RISK IDENTIFICATION STRATEGIES AND SUPPLY CHAIN RESILIENCE: A CASE STUDY OF SOROTI FRUITS LIMITED TEJU JUICE COMPANY

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A DISSERTATION SUBMITTED TO THE SCHOOL OF BUSINESS IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE AWARD OF A DEGREE OF BACHELOR OF PROCUREMENT AND LOGISTICS MANAGEMENT OF UGANDA CHRISTIAN UNIVERSITY

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UGANDA CHRISTIAN UNIVERSITY

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DECLARATION

I hereby declare that the contents of this report are my original work and that it has not been submitted in any other University for an award. I have also acknowledged all the referenced work that I referred to while undertaking my study.

Signature: ..... Date: 12/Feb/2025

Igulot Isaac

S20B12/249

APPROVAL

This is to certify that the research proposal entitled **"RISK IDENTIFICATION STRATEGIES AND SUPPLY CHAIN RESILIENCE- CASE STUDY OF SOROTI FRUIT LIMITED (TEJU JUICE COMPANY)"** has been produced under my supervision and has been approved for further research.

Signature: ..... Date: 18/2/2025

Mr. Kisenyi Vincent

Supervisor

DEDICATION

I dedicate this research to my lovely family, colleagues whose unwavering support, love, encouragement and sacrifices have been remarkable in motivating me. This work is a testament to your belief in me and I am grateful for your unwavering support and equally my research supervisor, whose guidance, expertise and encouragement has been instrumental and invaluable throughout this research journey. You mentored me as a researcher and I am deeply grateful for your support.

ACKNOWLEDGEMENTS

I am grateful and thankful to God for the precious gift of life, protection, knowledge and guidance that has bestowed upon me into developing this research proposal and in my pursuit of the course.

Special gratitude and thanks to my supervisor Mr. Kisenyi Vincent for his guidance, mentorship, and encouragement throughout this research journey. His expertise, knowledge and unwavering support have been invaluable in shaping this study.

In a nutshell, my gratitude goes to my parents for their enormous support and endless support offered to me throughout these studies.

ABSTRACT

Supply chain resilience is increasingly acknowledged as an essential element for organizations to effectively manage disruptions, sustain operational continuity and preserve competitive advantage. The initial step in developing a resilient supply chain is effective identification of risks. This research examines a variety of strategies for detecting risk within the supply chain, highlighting both conventional and innovative methodologies. Conventional techniques involve risk assessment, analysis of historical data and supplier evaluations. While newer strategies capitalize on data analytics, artificial intelligence and real time monitoring technologies. The research also investigates the importance of collaboration and communication in the risk identification process, emphasizing cross functional teams and external partners can enhance a more thorough risk management framework. Furthermore, it continues to discuss the link between risk identification supply and supply chain resilience suggesting that early detection of potential risks allows organizations to put in place timely mitigation strategies. Basically, the study advocates for a combined approach to risk identification that merges various strategies to ensure the supply chain's strength against a number of disruptions ranging from natural disasters to geopolitical issues and economic changes.

This study seeks to represent a comprehensive examination of contemporary risks identification methodologies with the objective of explaining how organizations can strengthen their resilience, ensure operational continuity and promote enduring sustainability amid progressively unstable conditions.

CHAPTER ONE

INTRODUCTION

1.1 Introduction

Supply chains face a number of risks which significantly disrupt operations and organizational performance in this global economy. These range from cyber threats, geopolitical tensions, natural disasters and fluctuating market demands. As a result, this necessitates the need to have risk identification strategies (Shekarian M. & Mellat Parast, M, 2020). This research tries to explore different ways of risk identification strategies, assessing their role in building resilience within supply chains. Through assessing different methodologies, this study aims to show how organizations can anticipate, prepare and respond to potential disruptions. Through this research we shall proved valuable insights that will guide practitioners in developing comprehensive risk management frameworks.

1.2 Background to the Study

The juice industry faces significant challenges that include supply chain disruptions that are caused by change in consumer preference, climate change, geopolitical tension, regulatory measures and many other externalities. As consumers become health conscious with whatever they eat, they tend to demand for fresh and natural products (Can SaglamY Yildiz Çankaya S and Sezen B, 2021).

Supply chain resilience is defined as the ability of a company to go through unexpected disruptions while ensuring continuity of operations (Jones L et al, 2019). For a juice company to be resilient it should be able to maintain brand reputation and customer trust. Risk identification strategies are fundamental in building resilience, this allows companies to know vulnerabilities in their supply chain prior to significant operational impacts (Jones L et al, 2019). Recent research shows that different risk identification techniques that include quantitative assessment, scenario analysis and qualitative modeling (Swinnen, 2021)

This study will aim to assess the risk identification strategies employed by juice companies and evaluate their effectiveness in improving the supply chain resilience. The study seeks to give practical recommendations to enable overcome uncertainties and maintain competitiveness within the market.

1.3 Problem Statement

The juice industry is vulnerable to a variety of disruptions such as pandemics, natural disasters and changing consumer preference which can hinder the supply chain operations. Many juice companies struggle to identify and manage risk within their supply chain. Inadequate risk identification can cause operational disruptions, reduction in product quality and loss of consumer trust (Shekarian M & Mellat Parast M, 2020).

As the sector struggles with perishable goods and reliance on different agricultural sources, there is need to advocate for risk management frameworks that improve resilience. Some risk identification strategies don't address the challenges faced by the juice manufactures. Without effective risk identification processes, juice companies may not be able to respond to disruptions (Rosenzweig et al., 2020).

The study aims to assess the risk identification strategies employed by juice companies and evaluate their effectiveness in improving the supply chain resilience. The study seeks to give practical recommendations to enable overcome uncertainties and maintain competitiveness within the market.

1.4 Purpose of the Study

The study aims at assessing the risk identification strategies and supply chain resilience at Soroti fruit factory.

1.4.1 Objectives of the Study

The study will comprise of the specific objectives

1. To examine the specific risks related to agricultural production, logistics, market fluctuations and regulatory compliance throughout the supply chain.

2. To evaluate the effectiveness of existing risk identification strategies implemented by juice companies, analyzing their strengths and weaknesses in addressing the unique challenges of the industry.
3. To propose a set of best practices for risk identification tailored for practitioners towards improvement of their risk management frameworks.

1.5 Research Questions

The study will have the following research questions

1. What are the specific categories and risks faced by juice companies throughout their supply chains, including those related to agricultural production, logistics, market fluctuations, and regulatory compliance?
2. What is the effectiveness of existing risk identification strategies implemented by juice companies, analyzing their strengths and weaknesses in addressing the unique challenges of the industry?
3. What are the best practices for risk identification tailored for practitioners towards improvement of their risk management frameworks?

1.6 Scope of the Study

1.6.1 Content Scope

This study focused on the risk identification strategies and supply chain resilience specific to juice companies. The further includes the following key areas:

Industry Context: The research will concentrate exclusively on the juice manufacturing sector, examining large-scale producers to understand the unique challenges and risks they face in their supply chains.

Risk Identification Strategies: The study explored a variety of risk identification methodologies utilized by juice companies, including qualitative and quantitative approaches, scenario analysis, and technology-driven solutions. It will also consider industry agricultural practices, market dynamics, and regulatory frameworks that influence supply chain management.

1.6.2 Geographical Scope:

The study was conducted at Soroti fruits limited which is located along pineapple road, Soroti business and industrial park in Soroti city.

1.6.3 Time Scope

The study was conducted for a period of five months i.e., July to November 2024.

1.7 Significance of the Study

The study has an exceptional significance to various stakeholders such as industry practitioners, policy makers and academia in improving the risk identification strategies and supply chain resilience in juice companies.

i. **Enhanced Understanding for Practitioners:** By identifying and analyzing effective risk identification strategies, the study provides TEJU Juice Company with actionable insights to improve their risk management frameworks. This oversight helps the organization in mitigating its vulnerabilities hence operational efficiency and minimizing disruptions.
ii. **Support for supply chain resilience:** The findings will equip companies to better handle uncertainties and adapt to market conditions. Agricultural fluctuations and consumer trends are key in this sector.
iii. **Guidance for policy makers:** Insights from the study can enable policy makers to develop supportive regulations and initiatives to promote the supply chain resilience.
iv. **Contribution to academia literature:** The study will elaborate more about the literature regarding risk management practices in juice industries. By providing empirical evidence and best practices, it will serve as a valuable resource for future research and educational purposes.

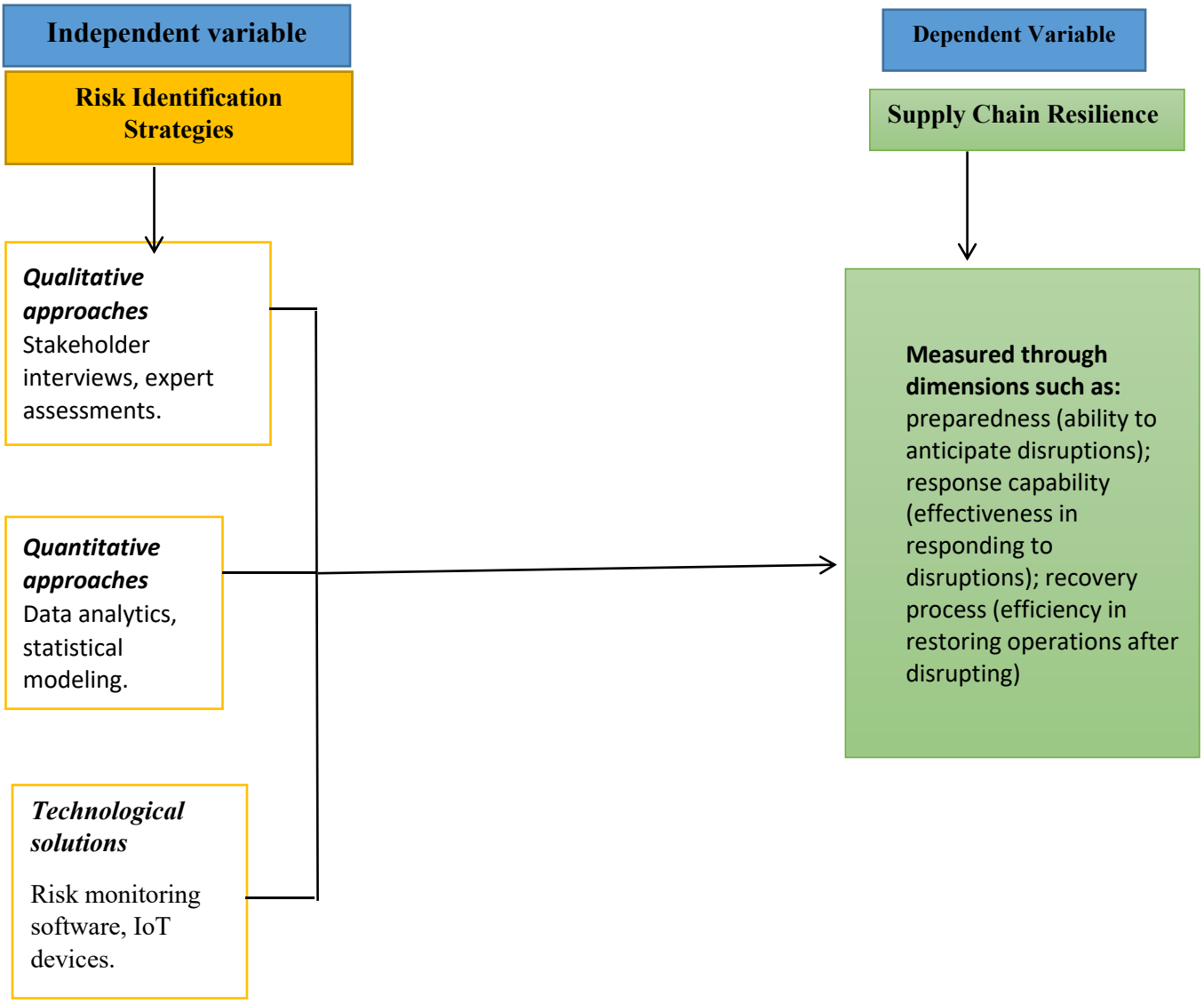
1.8 Study Justification

Identification of Unique Risks faced by juice manufacturers, including those related to agricultural supply variability, regulatory changes, and market dynamics is very

important to a sustainable and productive foods processing. It is also vital to evaluate the effectiveness of Current strategies which can be done by **a**nalyzing existing risk identification methodologies employed by Soroti fruits limited by way of assessing the levels of efficiency and adaptability in addressing the unique challenges of the industry. Lastly but more important is the fact that such food processors need best practices that are standard and uniform if continuous improvement is to be achieved. With proper recommendation from industry experts, better risk identification processes can be developed thereby enabling food processors to proactively manage potential disruptions and enhance operational resilience.

1.9 CONCEPTUAL FRAMEWORK

Figure 1: The conceptual framework



Source: self-constructed by researcher

Narrative

The conceptual framework for this study on risk identification strategies and supply chain resilience in juice companies can be visualized as an interconnected model that illustrates the relationships between key variables.

The conceptional framework provides a structured approach to showing how risk identification improves on supply chain resilience. It shows the need to understand the factors that influence risk management practices.

1.1 Defined operational terms

Risk identification strategies: It's defined as a systematic process and method used to identify risks within a supply chain. The approaches used to detect threats include quantitative methods, qualitative method and technology solutions (Rosenzweig et al, 2020).

Supply chain resilience: Refers to the ability of a company's supply chain to anticipate, prepare, respond and recover from disruptions. this is comprised of operational flexibility, responsiveness to market changes and ability to maintain continuity in production (Shekarian M & Mellat Parast M, 2020).

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

This chapter will give an insight by assessing the existing literatures that have been carried out by other researchers in relation to my research. The literature review shall be guided by the objectives and research questions to enhance knowledge relevant to my research topic.

2.1 Literature Review

2.1.1 Supply Chain Resilience

The juice industry runs business in an uncertain environment characterized by perishable goods, fluctuation in consumer demand and other external disruptions. The ability to anticipate, prepare, respond and recover from potential disruptions can be archived through essential risk identification strategy hence enhancing supply chain resilience. This literature review synthesizes research on risk identification strategies and their impact on supply chain resilience, particularly in the context of juice companies.

Below are associated risks faced by juice companies throughout their supply chain:

1 Agricultural Supply Chain Risks

The agricultural stage is critical for juice companies since the raw materials fruits, vegetables, and other ingredients are sourced directly from farms. (Swinnen, 2021), explains that Climate Change and Weather Variability is one of the risks: Extreme weather events such as droughts, floods, hurricanes, and heat waves can damage crops, leading to reduced availability and increased prices for key raw materials. (Hauggaard-Nielsen et al., 2020), also goes ahead to explain that Supply Shortages adds to the agricultural supply chain risks Due to the perishability of fruits, fluctuations in harvests, and demand surges (especially during seasons of high demand), there can be a lack of raw material supply, which may disrupt production.

Pests and Diseases: The spread of plant diseases or pests can severely impact crop yields, particularly in fruit and vegetable production, which directly affects juice production (Rosenzweig et al., 2020).

2 Sourcing and Supplier Risks

The relationships with suppliers whether they are farmers, ingredient producers, or packaging suppliers can also present several risks: That is, Supplier Reliability and Quality Control: Disruptions from suppliers in terms of delays, quality issues, or ethical concerns (e.g., labor practices, sustainability) can affect the juice company's production timelines and brand reputation (Gualtieri & Santucci, 2019). According to (Touboulic & Walker, 2021), Traceability and Transparency contributes to the sourcing and supplier risks the increasing demand for transparency around ingredient sourcing, especially for organic or sustainably sourced products, can expose companies to reputational risks if they fail to maintain sufficient traceability in their supply chains.

Global Sourcing and Geopolitical Risks: Many juice companies source ingredients globally (e.g., citrus from South America or tropical fruits from Africa), and political instability, trade tariffs, or economic sanctions can disrupt these international supply chains (Tadic & Muratti, 2021).

3 Production and Manufacturing Risks

The manufacturing phase is where the raw ingredients are turned into juice. Regulatory Compliance and Food Safety comes in first to explain the production and manufacturing risks Juice companies must adhere to food safety standards (for example, FDA regulations in the U.S. or EFSA in Europe). Companies that fail to adhere to the regulations may lead to legal liabilities, fines and product recalls (Vlahov et al, 2020).

Equipment Failure: As a result of failure/breakdown of equipment, this may cause delay in production (Li et al, 2020).

Contamination Risk: Since most of the suppliers tend not to take proper caution when harvesting, some of their produce may be contaminated with bacteria, pesticides and heavy metals. This makes the consumer to lose trust in the product since this risk threatens their health (Sivakumar et al, 2020). Most companies face a number of risks throughout their supply chains and these maybe categorized as economic, logistical, consumer related, regulatory and environmental.

Its therefore wise to mitigate these risks through strategic investment in sustainability and innovation, effective supply chain management and contingency planning.

2.1.2 Risk Identification Strategies

When trying to measure the success of risk identification strategies put in place by the company, we can analyze them based on how they address the challenges that arise through the supply chain. Most of these challenges may include regulatory compliance, sustainability, consumer demand, supply chain disruptions and climate change. As we are aware that the juice industry relies on agricultural outputs, consumer trends and logistics. Its vital to make sure that risk identification methods are integrated to consistent production. Below is an analysis of these strategies' strengths and weaknesses.

1. Supplier and Sourcing Risk Identification strategy

(Swinnen, 2021), starts by explaining supplier and sourcing risk identification strategy which involves supplier Audits and Certifications: Juice companies commonly implement audits and certifications (such as Fair Trade, Rainforest Alliance, and Organic certifications) to monitor supplier practices. This can help identify potential risks in terms of sustainability, labor issues, and food safety at the sourcing stage Third-party certification systems are widely used as they provide transparency and ensure adherence to global standards.

Secondly is Supplier Diversification many companies practice diversification of suppliers to mitigate the risks posed by reliance on a single supplier, especially in regions vulnerable to climate impacts or political instability (Chavez et al., 2020). This reduces exposure to local risks and ensures continuity in supply.

(Touboulic & Walker, 2021), however gives an insight on the supplier and sourcing risk identification strategy and its limited Visibility on small Suppliers while large companies often audit big suppliers (direct suppliers), risks associated with suppliers further down the supply chain (e.g., raw material producers) often remain unidentified. This lack of transparency increases vulnerability to disruptions such as supply shortages or contamination. In line with the above, slow response to changing regulations adds to the weakness of supplier and sourcing risk identification: Supplier risk identification strategies can be slow to adapt to evolving regulations, particularly in countries with rapidly changing agricultural laws or environmental policies. This creates compliance risks, especially with food safety standards (Gualtieri & Santucci, 2019).

2. Climate Change and Environmental Risk Identification strategy

Climate Risk Assessments explains on the strengths Climate Change and Environmental Risk Identification some juice companies are proactively integrating climate change risk assessments into their supply chain strategies. This involves using data-driven forecasting models to predict potential disruptions from adverse weather events such as droughts or hurricanes (Swinnen, 2021). Environmental organizations tend to partner with big companies in monitoring climate risks.

Sustainability of the Programs: A number of juice companies have put in place certain practices to mitigate environmental risks and these may include waste management in production, reduction in water usage and reduction in carbon emissions in transportation (Fiedler & Suri, 2020).

Climate risk forecasting remains uncertain and this is a big weakness most especially in regions where the weather patterns are uncertain. So, when companies carry out climate risk assessments, the effectiveness of these model is unpredictable due to the nature of climate (Rosenzweig et al, 2020).

Why sustainability programs are not effective: Most companies tend to put in place sustainability programs but when a comparison is made with the supply chain risk, its noted that

they don't directly address the problem. For instance, the urge to source from sustainable suppliers can be undermined by poor agricultural yields and resource scarcity (FAO, 2020).

3. Production and manufacturing risk identification strategies

Juice companies often deploy Hazard Analysis and Critical Control Points (HACCP) systems so as to identify and mitigate food safety risks throughout the production process. The system aims at detecting potential hazards such as bacteria contamination that could affect the quality of the juice (Vlahov et al, 2020).

Regular maintenance and equipment monitoring: Real time monitoring of production equipment helps identify the problem quickly hence avoid contamination and production delays (Li et al, 2020).

Not paying attention to contaminants raises red flags in the production system. As HACCP can be relied on for bacterial elimination, there are new emerging contaminants in food like micro plastics and heavy metals. The measures to manage this risk are limited (Sivakumar et al, 2020).

Vulnerabilities in Automation: Many juice production facilities are increasingly adopting automated systems to improve efficiency. When dealing with automation, it involves several new risks such as system malfunctioning and cyber-attack (Sorrell & Dimitri, 2021).

2.1.3 Best practices in risk identification

Improving risk identification in industries of juice production is very essential. Since these industries face numerous risks, essential risk identification practices allow the company to anticipate, mitigate and adopt to risk across the entire supply chain. Using recent literature from 2019 and beyond, a number of best practices for risk I dentification have been recommended to the juice industry as well as to the food and beverage sectors to improve their risk management frameworks.

1. Integrate Advanced Risk Identification Tools (Data Analytics & AI)

When using a combination of data analytics, artificial intelligence and machine language, this helps you identify risks quickly and influence your decision making.

Using data driven insights: Big companies use huge data to model scenarios, predict future disruptions and track trends. This helps in identifying certain risks associated with raw material supply, production process and consumer trends (Swinnen, 2021).

Using artificial intelligence forecasting: Analysis of various data set sources using artificial intelligence helps the company to forecast risk for example supply shortages, equipment failure and price volatility (Chavez et al, 2020). This technology helps in preparation of mitigation strategies and risk management.

2. Foster Strong Supplier Risk Management

Improving on the supplier risk identification by having diverse/mapping sizes of suppliers (i.e., small, medium and big) ensures continuous monitoring with due diligence.

Companies are urged to map all their supply chains irrespective of the size of the supply chain. This helps them know the potential risks in small suppliers. Especially for raw materials that are sourced globally such that in an event that local disruptions occur for instance labour strikes, climate change and political instability (Touboulic & Walker, 2021).

Continuous supply monitoring: Suppliers should be regularly evaluated using performance indicators that may include cost, quality, sustainability and compliance standards. This helps ensure that suppliers comply with the company standards hence enhancing supply chain and reduction in disruptions (Gualtieri & Santucci, 2019).

3. Adopt Scenario Planning and Stress Testing

Put in place scenario planning and stress testing to evaluate the effect of market shifts and different risk events on business operations.

Companies should come up with a range of scenarios based on factors like climate change impacts, economic downturns and shift in consumer preferences. These help in assessing potential risks and prepares companies for unexpected challenges (Krut & McClellan, 2021).

Stress testing: Scenario planning and stress testing tend to nature companies for future risk events hence improving on flexibility and resilience. Companies can use stress testing to prepare their work force on how to respond to certain uncertain events like sudden regulatory change, these events guide future risk mitigation efforts (Rosenzweig et al, 2020).

2.2 Conclusion

By understanding the various risks involved in the juice industry supply chain, a number of risk identification strategies can be implemented. This can be done through bringing together both qualitative and quantitative approaches to improve their preparations, response capability and recovery process. This literature review shows the need of putting together risk management practices to ensure sustainability and competitiveness.

CHAPTER THREE

RESEARCH METHODOLOGY

3.0 Introduction

This chapter gives a detailed research methodology used to analyze the risk identification strategies and their influence on the supply chain resilience in the juice companies. In this chapter we shall look at the research design, sampling methods, data collection techniques and data analysis.

3.1 Research Design

The study used an explanatory design which involved collection of qualitative data while a data analysis was also made after quantitative data was collected. This enabled the researcher to make a detailed analysis of the risk identification strategies before making a connection with the supply chain resilience.

3.2 Sample Selection

- **Population:** Workers at Teju juice company
- **Sampling Method:** The sampling method used was purposive and the targeted participants involved were operational leaders, supply chain managers and quality assurance personnel that had relevant knowledge/experience in supply chain management and risk identification.

- **Sample Size:** A total of 5-7 key informants for the qualitative phase and approximately 20 respondents for the quantitative phase.

3.3 Data Collection Methods

3.3.1 Qualitative Phase

- **Interviews:** Semi-structured interviews were conducted with key stakeholders in the juice companies. The interviews focused on:
    - Identification of risks in the supply chain.
    - Assessing the current risk identification strategies.

- Look into best practices to be put in place and difficulties faced in implementing the strategies.

- **Focus Groups:** A total of 2-3 focus group discussions were carried out involving a number of industry experts and stakeholders to collect different perspectives on risk management practices.

3.3.2 Quantitative Phase

- **Survey:** A structured questionnaire was developed based on findings from the qualitative phase and existing literature. The survey included:
  - Demographic information
  - Assessment of risk identification strategies.
  - Measurement of supply chain resilience (utilizing established resilience metrics)
- The survey was distributed to participants from the same population, aiming for a response rate of at least 70%.

3.4. Data Analysis

3.4.1 Qualitative Analysis

- **Thematic Analysis:** This involved collecting data from focus groups that was transcribed and interviews which were analyzed using a thematic analysis to come up with patterns related to risk identification strategies and supply chain resilience.

3.4.2 Quantitative Analysis

- **Statistical Analysis:** Using the demographic data collected of the respondents, the descriptive statistics were calculated. The statistical software used to analyze the was SPSS and R. A regression analysis was conducted to ascertain the relationship between risk identification strategies and supply chain resilience.

3.5 Validity and Reliability

- **Qualitative Validity:** Triangulation was used by incorporating multiple data sources (interviews and focus groups) to enhance the credibility of the findings.

- **Quantitative Reliability:** A small sample of professional workers in the juice company were selected to be pre tested on the questionnaire to ensure that the information collected was reliable.

3.6 Ethical Considerations

- The study was conducted based on the ethical guidelines set by the Teju ethics committee. All participants were consented before collecting any information from them and they were assured of their anonymity and confidentiality.

3.7 Limitations

- The research was limited by the fact that it was only focused on a specific company within a particular region and yet the findings were going to be generalized to other companies. Whereas in a situation of self-reported data, an aspect of bias may arise.

3.8 Conclusion

The methodology gives a comprehensive way to traverse risk identification strategies and supply chain resilience through using both qualitative and quantitative methods. The study seeks to valuable information to practitioners.

CHAPTER FOUR

FINDINGS AND OBJECTIVES

4.0 Introduction

This chapter provides the findings got from an overview of the risk identification strategies and their impact on the supply chain resilience while putting in mind the objectives of the study.

4.1 Objectives

- **Primary Objective:**
  To analyze how enhanced risk identification strategies can build the supply chain resilience.
- **Specific Objectives:**
  1. To establish risks affecting supply chain performance.
  2. To assess the existing strategies for mitigating and identifying risk.
  3. To suggest some practices for risk identification to improve the risk management framework.

4.2 Findings

- The research identified that most of the disruptions within the fruit supply chain (i.e., weather, transportation delays and supplier delays) were not easily anticipated hence leading to a panic response.
- Most of the employees were not well trained on how to identify and respond to risks in a timely manner.
- It was also noted that the company is more likely to experience supply disruptions due to relying on a limited number of suppliers.
- The research found that disruptions in periods of high demand and supply delays were due to inventory gaps.
- Inflexible logistic systems were a major problem in responding to abrupt demand changes or transport disruptions.

4.3 Conclusion

These findings show the need for risk identification in order to come up with strong resilient supply chain. Improved strategies like data analytics, supplier monitoring and scenario planning enhance the company to prepare for disruptions and maintain continuous production. The strategies make up a developed framework that improves the supply chain resilience.

CHAPTER FIVE

RECOMMENDATIONS AND CONCLUSION

5.0 Recommendations

Given the findings from the research, I recommended the following actions the fruit factory takes on to improve its risk identification and supply chain resilience.

Implement Advanced Risk Identification Tools

I would recommend the company to put in place data driven tools like analytics and risk management software to help identify risks early in the supply chain.

Strengthen Supplier Relationships and Diversify Sources

The company should ensure that it has more than one supplier to avoid depending on a single supplier. Regular supplier information should be documented to identify potential risks from suppliers.

Improve Inventory Management Systems

Upgrading of the inventory management system to demand driven supply chain models which are easy to be monitored.

Focus on Agility and Flexibility in Logistics

Ensure flexible logistic strategies for instance adopting diverse transportation alternatives to provide a way forward during disruptions.

Invest in Employee Training and Awareness Programs

Given the different levels of production, all employees should be given some training on risk management and resilience.

5.1 Conclusion:

This research was based on risks faced by Teju fruit company's supply chain and strategies that can be implemented to improve its resilience. The study showed that the company is vulnerable to a number of risks that may include transportation delays, supplier reliability and environmental factors. But an overview reveals that there are limited risk identification strategies put in place to improve on the resilience.

The research recommends the company to put in place advanced risk identification tools like improving inventory management, strengthening supplier relationships and increasing logistic flexibility so as to improve on anticipation and respond to risks. Employee training on risk awareness and resilience will significantly improve on the company's ability to handle disruptions.

Though the research gives excellent insights to improve risk management strategies, this comes along with certain limitations such as the use of one fruit company which may not be a full representative of other companies in the industry.

In conclusion, improving the supply chain resilience and putting place better approaches to risk identification in the fruit company will ensure sustainability and competitiveness while mitigating the impact of disruptions.

References:

Brennan, L., & Moran, A. (2021). *Food Safety Regulations and Compliance in the Juice Industry*.

Journal of Food Policy.

Can Saglam, Y., Yildiz Çankaya, S. and Sezen, B. (2021), *Proactive risk mitigation strategies and supply chain risk management performance*

Journal of Manufacturing Technology Management

Chavez, E., et al. (2020). *The Impact of Transportation Disruptions on the Food Supply Chain*.

International Journal of Logistics Management.

Shekarian, M., & Mellat Parast, M. (2020). *An Integrative approach to supply chain disruption risk and resilience management*

International Journal of Logistics Research

Fiedler, K., & Suri, S. (2020). *Sustainability in Agriculture: Risks and Opportunities for Juice Companies*.

Agricultural Economics Review.

Gualtieri, G., & Santucci, A. (2019). *Supplier Risks in the Beverage Industry*.

Journal of Supply Chain Management.

Hauggaard-Nielsen, H., et al. (2020). *Impact of Climate Change on Agricultural Systems and Juice Supply Chains*.

Environmental Science & Policy.

Jones, L., et al. (2019). *Consumer Trends in the Juice Industry: Health, Wellness, and Sustainability*.

Journal of Food Trends and Innovation.

Krut, S., & McClellan, L. (2021). *Changing Consumer Preferences and Their Impact on the Juice Market*.

Journal of Consumer Behavior.

Melnyk, S., et al. (2020). *Packaging and Sustainability Challenges in the Juice Industry*. Journal of Sustainable Manufacturing.

Rosenzweig, C., et al. (2020). *Agricultural Pests and Diseases and Their Impact on Fruit Juice Production*. Nature Sustainability.

Sivakumar, M., et al. (2020). *Food Contamination Risks in Juice Production*. Food Control.

Swinnen, J. (2021). *Climate Change and Agricultural Risk in the Juice Supply Chain*. Agricultural Economics.

Tadic, J., & Muratti, T. (2021). *Geopolitical Risks and Supply Chain Disruptions in the Juice Industry*. Global Trade and Economic Review.

Terry, G., et al. (2020). *Health and Labeling Regulations in the Juice Industry*. Journal of Health and Food Policy.

Vlahov, D., et al. (2020). *Food Safety and Juice Manufacturing Risks*. Food Safety