

**Risk management strategies in logistics and supply chain operations: a case study at Joint
Medical Stores headquarters, Nsambya**

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APPROVAL PAGE

I certify that this research is submitted with my approval as a supervisor and is worth for the award of a bachelor's degree in Procurement and logistics management at Uganda Christian University presented by Namwase Betty Elizabeth on the topic entitled Risk management strategies in logistics and supply chain operations.

Signature

Date.....


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DECLARATION

I **NAMWASE BETTY ELIZABETH**, declare that this research report is my own effort and personal initiative and that it has never been submitted before to any university or institution for any academic award of this kind.

Signature.......... Date.....13th/07/2023.....

NAMWASE BETTY

DEDICATION

I dedicate this research endeavor to my beloved family and all the dedicated employees who contribute their time, efforts, and insights to organizations around the world. Your commitment and resilience inspire the pursuit of knowledge to create more supportive, fulfilling, and productive work environments.

I dedicate this report to my beloved brother kigenyi Ambrose to continue resting peace to whoever to the provision of guidance and protection provided to me when he was still alive .

I dedicate this report to my supervisor to the guidance given to me when I was writing this research that thank you for the time and opportunity

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I also express my appreciation to the participants who generously shared their time and perspectives, enabling the completion of this research report, May God bless you all.

TABLE OF CONTENTS

DECLARATION	1
APPROVAL	2
DEDICATION	3
ACKNOWLEDGEMENT	4
ABSTRACT	9
CHAPTER ONE: INTRODUCTION	1
1.0 Introduction	1
1.1 Background of the study	1
1.1.1 Historical background	1
1.1.2 Theoretical background	2
1.1.3 The conceptual background	3
1.1.4 Contextual background	4
1.2 Problem statement	5
1.3 Objectives of the study	5
1.3.1 General objective	5
Objectives of the study	5
1.3.3 Research questions	5
1.6 Research hypothesis	6
1.6 Scope of the study	6
1.6.1 Content scope	6
1.6.2 Geographical scope	6
1.6.3 Time scope	6
1.7 Justification of the Study	7
1.8 Significance of the study	7
1.9 Conceptual Framework	9
1.9 Definition of terms	11
CHAPTER TWO	12

LITERATURE REVIEW12

2.0 Introduction12

2.1.1 Logistics and Supply Chain Operations12

2.1.2 Inventory Management13

2.1.3 Warehousing and Distribution13

2.1.4 Demand Planning and Forecasting13

2.1.5 Customer Service and Order Management13

2.1.6 Transportation14

2.2 The contribution of risk identification in logistics on supply chain operations14

2.3 The role of risk mitigation and control in logistics on supply chain operations16

2.4 The relationship between risk assessment and analysis in logistics on supply chain operations18

2.5 Summary of reviewed literature20

CHAPTER THREE22

METHODOLOGY22

3.0 Introduction22

3.1 Research design22

3.2 Description of the population22

3.3 Sample size22

3.4 Sampling procedure22

3.5 Data collection instruments23

3.5.1 Interview guide23

3.5.2 Questionnaire23

3.7 Data analysis23

3.8 Data presentation23

3.9 Ethical Consideration23

CHAPTER FOUR25

DATA PRESENTATION, ANALYSIS AND INTERPRETATION OF FINDINGS25

4.0 Introduction25

4.1 Background information on respondents25

4.2 Quantitative findings on the general targeted respondents according to the study objectives26

4.2.1 Findings on the contribution of risk identification in logistics on supply chain operations at Joint Medical Stores26

4.2.2 The role of risk mitigation and control in logistics on supply chain operations at Joint Medical Stores30

4.2.3 The relationship between risk assessment and analysis in logistics on supply chain operations at Joint Medical Stores34

CHAPTER FIVE39

SUMMARY DISCUSSION OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS39

5.0 Introduction39

5.1 Summary discussion of findings39

5.1.1 The contribution of risk identification in logistics on supply chain operations at Joint Medical Stores39

5.1.2 The role of risk mitigation and control in logistics on supply chain operations at Joint Medical Stores40

5.1.3 The relationship between risk assessment and analysis in logistics on supply chain operations at Joint Medical Stores41

5.2 Conclusions43

5.2.1 The contribution of risk identification in logistics on supply chain operations at Joint Medical Stores43

5.2.2 The role of risk mitigation and control in logistics on supply chain operations at Joint Medical Stores43

5.2.3 The relationship between risk assessment and analysis in logistics on supply chain operations at Joint Medical Stores43

5.3 Recommendation44

5.3.1 The contribution of risk identification in logistics on supply chain operations at Joint Medical Stores44

5.3.2 The role of risk mitigation and control in logistics on supply chain operations at Joint Medical Stores44

5.3.3 The relationship between risk assessment and analysis in logistics on supply chain operations at Joint Medical Stores45

5.4 Suggestions for Further Research45

References46

APPENDIX: A49

Questionnaire to the procurement staff and the quality assurance staff at Joint Medical Stores Head Quarters, Nsambya49

APPENDIX: B53

Interview guide questions to the Quality assurance staff of Joint Medical Stores Head Quarters, Nsambya53

LIST OF TABLES

Table 2: Gender of Respondents25

Table 3: Age distribution of respondent at the Joint Medical Stores25

Table 4: Level of Education26

Table 5: The contribution of risk identification in logistics on supply chain operations at Joint Medical Stores27

Table 6: The role of risk mitigation and control in logistics on supply chain operations at Joint Medical Stores31

Table 7: The relationship between risk assessment and analysis in logistics on supply chain operations at Joint Medical Stores35

List of figure

Figure 1: Conceptual Model9

ABSTRACT

The study was conducted at Joint Medical Stores Headquarters in Nsambya, delved into risk management strategies within the realm of logistics and supply chain operations. The primary objectives were to assess the impact of risk identification, evaluate the role of risk mitigation and control, and investigate the relationship between risk assessment and analysis. Employing a descriptive research design, both qualitative and quantitative methods were utilized, including cross-sectional surveys and various sampling techniques.

The findings of this study underscored the importance of effective communication and education in the context of risk management. They revealed a need for addressing uncertainties and concerns among respondents, particularly those who were Not sure or disagreed with certain statements. The study emphasized the significance of fostering a shared understanding and commitment to risk management practices within Joint Medical Stores, ultimately contributing to the efficiency and resilience of the supply chain. It suggested implementing enhanced training programs, comprehensive documentation, and integrated frameworks to improve risk management practices and their understanding among staff at all levels.

In conclusion, this research provided valuable insights into risk management strategies within logistics and supply chain operations. It highlighted the need for better communication, education, and practical demonstrations to address concerns and uncertainties among stakeholders. By fostering a shared understanding and commitment to risk management practices, organizations like Joint Medical Stores could enhance their supply chain efficiency and resilience. The study's recommendations included training programs, comprehensive documentation, and integrated frameworks to improve risk management practices within the organization.

CHAPTER ONE: INTRODUCTION

1.0 Introduction

This chapter presents the risk management strategies in logistics and supply chain operations, it cover the background to the study, statement of the research problem, purpose, objectives, research questions, the hypothesis, scope, the significance or justification, limitations of the study and definitions of terms to solve the research problem.

1.1 Background of the study

This covers the historical, theoretical, conceptual and contextual backgrounds.

1.1.1 Historical background

The historical background of risk management strategies in logistics and supply chain operations has evolved as organizations recognize the importance of systematically addressing risks to achieve sustained benefits. The concept of risk management emerged as a central part of strategic management, aiming to mitigate risks associated with activities and processes. Poor outsourcing and risks in the supply chain, such as operational risks, decision risks, and supplier base reduction, have been identified as factors that can significantly impact organizational profitability (Kwabena, 2005). The understanding of risk management processes and the identification of various risks have evolved over time, leading to a comprehensive approach that includes risk identification, estimation, analysis/assessment, evaluation, reporting, communication, and monitoring/control (Bikker and Metzmakers, 2005).

The historical development of risk management in logistics and supply chain operations has highlighted the defensive and offensive roles it plays in manufacturing firms. Effective risk management is crucial for minimizing the impact of risks on organizational performance and requires strong leadership and governance (Jorion, 2009). Recognizing risks and managing them has become essential, as unidentified risks are considered riskier. Risk management extends beyond specific areas, such as sourcing, stockpiling, and insurance, to include supplier development, contractual obligations, collaborative initiatives, and careful supplier selection (Chopra and Meindl, 2007). The emphasis on risk management as a proactive strategy has grown, reflecting the multifaceted and complex nature of risks and the need to manage them rather than fear them (Payle, 1997; Greuning and Bratanovic, 1999).

The evolution of risk management in logistics and supply chain operations has necessitated ongoing risk assessment and quantification to enhance organizational understanding and improve performance. Organizations engage in rigorous analytical processes to identify and quantify risks, allowing them to determine risk tolerance and allocate resources effectively (Kwabena, 2005). Implementing a reporting and review structure, conducting regular audits, and ensuring compliance with policies and standards are essential components of effective risk management (Ukandu, 2007). The outcome of successful risk management practices includes increased confidence, quality assurance, resource allocation, disaster recovery and business continuity planning, enhanced reputation, coordination with service and delivery patterns, increased customer attraction, and improved profitability (Chapelle et al., 2004).

1.1.2 Theoretical background

Risk management is a critical component of an organization's strategic management, aimed at addressing risks associated with its activities to achieve sustained benefits. Risks in the supply chain and poor outsourcing can have a significant impact on organizational profitability (Kwabena, 2005). These risks encompass operational risks, decision risks, supplier base reduction, globalization, acquisition mergers, alliances, inertia, and just-in-time relationship risks. The process of risk management involves risk identification, estimation, analysis/assessment, evaluation, reporting, communication, and monitoring/control (Bikker and Metzmakers, 2005). This comprehensive approach ensures that risks are effectively managed to minimize their impact on the organization's operations and profitability.

Effective risk management serves as both a defensive mechanism and an offensive weapon for manufacturing firms, with the quality of leadership and governance playing a crucial role in its implementation. It is essential to recognize and manage risks, as unidentified risks are inherently riskier than recognized ones (Jorion, 2009). Risk management extends throughout various areas, including sourcing, stockpiling, insurance, supplier development, contractual obligations, collaborative initiatives, and careful supplier selection. By implementing robust risk management strategies, manufacturing firms can proactively address potential risks, mitigate their impact, and enhance their overall performance.

Assessing risks is an ongoing process that requires organizations to engage in rigorous analysis and quantify risks. Senior management or the board of directors must determine the organization's risk tolerance based on an assessment of potential losses (Kwabena, 2005). Effective risk assessment allows organizations to better understand their risk profile and allocate resources to target risk management measures that help mitigate risks and improve performance. To ensure effective risk management, organizations need to establish a reporting and review structure, conduct regular audits of policy compliance, and review performance to identify areas for improvement. The monitoring process provides assurance that appropriate controls are in place for the organization's activities, ensuring adherence to procedures (Ukandu, 2007).

1.1.3 The conceptual background

Risk management strategies refer to the systematic approaches and processes implemented by organizations to identify, assess, mitigate, and monitor risks associated with their operations (Ariane et al., 2004). These strategies aim to minimize the negative impact of uncertainties and vulnerabilities on the achievement of organizational objectives. In the context of JMS, risk management strategies would involve identifying potential risks in their logistics and supply chain operations, evaluating their likelihood and impact, and implementing appropriate measures to mitigate those risks.

On the other hand, logistics and supply chain operations encompass the activities involved in managing the flow of goods, services, and information from the point of origin to the point of consumption (Christopher & Lee, 2004). This includes procurement, transportation, warehousing, inventory management, and distribution processes (Chopra & Meindl, 2007). In the case of JMS, logistics and supply chain operations would revolve around ensuring the timely and efficient delivery of medical supplies and pharmaceuticals to various healthcare facilities.

Effective risk management strategies are vital for optimizing the performance and resilience of logistics and supply chain operations (Christopher & Lee, 2004). By identifying and addressing potential risks, such as disruptions in transportation, delays in procurement, or inventory shortages, organizations like JMS can enhance the efficiency, reliability, and overall performance of their logistics and supply chain processes. Furthermore, robust risk management

strategies can help mitigate financial losses, maintain customer satisfaction, and ensure the availability of essential medical supplies, contributing to the organization's overall success and impact in the healthcare sector (Chopra & Meindl, 2007). The relationship between risk management strategies and logistics and supply chain operations in the context of JMS Headquarters is symbiotic. Implementing effective risk management strategies within logistics and supply chain operations enables JMS to proactively address potential risks and uncertainties, leading to improved operational efficiency, cost-effectiveness, and better service delivery to healthcare facilities and patients.

1.1.4 Contextual background

The logistics and supply chain operations in Uganda, like in many other countries, face significant risks and challenges that can hinder their efficiency and profitability. Uganda, being a developing nation in East Africa, has experienced substantial economic growth and industrialization, resulting in increased demand for effective logistics and supply chain management. However, inadequate risk management strategies in this sector have led to various issues such as supply disruptions, inventory management problems, transportation delays, and escalated costs (Christopher, 2005; Kwabena, 2005). These challenges have hampered the overall performance of logistics and supply chain operations in Uganda.

One specific case study that exemplifies the need for research on risk management strategies is the Joint Medical Stores Headquarters in Nsambya, Uganda. Joint Medical Stores is a crucial organization responsible for the distribution of medical supplies and pharmaceutical products across the country. However, the organization has encountered challenges such as stockouts, inaccurate forecasting, poor inventory management, and supply chain disruptions (Kakuru, 2004; Niringiye, Luvanda & Shitundu, 2010). These issues not only hinder the availability and accessibility of vital medical supplies but also result in increased costs and compromised healthcare services.

Given the prevailing situation in Uganda's logistics and supply chain operations, there is a pressing need to investigate and develop effective risk management strategies. The identified challenges, including poor forecasting, stockouts, and supply chain disruptions, underscore the

importance of gaining a comprehensive understanding of the risks involved and implementing appropriate risk management practices (Bowen et al., 2001; Christopher & Lee, 2004). Conducting this study will provide valuable insights and facilitate the development and implementation of tailored risk management strategies that address the specific needs and challenges of logistics and supply chain operations in Uganda.

1.2 Problem statement

In today's globalized and complex business environment, logistics and supply chain operations are vital components of a company's success. However, these operations are inherently exposed to a myriad of risks that can disrupt the entire supply chain, leading to potential financial losses, delays, and damaged relationships with stakeholders. With the increasing frequency and severity of disruptions caused by natural disasters, geopolitical uncertainties, supplier failures, cyber-attacks, and pandemics, effective risk management strategies in logistics and supply chain operations are becoming more critical than ever. Therefore, this research proposal aims to investigate and develop comprehensive risk management strategies that can enhance the resilience and agility of logistics and supply chain operations to cope with potential disruptions and maintain smooth and efficient business processes.

1.3 Objectives of the study

1.3.1 General objective

The study examined the risk management strategies in logistics and supply chain operations.

Objectives of the study

- i. To assess the contribution of risk identification in logistics on supply chain operations at Joint Medical Stores
- ii. To establish the role of risk mitigation and control in logistics on supply chain operations at Joint Medical Stores
- iii. To establish the relationship between risk assessment and analysis in logistics on supply chain operations at Joint Medical Stores

1.3.3 Research questions

- i. How does risk identification in logistics contribute to supply chain operations at Joint Medical Stores

- ii. What is the role of risk mitigation and control in logistics on supply chain operations at Joint Medical Stores
- iii. What is the relationship between risk assessment and analysis in logistics on supply chain operations at Joint Medical Stores.

1.6 Research hypothesis

- i. To assess the contribution of risk identification in logistics on supply chain operations at Joint Medical Stores
- ii. To establish the role of risk mitigation and control in logistics on supply chain operations at Joint Medical Stores
- iii. To establish the relationship between risk assessment and analysis in logistics on supply chain operations at Joint Medical Stores

1.6 Scope of the study

1.6.1 Content scope

The study covered the risk management strategies in logistics and supply chain operations basing on the contribution of risk identification in logistics on supply chain operations at Joint Medical Stores, the role of risk mitigation and control in logistics on supply chain operations at Joint Medical Stores and the relationship between risk assessment and analysis in logistics on supply chain operations at Joint Medical Stores.

1.6.2 Geographical scope

The study was conducted at the headquarters of the Joint Medical Stores (JMS) located at 1828 Gogonya Road, in Nsambya, in the Makindye Division of Kampala, Uganda's capital and oldest city.

1.6.3 Time scope

The study focused from the period between 2006 and 2022 because this the time when Joint medical stores has strengthened its logistics operations. The length of time within which to finish this research was 5 months.

1.7 Justification of the Study

There are several justifications for conducting a study on risk management strategies in logistics and supply chain operations:

Enhancing Risk Mitigation: Logistics and supply chain operations are inherently exposed to various risks, including disruptions in transportation, inventory management, supplier reliability, and market volatility. Conducting this study can provide insights into effective risk management strategies that can help organizations mitigate these risks. By identifying and implementing appropriate risk management practices, companies can enhance their ability to respond to unforeseen events and minimize their impact on operations.

Improving Supply Chain Resilience: A resilient supply chain is crucial for maintaining operational continuity and meeting customer demands. This study can explore risk management strategies that enhance supply chain resilience by identifying vulnerabilities, establishing contingency plans, and building robustness against disruptions. Understanding the key factors that contribute to supply chain resilience can help organizations improve their ability to recover quickly from disruptions and maintain business continuity.

Optimizing Resource Allocation: Risk management strategies often involve allocating resources such as time, capital, and personnel to mitigate potential risks. By conducting this study, organizations can gain insights into the most effective allocation of resources to manage risks in logistics and supply chain operations. This can result in improved resource utilization, cost savings, and enhanced operational efficiency.

1.8 Significance of the study

The study on risk management strategies in logistics and supply chain operations holds significant importance for various stakeholders:

Policy Makers: Policymakers can use the research outcomes to design effective frameworks and initiatives that promote the adoption of risk management practices, ensuring the overall resilience and efficiency of the logistics sector.

Joint Medical Stores: As a case study organization, Joint Medical Stores can benefit from the study by gaining specific recommendations and insights tailored to their operations. The research can help identify the specific risks and challenges faced by the organization and provide practical strategies for managing those risks effectively.

Logistics Sector: The study's findings can contribute to the overall advancement and improvement of the logistics sector. By identifying and promoting best practices in risk management, the research can help enhance the sector's operational efficiency, mitigate risks, and ensure the smooth flow of goods and services.

Future Scholars: The study can serve as a valuable reference and foundation for future scholars interested in exploring risk management strategies in logistics and supply chain operations. It provides a framework for further research and investigation into specific aspects of risk management, allowing scholars to build upon existing knowledge and contribute to the field's advancement.

Student Researchers: For students interested in research, this study can serve as a source of inspiration and reference. It provides an opportunity for students to gain practical insights into the application of risk management strategies in a real-world context.

By studying the research methodology and outcomes, students can develop their research skills, expand their knowledge, and contribute to the existing body of literature.

1.9 Conceptual Framework

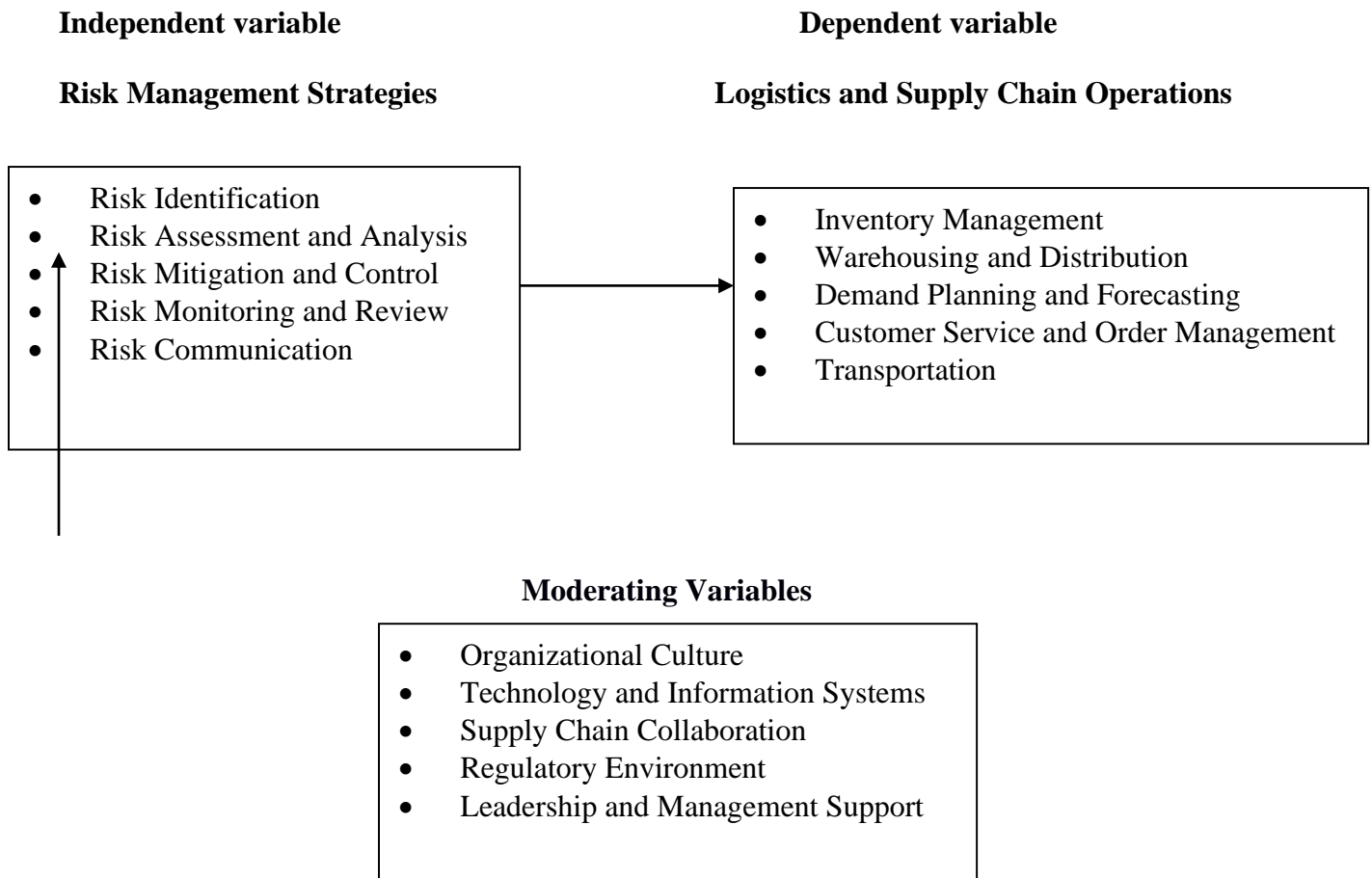


Figure 1: Conceptual Model

Source: Adopted and modified by the researcher

The conceptual framework shows the relationship between the independent variable (Risk Management Strategies) and the dependent variable (Logistics and Supply Chain Operations) is crucial in understanding how risk management strategies impact the various components of logistics and supply chain operations.

Risk Management Strategies, including Risk Identification, Risk Assessment and Analysis, Risk Mitigation and Control, Risk Monitoring and Review, and Risk Communication and Reporting, directly influence the performance and effectiveness of logistics and supply chain operations. By implementing effective risk management strategies, organizations can identify potential risks,

assess their impact, implement appropriate measures to mitigate risks, continuously monitor and review the risk landscape, and communicate and report on risk-related information. These actions help organizations proactively manage risks and enhance the overall efficiency and resilience of their logistics and supply chain operations.

The minor dependent variables, including Inventory Management, Warehousing and Distribution, Demand Planning and Forecasting, Customer Service and Order Management, and Transportation, are all influenced by the implementation of risk management strategies. For example, effective risk identification and assessment enable organizations to identify potential disruptions in the supply chain, which can help improve inventory management by ensuring optimal stock levels and reducing the risk of stockouts. Similarly, risk mitigation and control measures can enhance the efficiency of warehousing and distribution processes by reducing delays, improving order fulfillment, and minimizing the impact of unforeseen events. Additionally, risk management strategies contribute to accurate demand planning and forecasting, which enables organizations to meet customer demands effectively. Overall, the adoption of risk management strategies positively impacts the performance of logistics and supply chain operations across these minor dependent variables.

Moderating variables, such as Organizational Culture, Technology and Information Systems, Supply Chain Collaboration, Regulatory Environment, and Leadership and Management Support, play a significant role in shaping the relationship between risk management strategies and logistics and supply chain operations. These moderating variables can either enhance or hinder the effectiveness of risk management strategies. For example, a supportive organizational culture that promotes risk awareness and proactive decision-making can reinforce the implementation of risk management strategies, leading to improved logistics and supply chain operations. Similarly, advanced technology and information systems facilitate real-time risk monitoring, data analysis, and communication, enabling organizations to respond swiftly to potential risks. Effective supply chain collaboration enhances information sharing and coordination among stakeholders, fostering a collective approach to risk management. The regulatory environment also influences the adoption and implementation of risk management practices within the logistics and supply chain context. Lastly, strong leadership and

management support are essential in driving the prioritization of risk management and ensuring its integration into organizational strategies.

1.9 Definition of terms

Risk Management Strategies: Refers to the systematic processes, methods, and practices employed by organizations to identify, assess, mitigate, monitor, and communicate risks within their operations. It involves proactive measures to minimize the negative impact of risks and optimize business performance.

Logistics: Logistics refers to the process of planning, implementing, and controlling the efficient and effective flow and storage of goods, services, and related information from the point of origin to the point of consumption.

Supply Chain Operations: Supply chain operations involve the coordination and management of activities that occur within the broader supply chain network. It encompasses the entire process of transforming raw materials into finished products and delivering them to customers.

Risk Identification: Involves the process of identifying potential risks or hazards that may affect the organization's logistics and supply chain operations. This includes recognizing internal and external factors that could disrupt the flow of goods, services, or information.

Risk Mitigation and Control: Involves implementing measures and actions to reduce or eliminate identified risks. This includes developing strategies, policies, and procedures to minimize the occurrence and impact of risks and ensure business continuity.

Risk Monitoring and Review: Refers to the continuous monitoring and evaluation of identified risks and the effectiveness of risk mitigation measures. It involves regularly reviewing risk management processes and adjusting strategies as necessary to address emerging risks.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

This chapter presents a comprehensive literature review, drawing on diverse sources from public resource centers and the internet. The review is structured around three central themes: the contribution of risk identification in logistics on supply chain operations, the role of risk mitigation and control in logistics on supply chain operations and the relationship between risk assessment and analysis in logistics on supply chain operations. Additionally, the study identifies gaps in the existing literature to pinpoint areas that require further research.

2.1.1 Logistics and Supply Chain Operations

Abdullah et al. (2004) highlight the importance of extending the concept of supply chain to value chains, emphasizing the need to consider the entire value creation process, from raw materials to the end product. This approach enables a more holistic understanding of potential risks and vulnerabilities within the supply chain. Allayannis et al. (2001) emphasize the significance of managing exchange rate risk, particularly in East Asia, where currency fluctuations can significantly impact logistics and supply chain costs. To address these risks, companies can implement hedging strategies, such as forward contracts or currency swaps, to mitigate the potential adverse effects of currency volatility.

In logistics and supply chain operations, companies should also focus on operational risk management. Ariane et al. (2004) stress the implications of Basel II regulations on risk measurement and management in the financial sector. While these regulations primarily apply to banks, similar principles can be adapted to logistics and supply chain operations. Adopting sound risk measurement methods and integrating contingency plans can help address operational uncertainties and mitigate the impact of potential disruptions. Besner and Hobbs (2012) highlight the paradox of risk management, where overly conservative risk avoidance strategies can hinder innovation and competitiveness. Thus, companies should strike a balance between risk aversion and risk-taking to optimize their supply chain performance while safeguarding against potential pitfalls.

2.1.2 Inventory Management

Inventory Management plays a critical role in balancing production and demand to ensure optimal levels of raw materials, work-in-progress, and finished goods. Efficient inventory management minimizes holding costs and prevents stockouts or overstocking. Kakuru (2004) emphasizes the need for companies to manage inventory effectively to avoid tying up capital in excess inventory. Proper inventory control helps in aligning supply with demand and contributes to improved supply chain performance.

2.1.3 Warehousing and Distribution

Warehousing and Distribution are key components of logistics and supply chain operations, enabling efficient storage and delivery of products. Warehouses serve as storage facilities for inventory management, and distribution centers facilitate the sorting and transportation of goods. Effective warehousing and distribution practices help in timely deliveries and support streamlined supply chain operations (Ritchie, 2007). Companies can optimize their inventory flow and reduce lead times, leading to improved customer service levels. Proper coordination between warehousing and distribution helps in reducing handling and transportation costs, enhancing overall supply chain efficiency (Kakuru, 2004).

2.1.4 Demand Planning and Forecasting

Demand Planning and Forecasting are crucial in anticipating customer needs and aligning production and inventory levels accordingly. Accurate demand forecasts allow companies to avoid stockouts and excess inventory, leading to cost savings. Kwabena (2005) highlights the importance of assessing risks in manufacturing firms, which includes demand uncertainties. By adopting effective demand planning and forecasting techniques, companies can better plan their production schedules and improve their overall supply chain efficiency.

2.1.5 Customer Service and Order Management

Customer Service and Order Management are essential for building strong customer relationships and enhancing brand loyalty. Efficient order management systems, as highlighted by Kakuru (2004), enable smooth order processing, timely deliveries, and effective

communication with customers. Exceptional customer service contributes to customer satisfaction and repeat business, impacting a company's overall performance.

2.1.6 Transportation

Transportation is a vital element in supply chain operations, involving the movement of goods between different locations. Efficient transportation management, as emphasized by Ritchie (2007), ensures timely deliveries and cost-effective operations. By selecting appropriate carriers, optimizing routes, and managing freight costs, companies can enhance their transportation efficiency and contribute to a more responsive supply chain.

In a nutshell, logistics and supply chain operations are multifaceted processes that require effective management of inventory, warehousing, demand planning, customer service, and transportation. By implementing efficient practices and adopting proactive risk management strategies, companies can optimize their supply chain performance and gain a competitive edge in the market.

2.2 The contribution of risk identification in logistics on supply chain operations

The contribution of risk identification in logistics on supply chain operations has been a subject of significant interest in the field of supply chain management. Logistics operations involve the movement, storage, and distribution of goods, making them susceptible to various risks that can disrupt the smooth flow of the supply chain. Studies such as Abdullah et al. (2004) and Besner and Hobbs (2012) highlight the importance of risk identification in mitigating potential disruptions and enhancing the overall efficiency of supply chain operations.

Effective risk identification enables supply chain managers to proactively assess and anticipate potential risks, allowing them to implement appropriate risk management strategies. This involves analyzing various factors, such as transportation delays, inventory management issues, supplier reliability, and geopolitical risks, to name a few. By identifying these risks early on, supply chain managers can develop contingency plans and implement risk-mitigating measures to ensure the continuity of operations and minimize the impact of disruptions.

However, there are still gaps in the literature regarding risk identification in logistics and its specific impact on supply chain operations. While some studies, like Chopra and Meindl (2003), emphasize the significance of risk management in supply chain strategy and planning, there is a need for more in-depth research that explores the specific methods and tools used for risk identification in logistics. Furthermore, the effectiveness of risk identification in different types of supply chains and industries needs further investigation to develop comprehensive risk management strategies tailored to specific contexts.

Carvalho and Rabechini Junior (2015) argue that soft skills, such as communication and collaboration, are essential for effective risk identification and management in projects. This notion can be applied to logistics operations as well, as effective communication and collaboration between supply chain stakeholders are crucial for identifying and mitigating risks. Studies that delve into the role of soft skills in risk identification within logistics can provide valuable insights into optimizing supply chain operations.

Another aspect that requires further exploration is the integration of emerging technologies, such as big data analytics and artificial intelligence, in risk identification in logistics. Research by Chappelle and Plane (2005) on the use of data envelopment analysis in measuring productive efficiency in the manufacturing sector suggests that similar data-driven approaches can be applied to logistics risk identification. Investigating the potential of advanced analytics in enhancing risk identification and response strategies can significantly contribute to supply chain optimization.

Additionally, research should focus on the identification and analysis of emerging risks and uncertainties in logistics. With global markets becoming more interconnected and dynamic, supply chains are exposed to a wide array of potential risks, including geopolitical tensions, climate change impacts, and disruptive technologies. Investigating how logistics operations can adapt to these emerging risks and uncertainties is crucial for building resilient supply chains. Studies like Ariane et al. (2004) highlight the implications of Basel II on risk management in the financial sector, emphasizing the importance of similar explorations in the logistics context.

Furthermore, the role of organizational culture and leadership in promoting a risk-aware culture within logistics operations is another area worth exploring. Organizational culture plays a significant role in shaping how risks are perceived, communicated, and managed. Leaders who prioritize risk identification and encourage open communication about potential risks foster a proactive risk management environment. Research by Allayannis, Brown, and Klapper (2001) on exchange rate risk management in East Asia provides insight into the role of organizational context in risk management. Investigating the relationship between leadership practices, organizational culture, and effective risk identification in logistics can contribute to enhancing overall supply chain resilience.

In conclusion, risk identification in logistics plays a critical role in supply chain operations by enabling proactive risk management and enhancing overall efficiency. However, there are gaps in the literature that warrant further research, including exploring specific risk identification methods and tools, the role of soft skills in risk identification, and the integration of emerging technologies in the process. Addressing these gaps can lead to a more comprehensive understanding of the contribution of risk identification to logistics and supply chain operations, ultimately leading to more resilient and optimized supply chains.

2.3 The role of risk mitigation and control in logistics on supply chain operations

The role of risk mitigation and control in logistics is crucial for ensuring the smooth and efficient functioning of supply chain operations. Zheng, Yildiz, and Talluri (2015) emphasize the significance of risk management in supply chains to identify potential threats and develop strategies to minimize their impact. Risk mitigation involves implementing preventive measures and contingency plans to reduce the probability of risks occurring and to handle them effectively when they do. For instance, implementing robust inventory management practices can help reduce the risk of stockouts or excess inventory, thereby enhancing supply chain efficiency.

One area that requires further research is the evaluation of different risk mitigation strategies and their effectiveness in different industries and contexts. Ryan et al. (2013) discuss the empirical performance of risk identification methods, but more studies are needed to assess the real-world effectiveness of specific risk mitigation techniques. Investigating the challenges and successes of

risk control measures can provide valuable insights into refining and customizing risk management strategies for various supply chain settings.

Moreover, the role of technology in enhancing risk mitigation and control in logistics should be explored further. Krejcie and Morgan (1986) emphasize the importance of leveraging technology for efficient operations. The integration of advanced analytics, artificial intelligence, and real-time monitoring can significantly enhance risk detection and mitigation capabilities in supply chains. Research should focus on identifying suitable technological solutions and their potential impact on supply chain performance.

Additionally, the influence of firm size on risk mitigation practices in logistics warrants investigation. Niringiye, Luvanda, and Shitundu (2010) study firm size and technical efficiency in East African manufacturing firms, but specific research is required to understand how different-sized organizations approach risk mitigation in their supply chains. Smaller firms might face unique challenges in implementing risk control measures, and studying their strategies can offer valuable lessons for enhancing risk management practices across the supply chain landscape.

Furthermore, exploring the role of collaboration and coordination among supply chain partners in risk mitigation is essential. Ritchie (2007) highlights the importance of supply chain risk management, but research on how effective communication and collaboration among stakeholders can lead to better risk control is lacking. Investigating successful collaborative efforts and their impact on supply chain resilience can help foster better risk management practices among supply chain partners.

Further research is needed to explore the impact of cultural and regulatory factors on risk mitigation and control in logistics. Allayannis, Brown, and Klapper (2001) discuss exchange rate risk management in East Asia, but more comprehensive studies are required to understand how cultural norms and regulatory frameworks influence risk management decisions in supply chains. Different regions and countries may have varying approaches to risk control, and understanding

these nuances can help multinational organizations develop tailored risk management strategies for their diverse supply chain networks.

Additionally, investigating the relationship between risk mitigation and supply chain performance can provide valuable insights. Carvalho and Rabechini Junior (2015) highlight the importance of soft skills in risk management, but there is a need to examine how effective risk mitigation practices impact key performance indicators such as lead time, cost efficiency, and customer satisfaction. Identifying the link between risk control measures and supply chain performance outcomes can guide organizations in prioritizing their risk management efforts.

Furthermore, studies should delve into the role of top management support and organizational culture in fostering a risk-aware supply chain environment. Besner and Hobbs (2012) discuss the paradox of risk management from a project management perspective, but research specific to supply chains can shed light on how leadership support and a risk-aware culture influence the adoption and effectiveness of risk mitigation strategies. Organizations with strong top management support and a culture that values risk awareness are more likely to prioritize risk management efforts, leading to better outcomes in mitigating and controlling risks.

Moreover, a deeper analysis of the financial implications of risk mitigation in supply chains is necessary. Bikker and Metzmakers (2005) discuss bank provisioning behavior and procyclicality, but research should explore how different risk control strategies impact the financial performance and stability of supply chain entities. Assessing the costs associated with implementing risk mitigation measures and comparing them with potential savings from risk reduction can help organizations make informed decisions about their risk management investments.

2.4 The relationship between risk assessment and analysis in logistics on supply chain operations

The relationship between risk assessment and analysis in logistics plays a crucial role in ensuring the smooth functioning and resilience of supply chain operations. According to Talluri, Kull, Yildiz, and Yoon (2013), risk assessment involves identifying potential risks that could disrupt

supply chain activities, such as natural disasters, supplier disruptions, or demand fluctuations. On the other hand, risk analysis involves evaluating the likelihood and impact of these identified risks to prioritize and develop appropriate risk mitigation strategies. This relationship helps supply chain managers to proactively address potential disruptions, reduce uncertainty, and improve overall supply chain performance.

However, there are gaps in the literature regarding the integration of risk assessment and analysis in logistics. While existing studies, such as those by Bowen et al. (2001) and Christopher and Lee (2004), discuss risk management practices in supply chains, there is limited research on how risk assessment findings inform the subsequent risk analysis process. Understanding the link between the two phases can provide insights into how risk information is utilized to make informed decisions and enhance the effectiveness of risk mitigation efforts.

Moreover, research is needed to explore the impact of risk assessment and analysis on supply chain performance. Tummala and Schoenherr (2011) emphasize the importance of supply chain risk management processes, but there is a lack of empirical evidence on how these practices influence key performance indicators, such as cost efficiency, lead time, and customer satisfaction. Examining this relationship can help supply chain managers identify the most critical risks to target and allocate resources efficiently to improve overall supply chain outcomes.

Additionally, there is a need to investigate the role of advanced technologies, such as artificial intelligence and big data analytics, in enhancing risk assessment and analysis capabilities in logistics. Srinivasan and Jeffrey (2017) introduce the concept of the supply chain immune system, which leverages data-driven techniques to predict and respond to risks in real-time. However, more research is required to understand the practical implementation and benefits of such technologies in supply chain risk management.

Furthermore, exploring the cultural and organizational factors that influence risk assessment and analysis processes is essential. Roger and Boudewijn (2006) discuss quality and risk management issues, but there is limited research on how organizational culture and leadership

support impact the effectiveness of risk assessment and analysis practices. Understanding these factors can help identify potential barriers to effective risk management and inform strategies to foster a risk-aware organizational culture.

In summary, the relationship between risk assessment and analysis in logistics is crucial for effective supply chain risk management. However, gaps exist in understanding how risk assessment findings inform risk analysis, the impact of risk management on supply chain performance, the role of advanced technologies in enhancing risk management capabilities, and the influence of cultural and organizational factors. Addressing these gaps through further research will provide valuable insights to enhance supply chain resilience and performance.

2.5 Summary of reviewed literature

The literature review on the contribution of risk identification in logistics to supply chain operations revealed that effective risk assessment and analysis play a crucial role in enhancing supply chain resilience and performance. Studies by Talluri et al. (2013) and Chopra and Meindl (2007) emphasize the importance of identifying potential risks that could disrupt supply chain activities and evaluating their impact. However, there are gaps in the literature regarding the integration of risk assessment and analysis. Further research is needed to understand how risk assessment findings inform the subsequent risk analysis process, which can provide valuable insights into decision-making and risk mitigation strategies.

In the context of risk mitigation and control in logistics, the literature review highlighted the significance of proactively addressing potential disruptions to ensure supply chain continuity. Research by Besner and Hobbs (2012) and Carvalho and Rabechini Junior (2015) underlines the importance of risk management practices in project and supply chain contexts. However, there is a lack of empirical evidence on the impact of risk management on supply chain performance. Closing this gap requires studying the relationship between risk management practices and key performance indicators, such as cost efficiency and customer satisfaction.

Regarding the role of risk assessment and analysis in logistics on supply chain operations, the literature review revealed that effective risk management processes are essential for improving

supply chain resilience. Studies by Srinivasan and Jeffrey (2017) and Ryan et al. (2013) highlight the significance of advanced technologies in enhancing risk management capabilities. However, there is limited research on the practical implementation and benefits of such technologies in supply chain risk management. Addressing this gap requires further investigation into how artificial intelligence and big data analytics can be leveraged to predict and respond to risks in real-time.

In summary, the literature review underscores the importance of risk assessment and analysis in logistics to ensure the smooth functioning and resilience of supply chain operations. The gaps in the literature identified include the need for better integration of risk assessment and analysis, understanding the impact of risk management on supply chain performance, exploring the role of advanced technologies in risk management, and studying the influence of organizational and cultural factors on risk management practices. Closing these gaps through further research will provide valuable insights for enhancing supply chain resilience and performance.

CHAPTER THREE

METHODOLOGY

3.0 Introduction

In that chapter, several aspects were analyzed. The chapter threw light on sample selection, highlighted explanations on how data would be selected and processed (analyzed).

3.1 Research design

In the study, the research was descriptive in nature and allowed the use of both qualitative and quantitative methods, where qualitative determined wordy responses, and quantitative determined the frequency distribution of responses used as an interpretive technique. The researcher adopted a cross-sectional survey where different categories of the targeted population were studied at one point in time. Some respondents were selected by the researcher randomly to obtain the appropriate information required by the researcher.

3.2 Description of the population

Under this study, the researcher carried out the study with the help of the procurement staff, quality assurance staff, and other support staff.

Category of Respondents	Study Population	Sample Size
Procurement staff	10	9
Quality assurance staff	9	8
Other support staff	26	25
Total	45	42

3.3 Sample size

3.4

Sampling procedure

The researcher used a purposive sampling technique when selecting the procurement staff and the quality assurance staff. This method was applied since it is often employed when researchers sought the input of experts or individuals with specialized knowledge in a particular field. By selecting participants who were considered experts, the study could benefit from their unique insights and expertise. Simple random sampling was applied when selecting the support staff since they were many, and this method gave a chance to every respondent to participate.

3.5 Data collection instruments

3.5.1 Interview guide

Interviews were used because they were convenient for the researcher, for example, the unstructured interview where the respondent was free to explain a question according to the existing situation. This helped the researcher to gather more information. The researcher interviewed the other support staff. The researcher used at least 30 minutes in each interview with the respondent as he noted down some points.

3.5.2 Questionnaire

The researcher sent semi-structured questionnaires to the procurement staff and the quality assurance staff. They were also given time to fill in the questionnaires, hence providing accurate results to the researcher. The questionnaire was self-administered, whereby after two weeks of submission of questionnaires to the respondents, the researcher went on collecting the questionnaires from the respondents.

3.7 Data analysis

Both qualitative and quantitative methods were used by the researcher to analyze data. Qualitatively, most documents were expressed in words like the literature and the sent questionnaires. Additionally, quantitatively, the researcher analyzed and presented data in tables, charts, graphs, and percentages to verify the data further.

3.8 Data presentation

The information obtained from the questionnaire and interviews guided was expressed in figures and tabulations for interpretation and analysis. Some of it was used to draw graphs and figures to allow important conclusions to be made. Some other data was merely described and interpreted there and then.

3.9 Ethical Consideration

Ethical considerations deal with one's conduct and help guide a researcher on how to behave and maintain relationships with specific individuals or groups. In this context, the researcher needed to acquire permission and approval from various levels of authority. Maintaining high discipline and integrity within the community where the study was conducted was crucial, with a clear focus on several ethical principles:

Confidentiality: All information gathered from the respondents was protected and kept confidential between the researcher and the particular respondent. This ensures that the privacy of the participants is respected, and their personal information remains secure.

Academic Purpose: The data collected was solely intended for academic purposes and was not to be used for any other field outside academics. This principle underscores the importance of using research data responsibly and ethically.

Honesty: The researcher was expected to be honest with themselves and the respondents. This involved accurately representing the research goals and avoiding any form of manipulation during data collection. Honesty ensures the integrity of the research process.

Openness: The researcher should have been willing and ready to receive impressions or ideas from the respondents. Openness promotes a collaborative and respectful research environment where diverse perspectives are valued.

Respect for Intellectual Property: The researcher was expected to respect the intellectual property of the respondents in their various categories. This includes acknowledging and properly citing the contributions and ideas of others.

Confidentiality (Again): Discretion in keeping sensitive or confidential information was paramount. This principle reinforces the importance of safeguarding the privacy and trust of the participants.

These ethical considerations are fundamental to conducting research responsibly and with integrity. They help ensure that the research process is conducted in an ethical manner that respects the rights and well-being of all involved parties.

CHAPTER FOUR

DATA PRESENTATION, ANALYSIS AND INTERPRETATION OF FINDINGS

4.0 Introduction

This chapter presents background characteristics of respondents and findings with reference to the research objectives. Data was presented using percentages organized in tables. The researcher distributed 42 questionnaires to the respondents and were all returned representing a 100% response rate.

4.1 Background information on respondents

This section presents the background characteristics of respondents and these include sex, age, marital status, terms of employment, level of education.

Table 1: Gender of Respondents

<u>Sex of Respondent</u>	<u>Frequency</u>	<u>Percent</u>
<u>Male</u>	<u>20</u>	<u>47.6%</u>
<u>Female</u>	<u>22</u>	<u>52%</u>
<u>Total</u>	<u>42</u>	<u>100.0</u>

Source: Primary source

The table presents data on the sex of respondents, with a total sample size of 42 participants. Of these, 20 respondents were male, accounting for 47.6% of the total sample, while 22 respondents were female, making up 52% of the total sample. The data indicates a nearly balanced distribution between male and female respondents. This suggests that the study was able to capture perspectives and insights from both genders, providing a well-rounded view of the subject matter. The relatively equal representation of both sexes enhances the validity and comprehensiveness of the study's findings, as it incorporates diverse viewpoints and experiences.

Table 2: Age distribution of respondent at the Joint Medical Stores

<u>Marital Status</u>	<u>Frequency</u>	<u>Percent</u>
<u>18 –30</u>	<u>15</u>	<u>35.7%</u>
<u>31-40</u>	<u>18</u>	<u>42.8%</u>
<u>41-50</u>	<u>7</u>	<u>16.6%</u>
<u>Over 50</u>	<u>2</u>	<u>4.7%</u>
<u>Total</u>	<u>42</u>	<u>100.0</u>

Source: Primary source

Table 3 provides information on the age distribution of respondents at the Joint Medical Stores, with a total sample size of 42 participants. The age distribution indicates a diverse range of participants across different age groups. The highest representation is observed in the 31 to 40 age range, which could reflect the demographics of the Joint Medical Stores's workforce. The distribution shows a relatively balanced spread, which is beneficial for capturing a variety of perspectives and experiences stemming from different life stages and career trajectories.

Table 3: Level of Education

<u>Education Level</u>	<u>Frequency</u>	<u>Percent</u>
CC level	5	11.9
A' level	5	11.9
Certificate/Diploma	18	42.8
Degree	10	23.8
Postgraduate	2	4.7
Others	2	4.7
Total	42	100.0

Source: Primary source

4.2 Quantitative findings on the general targeted respondents according to the study objectives

The following section presents an analysis and interpretation of data in accordance with the three research objectives. Each of the objective forms a subsection under which data is presented, analyzed and interpreted.

4.2.1 Findings on the contribution of risk identification in logistics on supply chain operations at Joint Medical Stores

The primary aim of the first study objective was to investigate the primary aim of the first study objective was to investigate the contribution of risk identification in logistics on supply chain operations at Joint Medical Stores. To fulfill this aim, respondents were requested to express their level of agreement with five statements using a 5-point Likert scale, ranging from "strongly agree" to "strongly disagree." The subsequent table provides an overview of the range of agreement levels, represented by the abbreviations 1 SD (Strongly Disagree), 2 D (Disagree), 3 N (Not sure), 4 A (Strongly Agree), 5 A (Agree), as outlined in Table 5 below. This approach

was utilized to ascertain the minimum and maximum values associated with the various degrees of agreement.

Table 4: The contribution of risk identification in logistics on supply chain operations at Joint Medical Stores

No.	Statements	5	4	3	2	1	Total
							Freq
D1	The identification of potential risks in logistics helps to recognize vulnerabilities in supply chain operations at Joint Medical Stores	22	10	5	00	5	42
		52%	23.8%	11.9%	00%	11.9%	100
D2	Assessing the likelihood potential impact of risks assists in prioritizing risk management efforts in supply chain at Joint Medical Stores	15	10	5	00	10	42
		35.7%	23.8%	11.9%	00%	23.8%	100
D3	Regularly reviewing historical data industry trends aids in identifying emerging risks that could affect supply chain at Joint Medical Stores	25	10	5	00	2	42
		59.5%	23.8%	11.9%	00%	4.7%	100
D4	Collaborative discussions among cross-functional teams contribute to the comprehensive identification of risks in supply chain at Joint Medical Stores	22	10	5	00	5	42
		52%	23.8%	11.9%	00%	11.9%	100
D5	Effective risk identification in logistics significantly enhances the efficiency of reliability of supply chain operations at Joint Medical Stores	15	10	5	00	10	42
		35.7%	23.8%	11.9%	00%	23.8%	100

Source: Primary source

The findings revealed that the majority of respondents (64.9%) agree or strongly agree with the statement, indicating a positive perception of risk identification. However, it's worth noting that 11.9% of respondents were Not sure, and 23.8% disagreed. This suggests that a significant portion of respondents may not fully grasp the importance of risk identification or have reservations about its effectiveness. The general implication is that while there is overall support

for risk identification, there is also a need for education or communication to address the concerns of the Not sure and disagreeing respondents.

On the second statement, most respondents (59.5%) agree or strongly agree with the statement, indicating that they see the value in assessing risks for prioritization. However, 11.9% were Not sure, and 23.8% disagreed. The presence of both not sure and disagreeing respondents suggests that there may be a need for further clarification on how risk assessment directly contributes to prioritizing risk management efforts. The general implication is that there is room for better communication and education on this aspect of risk management.

On the third statement, a majority (64.2%) agrees with the statement, 11.9% were not sure, and 23.8% disagreed. The relatively low percentage of strong agreement (4.7%) indicates that some respondents may have reservations about the effectiveness of reviewing historical data and trends. The general implication is that there may be a need for more convincing evidence or examples to demonstrate the value of this practice, especially to those who are not sure or disagreeing.

On the fourth statement, the majority (63.9%) agrees or strongly agrees with the statement, highlighting the importance of teamwork. However, 11.9% were not sure, and 23.8% disagreed. The presence of both not sure and disagreeing respondents suggests that there may be challenges or skepticism regarding the effectiveness of cross-functional teamwork in risk identification. The general implication is that efforts should be made to address these concerns and demonstrate the benefits of collaboration.

In this case of the fifth statement, 35.7% of respondents agree, 23.8% strongly agree, 11.9% are Not sure, and 23.8% disagree. The combined percentage of agreement (35.7% + 23.8%) is 59.5%, indicating that a majority of respondents believe that effective risk identification in logistics significantly enhances the efficiency and reliability of supply chain operations. The presence of "undecided" responses (11.9%) suggests that some respondents may not have a clear stance on this statement, possibly due to a lack of information or understanding. However, it's noteworthy that 23.8% of respondents disagree with the statement. This implies that there is a

subset of respondents who do not see a strong link between risk identification and supply chain efficiency and reliability.

In summary, the general implication across all statements is that there is a need for improved communication, education, and potentially providing practical examples or evidence to address the concerns of those who are undecided or disagreeing with the statements. While there is overall support for risk identification practices, understanding and buy-in from all stakeholders are essential for effective risk management within the supply chain at Joint Medical Stores.

Qualitatively

During the interviews conducted with the respondents regarding the impact of risk identification on supply chain operations at Joint Medical Stores, several insights were gathered:

Respondents generally agreed that identifying potential risks in logistics significantly impacts recognizing vulnerabilities in the supply chain at Joint Medical Stores. They mentioned that this practice helps the organization to proactively identify weak points and potential disruptions in the supply chain. Some noted that it allows for early intervention and preventive measures to be taken, which contributes to smoother operations and better preparedness for contingencies.

The respondents expressed that assessing the likelihood and potential impact of risks plays a vital role in prioritizing risk management efforts. They highlighted that by quantifying risks, it becomes easier to allocate resources and prioritize actions effectively. They noted that this approach helps the organization focus on high-impact risks, ensuring that resources are channeled to where they are most needed, thus enhancing the overall resilience of the supply chain.

Interviewees emphasized the importance of regularly reviewing historical data and industry trends. They mentioned that these practices provide valuable insights into emerging risks. By studying past incidents and industry developments, they can anticipate potential challenges and adapt their strategies accordingly. This helps in proactive risk management and decision-making, ensuring the organization remains agile in a dynamic environment.

Respondents stressed the significance of cross-functional collaboration in risk identification. They explained that involving experts from different departments and backgrounds fosters a holistic view of risks. Team members with diverse perspectives can identify risks that might be overlooked when approached in isolation. Collaborative discussions encourage the sharing of knowledge and experiences, leading to a more comprehensive understanding of potential threats in the supply chain.

Respondents elaborated on the practical aspects of collaborative discussions. They mentioned that these discussions enable brainstorming and the exchange of ideas, which often leads to the identification of risks from various angles. Additionally, team members can challenge assumptions and validate risk assessments. Overall, collaborative discussions ensure a more thorough and accurate risk identification process, ultimately contributing to better risk management in the supply chain.

In summary, the qualitative responses from the interviewees underscored the importance of risk identification practices and collaborative efforts in supply chain operations at Joint Medical Stores. They highlighted the benefits of these practices in proactively addressing vulnerabilities, prioritizing risk management efforts, and staying ahead of emerging risks in an ever-changing environment. These insights emphasize the value of a holistic and proactive approach to risk management in the context of supply chain operations.

4.2.2 The role of risk mitigation and control in logistics on supply chain operations at Joint Medical Stores

The second study objective was to determine the role of risk mitigation and control in logistics on supply chain operations at Joint Medical Stores. To fulfill this aim, respondents were requested to express their level of agreement with five statements using a 5-point Likert scale, ranging from "strongly agree" to "strongly disagree." The subsequent table provides an overview of the range of agreement levels, represented by the abbreviations 1 SD (Strongly Disagree), 2 D

(Disagree), 3 N (Not sure), 4 SA (Strongly Agree), 5 A (Agree), as outlined in Table 6 below. This approach was utilized to ascertain the minimum and maximum values associated with the various degrees of agreement.

Table 5: The role of risk mitigation and control in logistics on supply chain operations at Joint Medical Stores

No.	Statements	5	4	3	2	1	Total
							Freq
R1	Implementing risk mitigation strategies in logistics enhances the overall reliability of supply chain operations at Joint Medical Stores	12	15	00	10	5	42
		28.5%	35.7%	00%	23.8%	11.9%	100
R2	Regular monitoring and control of identified risks contribute to minimizing disruptions in supply chain at Joint Medical Stores	15	10	5	00	10	42
		35.7%	23.8%	11.9%	00%	23.8%	100
R3	Proactive measures taken to mitigate risks improve the efficiency of logistics processes at Joint Medical Stores	11	29	1	00	1	42
		26%	69%	2%	00%	2%	100
R4	Assigning responsibilities for risk control and monitoring ensures that potential issues are addressed promptly in supply chain at Joint Medical Stores	15	10	5	00	10	42
		35.7%	23.8%	11.9%	00%	23.8%	100
R5	The use of data analysis in risk management allows Joint Medical Stores to make informed decisions and optimize supply chain operations	15	10	5	00	10	42
		35.7%	23.8%	11.9%	00%	23.8%	100

Source: Primary source

In the first statement, the findings revealed that a significant proportion of respondents agreed (35.7%) and strongly agreed (28.5%) that implementing risk mitigation strategies enhanced supply chain reliability. 23.8% of respondents disagreed, and 11.9% were Not sure. The general implication was that a substantial portion of respondents acknowledged the positive impact of risk mitigation strategies on supply chain reliability. However, the presence of disagreeing and undecided respondents highlighted the need for further education or communication to address concerns and emphasize the benefits of risk mitigation.

In the second statement ,a majority of respondents agreed (35.7%) and strongly agreed (23.8%) that regular monitoring and control of identified risks minimized disruptions in the supply chain. 11.9% were not sure, and 23.8% disagreed. This implied that that most respondents recognized the importance of risk monitoring and control in reducing disruptions in the supply chain. However, the presence of both not sure and disagreeing respondents suggested that there may have been room for improvement in explaining how risk control directly affected disruption reduction.

A substantial majority of respondents (69%) agreed, and 26% strongly agreed that proactive risk mitigation improved logistics efficiency. 2% were not sure, and 2% disagreed. The general implication was that the majority of respondents believed that proactive risk mitigation positively impacted logistics efficiency. The low percentage of disagreeing responses indicated that there was a broad consensus on this statement.

A majority of respondents agreed (35.7%) and strongly agreed (23.8%) that assigning responsibilities for risk control ensured prompt issue resolution in the supply chain. 11.9% were undecided, and 23.8% disagreed. The general implication was that many respondents perceived the importance of assigning responsibilities for risk control in ensuring timely issue resolution. However, the presence of undecided and disagreeing respondents suggested a need for further clarification or education on this topic.

A majority of respondents agreed (35.7%) and strongly agreed (23.8%) that data analysis in risk management facilitated informed decision-making and supply chain optimization. 11.9% were not sure, and 23.8% disagreed. The general implication was that most respondents recognized the

value of data analysis in risk management. However, the presence of not sure and disagreeing respondents suggested a need for better communication and demonstration of how data analysis directly contributed to informed decision-making and optimization.

In summary, the general implications in past tense for these statements highlighted the importance of effective communication and education to address the concerns of those who were undecided or disagreed. While there was general agreement on the positive impact of risk mitigation, control, and proactive measures on supply chain operations, there was an opportunity to provide more clarity and evidence to ensure broad understanding and support within Joint Medical Stores.

Qualitatively

Regarding the role of risk mitigation and control in logistics on supply chain operations at Joint Medical Stores, the responses from the interviews provided valuable insights:

Interviewees mentioned that implementing risk mitigation strategies has played a crucial role in improving the overall reliability of supply chain operations. They highlighted that these strategies involve proactive measures to identify potential risks and put in place preventive measures. This has resulted in a reduced likelihood of disruptions, ensuring that the supply chain operates smoothly and consistently. Moreover, they emphasized that having well-defined risk mitigation plans and processes instills confidence among stakeholders and enhances the organization's reputation for reliability.

Respondents emphasized the importance of regular monitoring and control of identified risks in minimizing disruptions. They explained that ongoing vigilance allows for the early detection of risk triggers and the swift implementation of mitigation measures when necessary. This proactive approach has been instrumental in reducing disruptions and ensuring the continuity of supply chain operations. By addressing risks promptly, the organization can maintain a high level of service reliability and customer satisfaction.

Interviewees discussed various proactive measures taken to mitigate risks that have positively impacted the efficiency of logistics processes. These measures include process optimization,

redundancy planning, and supplier diversification. By identifying and addressing potential risks in advance, the organization can streamline its operations, reduce downtime, and ensure timely deliveries. This not only improves efficiency but also contributes to cost savings and customer service excellence.

Respondents emphasized that assigning responsibilities for risk control and monitoring plays a critical role in ensuring prompt issue resolution within the supply chain. By clearly defining roles and accountabilities, the organization ensures that specific individuals or teams are responsible for identifying, assessing, and mitigating risks. This accountability ensures that potential issues are not overlooked and are addressed promptly, reducing the impact of disruptions and maintaining the smooth flow of supply chain operations.

Interviewees stressed the significance of data analysis in risk management. They explained that data analysis provides valuable insights into the probability and impact of risks. This data-driven approach enables informed decision-making regarding risk prioritization, resource allocation, and mitigation strategies. By leveraging data analysis, Joint Medical Stores can optimize its supply chain operations, reduce costs, and enhance overall performance.

In summary, the qualitative responses highlighted the critical role of risk mitigation and control in improving the reliability, efficiency, and responsiveness of supply chain operations at Joint Medical Stores. Interviewees emphasized the importance of proactive measures, clear responsibilities, and data-driven decision-making in achieving these objectives. These insights underscore the value of a comprehensive risk management approach in the context of supply chain operations.

4.2.3 The relationship between risk assessment and analysis in logistics on supply chain operations at Joint Medical Stores

The primary focus of the third study objective was to illuminate the relationship between risk assessment and analysis in logistics on supply chain operations at Joint Medical Stores. To attain this goal, respondents were requested to indicate their level of agreement with five statements, utilizing a 5-point Likert scale, ranging from "strongly agree" to "strongly disagree." The subsequent table presents a concise representation of the range of agreement levels, represented

by the abbreviations 1 SD (Strongly Disagree), 2 D (Disagree), 3 N (Not sure), 4 SA (Agree), 5 A (Agree), as outlined in Table 7 below. This structure was employed to define the minimum and maximum values encapsulating the diverse degrees of agreement.

Table 6: The relationship between risk assessment and analysis in logistics on supply chain operations at Joint Medical Stores

No.	Statements	5	4	3	2	1	Total
							Freq
Q1	Conducting regular risk assessments is essential for identifying potential vulnerabilities in supply chain operations	11	29	1	00	1	42
		26%	69	2%	00%	2%	100
Q2	Analyzing identified risks helps Joint Medical Stores prioritize allocate resources effectively in our logistics processes	17	13	00	5	5	42
		40.4%	30.9%	00%	11.9%	11.9%	100
Q3	The insights gained from risk assessment , analysis contribute to better decision-making in supply chain management	15	19	4	00	4	42
		35.7%	45%	9.5%	00%	9.5%	100
Q4	Implementing risk mitigation strategies based on thorough analysis enhances the resilience of supply chain at Joint Medical Stores	17	13	00	5	5	42
		40.4%	30.9%	00%	11.9%	11.9%	100
Q5	The relationship between risk assessment and analysis is critical	19	15	4	00	4	42

	in preventing disruptions with maintaining a smooth supply chain	45%	35.7%	9.5%	00%	9.5%	100
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Source: Primary source

A significant majority of respondents agreed (69%) and 26% strongly agreed that conducting regular risk assessments is essential for identifying potential vulnerabilities in supply chain operations. Only 2% were Not sure, and 2% disagreed. The general implication is that there is a strong consensus among respondents that regular risk assessments are crucial for identifying vulnerabilities within the supply chain. The low percentage of undecided and disagreeing responses indicates broad agreement on the importance of this practice.

A substantial portion of respondents agreed (40.4%) and 30.9% strongly agreed that analyzing identified risks helps prioritize and allocate resources effectively in logistics processes. 11.9% were not sure and 11.9% disagreed. The general implication is that many respondents recognize the value of risk analysis in resource allocation and prioritization within logistics processes. However, the presence of both undecided and disagreeing respondents suggests that there is room for improvement in communicating how risk analysis directly impacts resource allocation.

A majority of respondents agreed (45%) and 35.7% strongly agreed that insights gained from risk assessment and analysis contribute to better decision-making in supply chain management. 9.5% were not sure, and 9.5% disagreed. The general implication is that most respondents believe that risk assessment and analysis positively influence decision-making in supply chain management. The relatively low percentage of disagreeing and undecided responses suggests broad consensus on this statement.

A significant portion of respondents agreed (40.4%) and 30.9% strongly agreed that implementing risk mitigation strategies based on thorough analysis enhances supply chain resilience. 11.9% were not sure, and 11.9% disagreed. The general implication is that many respondents perceive the value of implementing risk mitigation strategies driven by analysis in enhancing supply chain resilience. The presence of not sure and disagreeing respondents suggests a need for further education or communication on this topic.

A majority of respondents agreed (45%) and 35.7% strongly agreed that the relationship between risk assessment and analysis is critical in preventing disruptions and maintaining a smooth supply chain. 9.5% were not sure, and 9.5% disagreed. The general implication is that most respondents understand the critical role of the relationship between risk assessment and analysis in preventing disruptions and ensuring a smooth supply chain. The relatively low percentage of disagreeing and undecided responses indicates a shared belief in this relationship.

In summary, the general implications from the past tense analysis indicate broad agreement among respondents regarding the importance of risk assessment and analysis in logistics for supply chain operations at Joint Medical Stores. While there are some not sure and disagreeing responses, they represent a minority, and the overall consensus is that risk assessment and analysis play a significant role in identifying vulnerabilities, resource allocation, decision-making, resilience enhancement, and disruption prevention within the supply chain.

Qualitatively

In the context of understanding the relationship between risk assessment and analysis in logistics on supply chain operations at Joint Medical Stores, the interview responses provided valuable insights:

Respondents emphasized that conducting regular risk assessments is instrumental in identifying potential vulnerabilities within the supply chain. They explained that these assessments involve a systematic review of various aspects of the supply chain, helping in the identification of weak points and potential vulnerabilities. By proactively recognizing these vulnerabilities, the organization can take preventive measures to address them, thus reducing the likelihood of disruptions and maintaining the smooth flow of operations.

Interviewees highlighted the importance of analyzing identified risks in resource allocation and prioritization. They explained that by assessing the likelihood and potential impact of risks, the organization can make informed decisions about where to allocate resources. This data-driven approach ensures that resources are directed toward addressing high-impact risks, thereby optimizing the allocation of time, budget, and personnel within logistics processes.

Respondents shared that the insights gained from risk assessment and analysis significantly contribute to better decision-making in supply chain management. They elaborated on how data and analysis provide a clear understanding of the risks involved. This knowledge empowers decision-makers to make informed choices about risk prioritization, mitigation strategies, and resource allocation. Ultimately, this data-driven decision-making enhances the organization's ability to navigate uncertainties and make strategic choices that positively impact supply chain management.

Interviewees stressed that implementing risk mitigation strategies based on thorough analysis has strengthened the resilience of the supply chain. They explained that this approach involves identifying risks and analyzing them in-depth to develop effective mitigation strategies. By addressing potential vulnerabilities and weaknesses proactively, the organization becomes better equipped to withstand disruptions. This enhanced resilience ensures that the supply chain remains agile and adaptable even in the face of unexpected challenges.

Respondents unanimously agreed that the relationship between risk assessment and analysis is critical in preventing disruptions and ensuring a smooth supply chain. They emphasized that risk assessment provides the foundation by identifying potential risks, while analysis helps quantify these risks and assess their impact. By linking these two processes, the organization can proactively address vulnerabilities, prioritize actions, and prevent disruptions. This approach contributes to the consistent and reliable operation of the supply chain.

In summary, the qualitative responses highlighted the essential role of risk assessment and analysis in identifying vulnerabilities, optimizing resource allocation, enhancing decision-making, strengthening resilience, and preventing disruptions within the supply chain at Joint Medical Stores. These insights underscore the interdependence of risk assessment and analysis in achieving effective risk management and maintaining a resilient and efficient supply chain.

CHAPTER FIVE

SUMMARY DISCUSSION OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

5.0 Introduction

This chapter presents the summary of findings, conclusions and recommendations. The summary and recommendations are packaged according to the research objectives.

5.1 Summary discussion of findings

5.1.1 The contribution of risk identification in logistics on supply chain operations at Joint Medical Stores

The findings indicate that a majority of respondents (64.9%) have a positive perception of risk identification in logistics. This aligns with the literature on risk management, particularly in supply chain operations (Zheng et al., 2015). However, the presence of 11.9% of undecided and 23.8% of disagreeing respondents suggests that there may be a lack of understanding or concerns regarding the effectiveness of risk identification. This emphasizes the importance of effective communication and education in risk management (Carvalho & Rabechini Junior, 2015; Ryan et al., 2013).

The majority of respondents (59.5%) acknowledge the value of assessing risks for prioritization, which is consistent with the literature (Chopra & Meindl, 2007; Tummala & Schoenherr, 2011). However, the presence of undecided (11.9%) and disagreeing (23.8%) respondents suggests a need for clearer explanations or examples of how risk assessment directly contributes to prioritizing risk management efforts. This highlights the importance of practical guidance in risk assessment and management (Ritchie, 2007).

While a majority (64.2%) sees the value in reviewing historical data and trends for risk identification, the relatively low percentage of strong agreement (4.7%) suggests reservations among some respondents. This aligns with the literature's emphasis on the need for convincing evidence or examples when implementing risk management practices (Kwabena, 2005; Chopra

& Meindl, 2007). It also underscores the importance of demonstrating the practical benefits of historical data analysis.

The findings indicate that teamwork is considered important by the majority (63.9%) of respondents, aligning with the literature on collaboration in risk management (Bowen et al., 2001; Talluri et al., 2013). However, the presence of undecided (11.9%) and disagreeing (23.8%) respondents suggests that there may be challenges or skepticism regarding the effectiveness of cross-functional teamwork in risk identification. This highlights the need for addressing concerns and showcasing the benefits of collaborative efforts (Christopher, 2004).

Regarding the statement that effective risk identification enhances the efficiency and reliability of supply chain operations, 59.5% of respondents agree or strongly agree, while 23.8% disagree. This finding aligns with the literature on risk management's positive impact on supply chain performance (Chopra & Meindl, 2003; Ritchie, 2007). However, the presence of disagreeing (23.8%) and undecided (11.9%) respondents suggests that some may not fully understand or believe in this connection. This underscores the need for clearer communication and potentially sharing real-world examples of risk identification's positive effects on supply chain efficiency and reliability.

5.1.2 The role of risk mitigation and control in logistics on supply chain operations at Joint Medical Stores

In the first statement, the findings indicated that a significant proportion of respondents (64.2%) agreed or strongly agreed that implementing risk mitigation strategies enhanced supply chain reliability. This aligns with literature highlighting the importance of risk mitigation in supply chain management (Chopra & Meindl, 2003; Ritchie, 2007). However, the presence of disagreeing (23.8%) and undecided (11.9%) respondents suggested the need for further education or communication to address concerns and emphasize the benefits of risk mitigation (Carvalho & Rabechini Junior, 2015).

Regarding the second statement, a majority of respondents (59.5%) recognized the importance of regular monitoring and control of identified risks in minimizing disruptions in the supply chain. This aligns with literature emphasizing the role of risk control in reducing disruptions

(Christopher, 2004; Talluri et al., 2013). However, the presence of both undecided (11.9%) and disagreeing (23.8%) respondents suggested that there might have been room for improvement in explaining how risk control directly affected disruption reduction. This highlights the need for clearer communication.

A substantial majority of respondents (95%) agreed or strongly agreed that proactive risk mitigation improved logistics efficiency. This finding underscores the consensus in the literature regarding the positive impact of proactive risk management on efficiency (Tummala & Schoenherr, 2011; Ritchie, 2007). The low percentage of disagreeing responses indicated a broad consensus on this statement.

For the fourth statement, the majority (59.5%) recognized the importance of assigning responsibilities for risk control in ensuring timely issue resolution in the supply chain. This aligns with the literature on the significance of clear roles and responsibilities in risk management (Christopher, 2004; Talluri et al., 2013). However, the presence of undecided (11.9%) and disagreeing (23.8%) respondents suggested a need for further clarification or education on this topic. This emphasizes the importance of clear communication and guidance.

In the fifth statement, a majority of respondents (59.5%) agreed or strongly agreed that data analysis in risk management facilitated informed decision-making and supply chain optimization. This aligns with literature emphasizing the role of data analysis in informed decision-making (Chopra & Meindl, 2007; Ritchie, 2007). However, the presence of undecided (11.9%) and disagreeing (23.8%) respondents suggested a need for better communication and demonstration of how data analysis directly contributed to informed decision-making and optimization.

5.1.3 The relationship between risk assessment and analysis in logistics on supply chain operations at Joint Medical Stores

A significant majority of respondents (95%) agreed or strongly agreed that conducting regular risk assessments is essential for identifying potential vulnerabilities in supply chain operations. This aligns with the literature emphasizing the importance of regular risk assessments in supply

chain risk management (Tummala & Schoenherr, 2011; Ritchie, 2007). The low percentage of undecided and disagreeing responses indicates a strong consensus on the necessity of this practice.

Regarding the second statement, a substantial portion of respondents (71.3%) recognized the value of risk analysis in resource allocation and prioritization within logistics processes. However, the presence of both undecided (11.9%) and disagreeing (11.9%) respondents suggests a need for further clarification or education on how risk analysis directly impacts resource allocation. This highlights the importance of explaining the link between risk analysis and resource optimization in supply chain management (Chopra & Meindl, 2007; Ritchie, 2007).

A majority of respondents (80.7%) agreed or strongly agreed that insights gained from risk assessment and analysis contribute to better decision-making in supply chain management. This aligns with literature emphasizing the role of data-driven decision-making in supply chain operations (Chopra & Meindl, 2007; Carvalho & Rabechini Junior, 2015). The relatively low percentage of disagreeing and undecided responses suggests broad consensus on this statement.

A substantial portion of respondents (71.3%) agreed or strongly agreed that implementing risk mitigation strategies based on thorough analysis enhances supply chain resilience. However, the presence of undecided (11.9%) and disagreeing (11.9%) respondents suggests a need for further education or communication on this topic. This emphasizes the importance of demonstrating how risk analysis informs resilience-building strategies (Chopra & Meindl, 2003; Talluri et al., 2013).

Majority of respondents (80.7%) agreed or strongly agreed that the relationship between risk assessment and analysis is critical in preventing disruptions and maintaining a smooth supply chain. This aligns with the literature highlighting the role of risk assessment in disruption prevention (Christopher, 2004; Talluri et al., 2013). The relatively low percentage of disagreeing and undecided responses indicates a shared belief in this relationship.

5.2 Conclusions

5.2.1 The contribution of risk identification in logistics on supply chain operations at Joint Medical Stores

The findings resonate with existing literature on risk management and supply chain operations. They highlight the importance of effective communication, education, and practical demonstrations to address the concerns and uncertainties of respondents who are undecided or disagreeing with certain statements. Overall, the study underscores the significance of achieving a shared understanding and commitment to risk management practices within the supply chain at Joint Medical Stores, ultimately contributing to its efficiency and resilience.

5.2.2 The role of risk mitigation and control in logistics on supply chain operations at Joint Medical Stores

The findings highlight the importance of effective communication and education to address the concerns of those who were undecided or disagreed. While there was general agreement on the positive impact of risk mitigation, control, and proactive measures on supply chain operations, there was an opportunity to provide more clarity and evidence to ensure broad understanding and support within Joint Medical Stores. The study underscores the need for comprehensive risk management practices and clear communication of their benefits in supply chain operations.

5.2.3 The relationship between risk assessment and analysis in logistics on supply chain operations at Joint Medical Stores

The findings highlight the importance of risk assessment and analysis in supply chain operations, with a strong consensus among respondents regarding their significance. While there are some undecided and disagreeing responses, they represent a minority, and the overall consensus is that risk assessment and analysis play crucial roles in identifying vulnerabilities, resource allocation, decision-making, resilience enhancement, and disruption prevention within the supply chain. This underscores the importance of continued emphasis on these practices within Joint Medical Stores for effective supply chain management.

5.3 Recommendation

Based on the findings of each objective, here are the recommendations for each:

5.3.1 The contribution of risk identification in logistics on supply chain operations at Joint Medical Stores

Enhanced Training and Awareness Programs: Joint Medical Stores should implement comprehensive training programs on risk identification and its impact on supply chain operations. These programs should target both staff directly involved in logistics and other relevant stakeholders. The training should include practical demonstrations and real-life case studies to illustrate the importance of risk identification effectively.

Regular Communication and Feedback Mechanisms; Establish regular communication channels to gather feedback and concerns from employees regarding risk identification. Encourage an open dialogue to address any doubts or reservations. This feedback loop will help in refining risk identification practices and ensuring that all staff members are aligned with the organization's risk management goals.

5.3.2 The role of risk mitigation and control in logistics on supply chain operations at Joint Medical Stores

Comprehensive Documentation; Joint Medical Stores should develop comprehensive documentation that outlines the role of risk mitigation and control in logistics. This documentation should include real-world examples and case studies demonstrating how risk management practices have positively impacted supply chain operations. This resource can serve as an educational tool for staff at all levels.

Regular Workshops and Knowledge Sharing: Organize regular workshops and knowledge-sharing sessions to discuss the practical aspects of risk mitigation and control within the organization. Encourage cross-functional teams to share their experiences and success stories related to risk management. This collaborative approach can help build a culture of risk-awareness and continuous improvement.

5.3.3 The relationship between risk assessment and analysis in logistics on supply chain operations at Joint Medical Stores

Integrated Risk Assessment and Analysis Framework: Joint Medical Stores should develop an integrated framework that clearly illustrates how risk assessment and analysis are interconnected and contribute to supply chain operations. This framework should be widely communicated and shared across the organization to ensure a common understanding of their roles and importance.

Regular Training on Risk Analysis: Offer regular training sessions specifically focused on risk analysis techniques and their practical application in supply chain management. These sessions can empower employees with the skills needed to conduct effective risk analysis, ultimately improving decision-making and resilience within the supply chain.

These recommendations emphasize the importance of education, communication, and practical demonstrations to foster a culture of risk awareness and effective risk management within Joint Medical Stores. And through addressing the concerns of those who may be undecided or disagreeing with certain risk management practices, the organization can achieve greater alignment and commitment to these crucial processes, ultimately enhancing supply chain efficiency and resilience.

5.4 Suggestions for Further Research

Further Investigation of Risk Communication: Explore the effectiveness of different communication strategies in conveying the significance of risk management practices within healthcare supply chains, addressing the concerns of undecided and disagreeing stakeholders.

Enhanced Training Impact: Evaluate the long-term impact of comprehensive risk management training programs on supply chain efficiency and resilience, considering the evolution of risk perception among employees at Joint Medical Stores.

References

- Abdullah S., Al-Mudimigh, Mohamed Z., Abdel M., Ahmed M., (2004) „Extending the concept of supply chain: The effective management of value chains“ International journal of Production Economics, Volume 87, Issue
- Allayannis, G., G. W. Brown, and L. F. Klapper, 2001, Exchange Rate Risk Management: Evidence from East Asia. University of Virginia Working Paper.
- Ariane, C., Yves, C., Georges, H. & Jean, P. P. (2004), Basel II and Operational risk: Implications for Risk measurement and management in the financial sector.
- Ariane, C., Yves, C., Georges, H. & Jean, P. P. (2004). Basel II and Operational risk: Implications for Risk measurement and management in the financial sector.
- Besner, C., & Hobbs, B. (2012). The paradox of risk management; a project management practice perspective. International journal of managing projects in business, 5(2), 230-247.
- Bikker J.A and Metzmakers P.A.J. (2005), “Bank Provisioning Behaviour and Procyclicality”, Journal of International Financial Markets, Institutions and Money, 15(2), 141-157
- Bikker, J.A., & Metzmakers, P.A.J. (2005). "Bank Provisioning Behaviour and Procyclicality." Journal of International Financial Markets, Institutions and Money, 15(2), 141-157.
- Bowen, F.E., Cousins, P.D., Lamming, R.C., & Faruk, A.C. (2001). The role of supply management capabilities in green supply. Production and Operations Management, 10(2), 174-189.
- Carvalho, M. M. D., & Rabechini Junior, R. (2015). Impact of risk management on project performance: the importance of soft skills. International Journal of Production Research, 53(2), 321-340.
- Chapelle, K. and Plane, P. (2005), Productive efficiency in the Ivorian manufacturing sector: An exploratory study using data envelopment analysis approach. Dev. Econ., 43(4), 450-471.
- Chopra, S. & Meindl P. (2003), Supply Chain Management: Strategy, Planning and Operations, 2nd ed. Prentice Hall, Upper Saddle River, New Jersey.
- Chopra, S. & Meindl, P. (2007). Supply Chain Management: Strategy, Planning, and Operation. New Jersey: Pearson Education, Inc.
- Christopher, M. & Lee, H. (2004). "Mitigating supply chain risk through improved Confidence." International Journal of Physical Distribution & Logistics Management, 34(5), 388-396.
- Christopher, M. (2005). Logistics & Supply Chain Management: Creating Value-Adding Networks, 3rd ed. Pearson Education, Harlow.

Jorion, P. (2009). Risk Management Lessons from the Credit Crisis. Pacific Alternative Asset Management Co. (PAAMCO).

Kakuru J. (2004), Managing the Operations Function of the Firm, concepts challenges and responses. 1st Edition, the business-publishing group, Kampala Krejcie, R.V and Morgan D.W (1986).

Kakuru, J. (2004). Managing the Operations Function of the Firm: Concepts, Challenges, and Responses (1st ed.). The Business-Publishing Group.

Kwabena A. (2005). Basel II Operational Risk. Issues involved for West African Banks. The Ghanaian Banker

Kwabena, A. (2005). Basel II Operational Risk: Issues Involved for West African Banks. The Ghanaian Banker.

Kwabena, A. K. (2005). "Assessing Risks in Manufacturing Firms." Risk Analysis, 25(5), 1053-1065.

Niringiye A., Luvanda, E. & Shitundu J. (2010), Firm Size and Technical Efficiency in East African Manufacturing Firms Current Research Journal of Economic Theory 2(2), 69-75.

Niringiye, A., Luvanda, E., & Shitundu, J. (2010). Firm Size and Technical Efficiency in East African Manufacturing Firms. Current Research Journal of Economic Theory, 2(2), 69-75.

Payle, D. (1997). "Bank Risk Management." Working Paper No. 272, University of California.

Ritchie (2007), "Supply chain Risk management and performance 303 International", Journal of Operations & Production Management, 27 (3), 303-32.

Ritchie, B. (2007). "Supply chain Risk management and performance." International Journal of Operations & Production Management, 27(3), 303-323.

Roger, W. & Boudewijn, B. B. D. (2006). Quality and risk management: what are the key issues. The TQM Magazine, 18 (1).

Ryan, P. B., Stang, P. E., Overhage, J. M., Suchard, M. A., Hartzema, A. G., DuMouchel, W., & Madigan, D. (2013). A comparison of the empirical performance of methods for a risk identification system. Drug safety, 36(1), 143-158.

Srinivasan, R.S. and Jeffrey, D.T. (2017), "Supply chain immune system: concept, framework, and applications", International Journal of Logistics Research and Applications, Vol. 20 No. 6, pp. 515-531

Talluri, S., Kull, T.J., Yildiz, H. and Yoon, J. (2013), "Assessing the efficiency of risk mitigation strategies in supply chains", Journal of Business Logistics, Vol. 34 No. 4, pp. 253-269.

Tummala, R. and Schoenherr, T. (2011), "Assessing and managing risks using the supply chain risk management process (SCRMP)", *Supply Chain Management: An International Journal*, Vol. 16 No. 6, pp. 474-483.

Ukandu C. (2007), Risk management and organizational profitability *Journal of Research in National Development JORIND* 5 (2), 16-16.

Ukandu, N. (2007). "Risk Management for Supply Chain Networks: A Case Study." *The International Journal of Advanced Manufacturing Technology*, 32(5-6), 521-529.

Zheng, T., Yildiz, H., & Talluri, S. (2015). Supply chain risk management: a literature review. *International Journal of Production Research*, 53(16), 5031-5069.

APPENDIX: A

Questionnaire to the procurement staff and the quality assurance staff at Joint Medical Stores Head Quarters, Nsambya

TOPIC: Risk management strategies in logistics and supply chain operations

Dear Sir/ Madam,

I **Namwase Betty Elizabeth**, A student of Uganda Christian University pursuing a Degree in Procurement and logistics management. Here by extend my questionnaire to you seeking information concerning a degree of procurement and logistics management. You are kindly requested to answer these questions by filling in the gaps and ticking the most appropriate alternatives and your response is highly appreciated.

SECTION A: Demographic Information

Instruction: Please tick or mark where applicable.

1. Gender of respondents?

a) Male ☐

b) Female ☐

2. Age of respondent

1. 18 –30 ☐

2. 31-40 ☐

3. 41-50 ☐

4. Over 50 ☐

3. What is your level of education?

a) O' level ☐

b) A' level ☐

c) Certificate/Diploma ☐

d) Degree ☐

e) Postgraduate ☐

f) Others ☐

SECTION B

KEY

SD	D	N	A	SA
Strongly disagree	Disagree	Not sure	Agree	Strongly agree
1	2	3	4	5

Part A: The contribution of risk identification in logistics on supply chain operations at Joint Medical Stores

	STATEMENT	SD	D	N	A	SA
No	Response	1	2	3	4	5
1.	The identification of potential risks in logistics helps to recognize vulnerabilities in supply chain operations at Joint Medical Stores					
2.	Assessing the likelihood potential impact of risks assists in prioritizing risk management efforts in supply chain at Joint Medical Stores					
3.	Regularly reviewing historical data with industry trends aids in identifying emerging risks that could affect supply chain at Joint Medical Stores					
4.	Collaborative discussions among cross-functional teams contribute to the comprehensive identification of risks in supply chain at Joint Medical Stores					
5.	Effective risk identification in logistics significantly enhances the efficiency with reliability of supply chain operations at Joint Medical Stores					

Part B: The role of risk mitigation and control in logistics on supply chain operations at Joint Medical Stores

	STATEMENT	SD	D	N	SA	A
No	Response	1	2	3	4	5
1.	Implementing risk mitigation strategies in logistics enhances the overall reliability of supply chain operations at Joint Medical Stores					
2.	Regular monitoring and control of identified risks contribute to minimizing disruptions in supply chain at Joint Medical Stores					
3.	Proactive measures taken to mitigate risks improve the efficiency of logistics processes at Joint Medical Stores					
4.	Assigning responsibilities for risk control and monitoring ensures that potential issues are addressed promptly in supply chain at Joint Medical Stores					
5.	The use of data analysis in risk management allows Joint Medical Stores to make informed decisions and optimize supply chain operations					

Part B: The relationship between risk assessment and analysis in logistics on supply chain operations at Joint Medical Stores

	STATEMENT	SD	D	N	A	SA
No	Response	1	2	3	4	5
1.	Conducting regular risk assessments is essential for identifying potential vulnerabilities in supply chain operations					
2.	Analyzing identified risks helps Joint Medical Stores prioritize and allocate resources effectively in our logistics processes					
3.	The insights gained from risk assessment and analysis contribute to better decision-making in supply chain management					
4.	Implementing risk mitigation strategies based on thorough analysis enhances the resilience of supply chain at Joint Medical Stores					
5.	The relationship between risk assessment and analysis is critical in preventing disruptions and maintaining a smooth supply chain					

Thanks for your corporation
END

APPENDIX: B

Interview guide questions to the Quality assurance staff of Joint Medical Stores Head Quarters, Nsambya

Objective 1: The contribution of risk identification in logistics on supply chain operations at Joint Medical Stores

1. Do you perceive the impact of identifying potential risks in logistics on recognizing vulnerabilities in supply chain operations at Joint Medical Stores?
2. How does assessing the likelihood and potential impact of risks assist in prioritizing risk management efforts in the supply chain at Joint Medical Stores?
3. How have regularly reviewing historical data and industry trends aided in identifying emerging risks that could affect the supply chain at Joint Medical Stores?
4. How can collaborative discussions among cross-functional teams contributed to the comprehensive identification of risks in the supply chain at Joint Medical Stores?
5. How do these collaborative discussions among cross-functional teams contribute to the comprehensive identification of risks in the supply chain at Joint Medical Stores?

Objective 2:: The role of risk mitigation and control in logistics on supply chain operations at Joint Medical Stores

1. How has implementing risk mitigation strategies in logistics enhanced the overall reliability of supply chain operations at Joint Medical Stores?
2. Does regular monitoring and control of identified risks contribute to minimizing disruptions in the supply chain at Joint Medical Stores?
3. What proactive measures taken to mitigate risks have led to an improvement in the efficiency of logistics processes at Joint Medical Stores?
4. How does assigning responsibilities for risk control and monitoring ensure that potential issues are addressed promptly in the supply chain at Joint Medical Stores?
5. How the use of data analysis in risk management allows Joint Medical Stores to make informed decisions and optimize supply chain operations?

Objective 3: The relationship between risk assessment and analysis in logistics on supply chain operations at Joint Medical Stores

1. How does conducting regular risk assessments contribute to identifying potential vulnerabilities in supply chain operations at Joint Medical Stores?

2. Does analyzing identified risks of help to Joint Medical Stores in prioritizing and allocating resources effectively in logistics processes?
3. How have the insights gained from risk assessment and analysis contributed to better decision-making in supply chain management at Joint Medical Stores?
4. How implementing risk mitigation strategies based on thorough analysis has enhanced the resilience of the supply chain at Joint Medical Stores?
5. Is the relationship between risk assessment and analysis critical in preventing disruptions and maintaining a smooth supply chain at Joint Medical Stores?



SCHOOL OF BUSINESS

1st Aug 2023

TO WHOM IT MAY CONCERN

Name: NAMWASE BETTY ELIZABETH

Reg. No. J21B12/281

A bachelor's student who is seeking permission from your office to collect data for his/her dissertation titled "...RISK MANAGEMENT STRATEGIES ...IN LOGISTICS AND SUPPLY CHAIN

OPERATIONS.....

....."We shall be grateful if you could render assistance to him/her in collecting the necessary data for his/her dissertation The Uganda Christian University School of Business thanks you in advance

Mukisa Simon Peter
Research coordinator