of_the_Factors_Influencing_Effectiveness_of_Inventory_Control_Ministry_of_State_for_Provincial_Administration_and_Internal_Security_Nairobi_Kenya

University of Miami. (2020). How to interpret correlation coefficient (r)? STATS-U. https://sites.education.miami.edu/statsu/2020/09/22/how-to-interpret-correlation-coefficient-r/

View of influence of strategic supplier relationship on supply chain performance in manufacturing firms in Nairobi country. (2024). Grandmarkpublishers.com. https://grandmarkpublishers.com/index.php/ijmbr/article/view/77/65

Warehouse management system market | WMS industry report, 2025. (2024). Www.grandviewresearch.com. https://www.grandviewresearch.com/industry-analysis/warehouse-management-system-wms-market

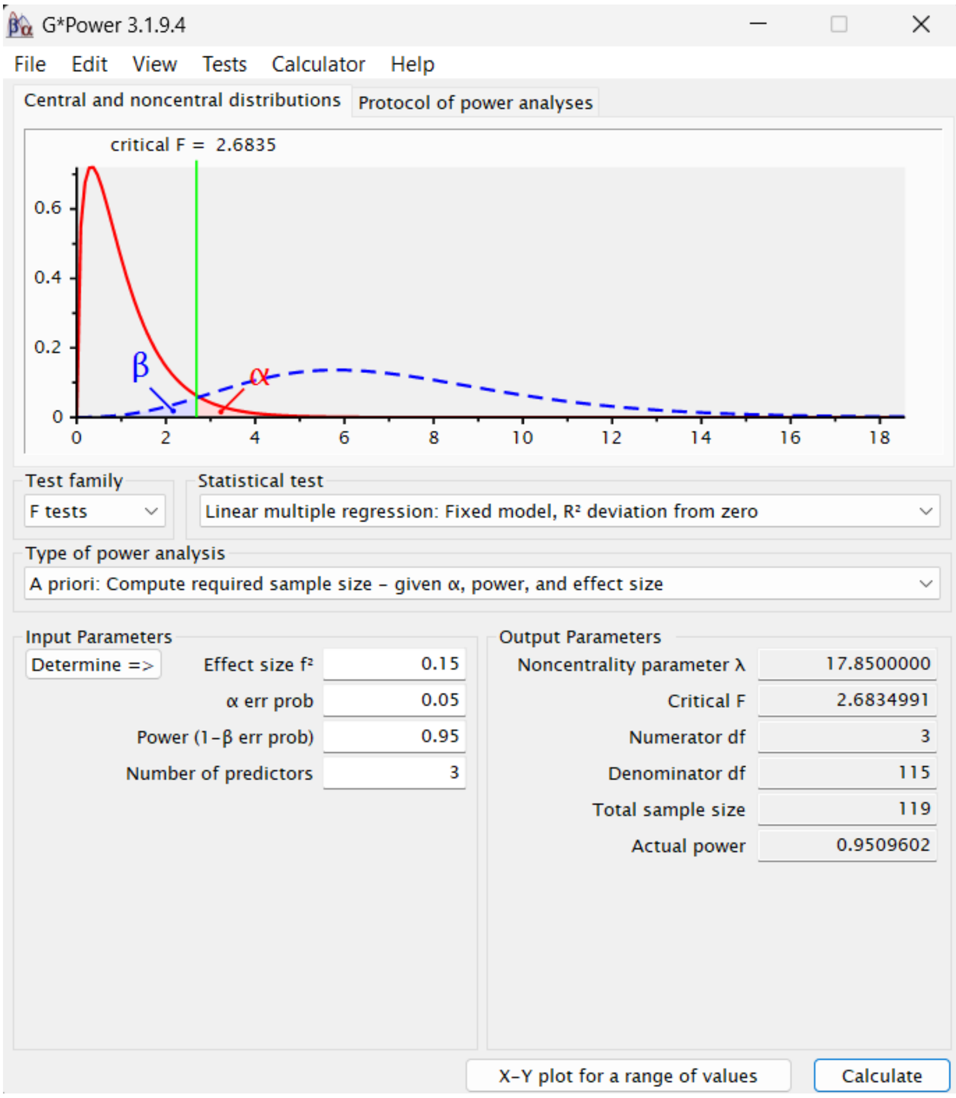
Zainun, T., & et al. (2018). *Influence of information technology, skills and knowledge, and financial resources on inventory management practices among small and medium retailers in Malaysia*. https://ir.uitm.edu.my/id/eprint/29581/1/29581.pdf

Zikmund, W. G., Babin, B. J., Carr, J. C., & Griffin, M. (2013). Business research methods. In *Google Books*. Cengage Learning. https://books.google.com.my/books/about/Business_Research_Methods.html?id=veM4gQPnWHgC&redir_esc=y

Appendicies

Appendix 3.1: G*Power

*Target respondents generated by G*power*



Appendix 3.2: Research Questionnaires

Section A: Personal and Company Information Part

Please fill in the information or select one for each of the following:

No.	Items	Indicators	Sources
1	Job Position	○ ______________________	Adapt from (Bahar et al., 2020)
2	Job Tenancy	○ Less than 1 year ○ 1-2 years ○ 3-6 years ○ 7-9 years ○ 10 years and above	Adapt from (Mulumba, 2016)
3	Which industry does your business operate in?	○ Food and Beverage ○ Pharmaceutical and Healthcare ○ Logistics and Transportation ○ Semiconductor Fabrication and Assembly ○ Telecommunications ○ Other, please specify: ______________________	Adapt from (Kanguru, 2016)
4	Organization Operating Years	○ 5 and below ○ 6-10 ○ 11-15 ○ 16-19 ○ 20 and above	Adapt from (Bahar et al., 2020)
5	Firm size	○ Less than 5 workers ○ 5-50 workers ○ above 50 workers	Adapt from (Ministry of investment, trade and industry, 2015)

Section B: Dependent Variable

Inventory Management Performance
Level of agreement

1 - Strongly Disagree 2 - Disagree 3 - Neutral 4 - Agree 5 - Strongly Agree

The following statement indicates your company's inventory management performance. The numbers 1 to 5 reflect a scale, with 1 representing strongly disagree and 5 representing strongly agree. Please indicate your level of agreement to each of the following statements anchored on the scale.

No.	Items	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Sources
1	The firm achieves accurate demand forecasting to determine stock coverage.	1	2	3	4	5	Adopt from (Musau et al., 2017)
2	The firm has put in place proper material handling in cases of stock out.	1	2	3	4	5	Adopt from (Musau et al., 2017)
3	The firm makes timely responses to customer references to ensure stock availability.	1	2	3	4	5	Adopt from (Musau et al., 2017)
4	The firm has mechanisms in place to ensure inventory accuracy.	1	2	3	4	5	Adopt from (Musau et al., 2017)
5	The firm optimizes utilization of warehouse capacity.	1	2	3	4	5	Adapt from (Musau et al., 2017)
6	The firm achieves optimal inventory.	1	2	3	4	5	Adopt from (Musau et al., 2017)

Section C: Independent Variable

Documentation
Level of agreement

1 - Strongly Disagree 2 - Disagree 3 - Neutral 4 - Agree 5 - Strongly Agree

The following is about the description of your company's documentation. The numbers 1 to 5 reflect a scale, with 1 representing strongly disagree and 5 representing strongly agree. Please indicate your level of agreement to each of the following statements anchored on the scale.

No.	Items	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Sources
1	Information is critical to an effective and efficient inventory management process.	1	2	3	4	5	Adopt from (Mong'ina Ondari & Muturi, 2016)
2	Accuracy of inventory records is necessary to provide satisfactory customer service.	1	2	3	4	5	Adopt from (Mong'ina Ondari & Muturi, 2016)
3	Accuracy of inventory records is necessary to determine replenishment of individual items.	1	2	3	4	5	Adopt from (Mong'ina Ondari & Muturi, 2016)
4	Proper documentation ensures that material availability meets repair or project demand.	1	2	3	4	5	Adopt from (Mong'ina Ondari & Muturi, 2016)
5	Accuracy of records provide the management with the information which is used to ensure accountability.	1	2	3	4	5	Adopt from (Mong'ina Ondari & Muturi, 2016)
6	Information is critical to an effective and efficient procurement process.	1	2	3	4	5	Adopt from (Mong'ina Ondari & Muturi, 2016)

Technology
Level of agreement

1 - Strongly Disagree 2 - Disagree 3 - Neutral 4 - Agree 5 - Strongly Agree

The following is about the description of your company's technology adoption. The numbers 1 to 5 reflect a scale, with 1 representing strongly disagree and 5 representing strongly agree. Please indicate your level of agreement to each of the following statements anchored on the scale.

No.	Items	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Sources
1	The firm has computerized all inventory management systems.	1	2	3	4	5	Adopt from (Lwiki et al., 2013)
2	The firm's computers are linked with those of suppliers in a real time environment.	1	2	3	4	5	Adapt from (Lwiki et al., 2013)
3	The firm uses Electronic Data Interchange technology (EDI).	1	2	3	4	5	Adapt from (Lwiki et al., 2013)
4	The firm uses Electronic Point of Sale (EPOS).	1	2	3	4	5	Adapt from (Lwiki et al., 2013)

Strategic Supplier Partnerships

Level of agreement

1 - Strongly Disagree 2 - Disagree 3 - Neutral 4 - Agree 5 - Strongly Agree

The following statement indicates your company's strategic supplier partnerships. The numbers 1 to 5 reflect a scale, with 1 representing strongly disagree and 5 representing strongly agree. Please indicate your level of agreement to each of the following statements anchored on the scale.

No.	Items	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Sources
1	The firm I work for maintains good working relationship with its suppliers.	1	2	3	4	5	Adopt from (Kwame & Ampadu, 2017)
2	The firm I work for communicates effectively and properly with its suppliers.	1	2	3	4	5	Adopt from (Kwame & Ampadu, 2017)
3	The firm I work for embrace the principle of early supplier involvement in its design and this reduces the chances to defective items and the risk of obsolescence.	1	2	3	4	5	Adopt from (Kwame & Ampadu, 2017)
4	The firm I work for adopts the Vendor Managed Inventory where the supplier has a responsibility for replenishing stock.	1	2	3	4	5	Adopt from (Kwame & Ampadu, 2017)

Appendix 3.3: Pilot Study

Inventory Management Performance

Case Processing Summary

		N	%
Cases	Valid	50	100.0
	Excluded[a]	0	.0
	Total	50	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.816	.817	6

Item Statistics

	Mean	Std. Deviation	N
IMPQ1	3.6600	.87155	50
IMPQ2	3.8400	.81716	50
IMPQ3	3.9400	.86685	50
IMPQ4	4.0000	.85714	50
IMPQ5	4.0200	.82040	50
IMPQ6	3.7400	.94351	50

Summary Item Statistics

	Mean	Minimum	Maximum	Range	Maximum / Minimum	Variance	N of Items
Item Means	3.867	3.660	4.020	.360	1.098	.021	6
Item Variances	.746	.668	.890	.222	1.333	.007	6

Double-click to activate

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
IMPQ1	19.5400	10.784	.429	.400	.819
IMPQ2	19.3600	10.235	.592	.461	.785
IMPQ3	19.2600	10.115	.568	.533	.790
IMPQ4	19.2000	9.347	.748	.641	.750
IMPQ5	19.1800	10.436	.545	.419	.794
IMPQ6	19.4600	9.560	.608	.537	.781

Scale Statistics

Mean	Variance	Std. Deviation	N of Items
23.2000	14.000	3.74166	6

Documentation

Case Processing Summary

		N	%
Cases	Valid	50	100.0
	Excluded[a]	0	.0
	Total	50	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.857	.860	6

Item Statistics

	Mean	Std. Deviation	N
DOCQ1	4.3000	.78895	50
DOCQ2	4.4400	.67491	50
DOCQ3	4.4200	.64175	50
DOCQ4	4.1600	.68094	50
DOCQ5	4.2800	.75701	50
DOCQ6	4.3600	.72168	50

Summary Item Statistics

	Mean	Minimum	Maximum	Range	Maximum / Minimum	Variance	N of Items
Item Means	4.327	4.160	4.440	.280	1.067	.011	6
Item Variances	.508	.412	.622	.211	1.511	.006	6

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
DOCQ1	21.6600	7.658	.543	.382	.854
DOCQ2	21.5200	7.642	.684	.516	.826
DOCQ3	21.5400	7.845	.666	.529	.830
DOCQ4	21.8000	7.796	.629	.497	.836
DOCQ5	21.6800	7.528	.614	.459	.839
DOCQ6	21.6000	7.184	.762	.636	.810

Scale Statistics

Mean	Variance	Std. Deviation	N of Items
25.9600	10.651	3.26365	6

Technology

Case Processing Summary

		N	%
Cases	Valid	50	100.0
	Excluded[a]	0	.0
	Total	50	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.855	.859	4

Item Statistics

	Mean	Std. Deviation	N
TECHQ1	3.8400	.97646	50
TECHQ2	3.4400	.97227	50
TECHQ3	3.5800	1.21370	50
TECHQ4	3.6800	1.18563	50

Summary Item Statistics

	Mean	Minimum	Maximum	Range	Maximum / Minimum	Variance	N of Items
Item Means	3.635	3.440	3.840	.400	1.116	.028	4
Item Variances	1.194	.945	1.473	.528	1.558	.081	4

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
TECHQ1	10.7000	8.582	.661	.520	.832
TECHQ2	11.1000	8.173	.755	.580	.797
TECHQ3	10.9600	6.815	.793	.631	.773
TECHQ4	10.8600	7.837	.613	.433	.855

Scale Statistics

Mean	Variance	Std. Deviation	N of Items
14.5400	13.315	3.64893	4

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Case Processing Summary

		N	%
Cases	Valid	50	100.0
	Excluded[a]	0	.0
	Total	50	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.694	.721	4

Item Statistics

	Mean	Std. Deviation	N
SSRQ1	4.3800	.66670	50
SSRQ2	4.2600	.72309	50
SSRQ3	3.7000	.97416	50
SSRQ4	3.8200	.98333	50

Summary Item Statistics

	Mean	Minimum	Maximum	Range	Maximum / Minimum	Variance	N of Items
Item Means	4.040	3.700	4.380	.680	1.184	.109	4
Item Variances	.721	.444	.967	.522	2.175	.076	4

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
SSRQ1	11.7800	4.093	.547	.483	.606
SSRQ2	11.9000	3.847	.580	.498	.580
SSRQ3	12.4600	3.437	.451	.207	.656
SSRQ4	12.3400	3.535	.409	.183	.687

Scale Statistics

Mean	Variance	Std. Deviation	N of Items
16.1600	6.015	2.45249	4

Appendix 4.1: Descriptive Analyses

Frequencies

Statistics

		JobPosition	JobTenancy	Industry	OrganizationOperatingYears	FirmSize
N	Valid	128	128	128	128	128
	Missing	0	0	0	0	0
Mean		6.6328	3.8047	3.6328	3.7344	2.5625
Median		6.0000	4.0000	3.0000	4.0000	3.0000
Mode		5.00	5.00	3.00	5.00	3.00

Frequency Table

JobPosition

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Corporate Compliance Officers	1	.8	.8	.8
	General Manager	11	8.6	8.6	9.4
	Operation Manager	10	7.8	7.8	17.2
	Executive Director	7	5.5	5.5	22.7
	Manager	30	23.4	23.4	46.1
	Director	16	12.5	12.5	58.6
	Business Development Executive	6	4.7	4.7	63.3
	Director of Transportation Manager	4	3.1	3.1	66.4
	Middle Manager	6	4.7	4.7	71.1
	Supervisor	17	13.3	13.3	84.4
	Supervisor	17	13.3	13.3	84.4
	Warehouse Manager	16	12.5	12.5	96.9
	Procurement Manager	4	3.1	3.1	100.0
	Total	128	100.0	100.0	

JobTenancy

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Less than 1 year	2	1.6	1.6	1.6
	1-2 years	12	9.4	9.4	10.9
	3-6 years	44	34.4	34.4	45.3
	7-9 years	21	16.4	16.4	61.7
	10 years and below	49	38.3	38.3	100.0
	Total	128	100.0	100.0	

Industry

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Food and Beverage	26	20.3	20.3	20.3
	Pharmaceutical and Healthcare	15	11.7	11.7	32.0
	Logistics and Transportation	38	29.7	29.7	61.7
	Semiconductor Fabrication and Assembly	15	11.7	11.7	73.4
	Telecommunications	13	10.2	10.2	83.6
	Paper	1	.8	.8	84.4
	Wholesaling	7	5.5	5.5	89.8
	Specialty Chemicals	2	1.6	1.6	91.4
	Manufacturing	11	8.6	8.6	100.0
	Total	128	100.0	100.0	

OrganizationOperatingYears

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	5 and below	7	5.5	5.5	5.5
	6-10	22	17.2	17.2	22.7
	11-15	20	15.6	15.6	38.3
	16-19	28	21.9	21.9	60.2
	20 and above	51	39.8	39.8	100.0
	Total	128	100.0	100.0	

FirmSize

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Less than 5 workers	1	.8	.8	.8
	5-50 workers	54	42.2	42.2	43.0
	above 50 workers	73	57.0	57.0	100.0
	Total	128	100.0	100.0	

Appendix 4.2: Reliability Test

Inventory Management Performance

Scale: IMP

Case Processing Summary

		N	%
Cases	Valid	128	100.0
	Excluded[a]	0	.0
	Total	128	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.765	6

Documentation

Scale: DOC

Case Processing Summary

		N	%
Cases	Valid	128	100.0
	Excluded[a]	0	.0
	Total	128	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.766	6

Technology

Scale: TECH

Case Processing Summary

		N	%
Cases	Valid	128	100.0
	Excluded[a]	0	.0
	Total	128	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.755	4

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Reliability

Scale: SSP

Case Processing Summary

		N	%
Cases	Valid	128	100.0
	Excluded[a]	0	.0
	Total	128	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.531	4

Appendix 4.3: Pearson Correlation Coefficient

Regression

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	SSRavg, DOCavg, TECHavg[b]	.	Enter

a. Dependent Variable: IMPavg

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.616[a]	.380	.365	.41567

a. Predictors: (Constant), SSRavg, DOCavg, TECHavg

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	13.127	3	4.376	25.326	.000[b]
	Residual	21.425	124	.173		
	Total	34.552	127			

a. Dependent Variable: IMPavg

b. Predictors: (Constant), SSRavg, DOCavg, TECHavg

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.108	.374		2.964	.004
	DOCavg	-.324	.276	-.287	-1.172	.243
	TECHavg	.647	.269	.605	2.401	.018
	SSRavg	.354	.076	.376	4.679	.000

a. Dependent Variable: IMPavg

Appendix 4.4: Mean and Standard Deviation

Frequencies

Statistics

		IMPavg	DOCavg	TECHavg	SSRavg
N	Valid	128	128	128	128
	Missing	0	0	0	0
Mean		3.8385	4.2409	4.1901	3.9375
Std. Deviation		.52160	.46194	.48815	.55415

Appendix 4.5: Average of Variables

Inventory Management Performance

Frequency Table

IMPavg

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1.50	1	.8	.8	.8
	2.83	2	1.6	1.6	2.3
	3.00	9	7.0	7.0	9.4
	3.17	6	4.7	4.7	14.1
	3.33	6	4.7	4.7	18.8
	3.50	14	10.9	10.9	29.7
	3.67	11	8.6	8.6	38.3
	3.83	15	11.7	11.7	50.0
	4.00	22	17.2	17.2	67.2
	4.17	19	14.8	14.8	82.0
	4.33	9	7.0	7.0	89.1
	4.50	6	4.7	4.7	93.8
	4.67	5	3.9	3.9	97.7
	4.83	1	.8	.8	98.4
	5.00	2	1.6	1.6	100.0
	Total	128	100.0	100.0	

Documentation

DOCavg

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	3.00	1	.8	.8	.8
	3.17	2	1.6	1.6	2.3
	3.33	3	2.3	2.3	4.7
	3.50	5	3.9	3.9	8.6
	3.67	9	7.0	7.0	15.6
	3.83	5	3.9	3.9	19.5
	4.00	25	19.5	19.5	39.1
	4.17	15	11.7	11.7	50.8
	4.33	15	11.7	11.7	62.5
	4.50	15	11.7	11.7	74.2
	4.67	16	12.5	12.5	86.7
	4.83	5	3.9	3.9	90.6
	5.00	12	9.4	9.4	100.0
	Total	128	100.0	100.0	

Technology

TECHavg

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	3.00	2	1.6	1.6	1.6
	3.17	3	2.3	2.3	3.9
	3.33	4	3.1	3.1	7.0
	3.50	3	2.3	2.3	9.4
	3.67	10	7.8	7.8	17.2
	3.83	15	11.7	11.7	28.9
	4.00	20	15.6	15.6	44.5
	4.17	12	9.4	9.4	53.9
	4.33	15	11.7	11.7	65.6
	4.50	14	10.9	10.9	76.6
	4.67	13	10.2	10.2	86.7
	4.83	5	3.9	3.9	90.6
	5.00	12	9.4	9.4	100.0
	Total	128	100.0	100.0	

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SSRavg

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	3.00	10	7.8	7.8	7.8
	3.25	10	7.8	7.8	15.6
	3.50	22	17.2	17.2	32.8
	3.75	21	16.4	16.4	49.2
	4.00	16	12.5	12.5	61.7
	4.25	18	14.1	14.1	75.8
	4.50	16	12.5	12.5	88.3
	4.75	7	5.5	5.5	93.8
	5.00	8	6.3	6.3	100.0
	Total	128	100.0	100.0	