ASSESSING THE BARRIERS TO IMPLEMENTATION OF SUSTAINABLE SUPPLY CHAIN PRACTICES MUKWANO INDUSTRIES

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

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UGANDA CHRISTIAN UNIVERSITY

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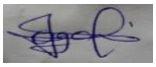
DECLARATION

I, OGAINO IVAN HENRY, hereby declare that this dissertation titled" Assessing the Barriers to Implementation of Sustainable Supply Chain" is my original work and has not been submitted to any other institution for the award of any degree, diploma, or certificate. All sources of information used in this study have been duly acknowledged.

Source material from other authors has been referred to or quoted, due credit has been given in line with accepted academic norms. The study is being submitted as a requirement for obtaining the degree of bachelors of procurement and logistics management in Uganda Christian University.

SIGNED:



OGAINO IVAN HENRY

DATE: 18 FEB, 2026

APPROVAL

This is hereby to authenticate that the above-mentioned research dissertation entitled “assessing the barriers to implantation of sustainable supply chain practices in mukwano industries” has been supervised by me in the research process carried out by Ogaino Ivan Henry who is a student studying Bachelors of procurement and logistics management at Uganda Christian University. To the best of my knowledge the above-mentioned research was done independently and according to the academic standards of the university.

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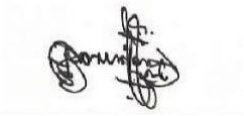
Signature: 

Date: 1/ 04/ **2026**

DEDICATION

This study acknowledges the Almighty God who has continually been merciful, wise, and strong throughout my academic career. I also appreciate my dear family who have been consistent in their support, prayers, and encouragement. Sincere gratitude to my parents and sponsors for trusting and sacrificing for me. Finally, I would like to acknowledge all my procurement and supply chain practitioners who tirelessly strive for excellence to ensure efficient and effective supply chains in Uganda and beyond.

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ABSTRACT

An assessment of the hindrances to the adoption of Sustainable Supply Chain Practices (SSCP) at Mukwano Industries Ltd. Due to the increased focus worldwide on sustainability, manufacturing organizations have been compelled to consider sustainability in terms of environmental, socio-economic, and other aspects of the supply chains. However, despite the need for the organizations in developing countries to adopt these initiatives, they fail to do so in a significant manner. Therefore, the purpose of the study is to identify any financial, technological, organizational, and institutional barriers to the adoption of SSCP at Mukwano Industries Ltd. Descriptive research was adopted along with the application of quantitative method. The questionnaires were administered to employees involved in procurement, logistics, manufacturing, and management departments. Descriptive statistics, including means and standard deviations, were used to analyze the collected data. The results show that the high cost of implementing SSCP, inadequate financial resources, poor technological infrastructure, employee resistance, lack of top management commitment, insufficient knowledge of sustainability practices, and weak enforcement of environmental regulations are among the key barriers to the adoption of SSCP. Organizational and financial constraints emerged as the most significant challenges affecting implementation. In conclusion, although Mukwano Industries Ltd recognizes the importance of sustainable supply chain practices, various internal and external barriers limit their effective adoption. The study recommends strengthening management support, enhancing employee capacity through training, adopting appropriate technologies, ensuring proper budgeting and allocation of funds, and enforcing environmental laws. This research contributes valuable insights to the existing body of knowledge on sustainable supply chain management in developing countries.

CHAPTER ONE

1.0 INTRODUCTION

This chapter provides a broad perspective of the study background, problem statement and objectives of the study, research questions, research hypotheses, significance of the study, and scope of the study.

1.1BACKGROUND OF THE STUDY

Sustainable supply chain management entails the deliberate incorporation of environmental, social, and economic considerations in supply chain management for sustained ecological and organizational viability (Seuring & Müller, 2008). Such considerations include green purchasing, energy savings, waste reduction, ethical sourcing, recycling, and close supplier cooperation. The adoption of sustainable practices helps cut costs and increase operational efficiency (Zhu & Sarkis, 2004). For instance, the use of energy saving technology and minimization of waste helps in reducing costs of production considerably and optimizing utilization of resources (Zhu & Sarkis, 2004). Nevertheless, Sustainable practice applications in developing nations are still not well understood. The majority of studies on this topic have been conducted in developed nations. As such, there is little information on the influence of poor infrastructure, poor regulatory enforcement, and financial constraints on the implementation of sustainable practices in developing nations such as Uganda (Carter & Easton, 2011). The main obstacles encountered are the high initial costs associated with sustainable technology, certification requirements, and environmentally friendly materials which are costly in resource-poor environments (Zhu & Sarkis, 2004).1.11

HISTORICAL BACKGROUND

Sustainable supply chain management entails the deliberate incorporation of environmental, social, and economic considerations in supply chain management for sustained ecological and organizational viability (Seuring & Müller, 2008). Such considerations include green purchasing, energy savings, waste reduction, ethical sourcing, recycling, and close supplier cooperation. The adoption of sustainable practices helps cut costs and increase operational efficiency (Zhu & Sarkis, 2004). For instance, the use of energy saving technology and minimization of waste helps in reducing costs of production considerably and optimizing utilization of resources (Zhu & Sarkis,

2004). Nevertheless, little is known regarding the application of sustainable practices in developing countries. Most studies have been carried out in developed countries. As such, there is little information on the influence of poor infrastructure, poor regulatory enforcement, and financial constraints on the implementation of sustainable practices in developing nations such as Uganda (Carter & Easton, 2011). The main obstacles encountered are the high initial costs associated with sustainable technology, certification requirements, and environmentally friendly materials which are costly in resource-poor environments (Zhu & Sarkis, 2004).1.11

THEORETICAL BACKGROUND

A theory is a systematic set of ideas, principles, or statements that explain, predict, and provide understanding about a particular phenomenon or relationship between variables (Giles, Harrison, 2023) This study is anchored on the institutional theory and the Resource Based Theory (RBV).

1. Institutional theory

The institutional theory was proposed by Paul DiMaggio and Walter Powell in 1983 and it suggests that organizations do not operate solely on the basis of efficiency or rationality, but also on rules, norms, values and expectations of the external environment (DiMaggio & Powell, 1983). It proposes that firms strive for legitimacy by adopting sustainable supply chain practices not only for efficiency and profitability reasons but also to conform to the expectations of regulators, customers, investors and the general public (DiMaggio & Powell, 1983). The Theory explains the study variables by suggesting that firms implement or avoid implementing sustainable supply chain practices because of external pressures from the institutional environment, rather than internal efficiency (Meyer & Rowan, 1977; DiMaggio & Powell, 1983). Low coercive pressures (due to weak regulatory oversight and government enforcement) and normative pressures (due to inadequate pressure from employees, suppliers, and customers) limit the implementation of sustainability initiatives. Furthermore, weak mimetic pressures due to the lack of a strong sustainable manufacturing leader in Uganda restrain firms' propensity to copy best practices. As such, the institutional environment impacts the barriers of implementing sustainable supply chain practices through the lenses of legitimacy, compliance and competitiveness (Scott, 2014). The key contribution of this theory is that it highlights non-economic motives for sustainability. In contrast to traditional economic theories that focus on profits, Institutional Theory emphasizes the role of legitimacy, reputation and compliance in driving firms towards sustainable practices (DiMaggio & Powell, 1983). But a major weakness of this theory is its external focus. It mainly considers coercive, mimetic and normative pressures, but less attention is given to internal drivers like culture, leadership, and innovation (Barreto & Baden-Fuller, 2006). But, the limitation of this theory resulted in the development of an additional

2. The Resource-Based View (RBV) theory

The Resource-based View (RBV) was proposed by Barney (1991) and it suggests that a firm's competitive advantage arises from its capacity to build and exploit valuable, rare, inimitable and non-substitutable resources. This theory assumes resource heterogeneity, whereby firms vary in their resources and capabilities, for example, in the form of green technologies, sustainability know-how, and supplier alliances. The Resource-Based Theory explains the variables in the research by suggesting that the capacity of a firm to adopt sustainable supply chain practices is constrained by the resources and capabilities of the firm (Barney, 1991; Wernerfelt, 1984). Constraints such as financial, technology, human and organizational capabilities impede effective implementation of sustainability practices. The theory proposes that firms can successfully implement sustainable practices only if they have resources that are valuable, rare, inimitable and non-substitutable, which reduces adoption and implementation of sustainable practices if there are resource constraints. Thus, the resource endowments of firms determine the barriers and extent of implementation of sustainable supply chain practices (Penrose, 1959). One of the major advantages of the RBV is its strategic focus. It provides a lens to view how sustainability actions can move from compliance to a source of sustained competitive advantage (Hart, 1995). By emphasizing a firm's capabilities, RBV emphasizes the way in which firms can incorporate sustainability into their strategies to gain a competitive advantage. However, a drawback of the Resource-Based Theory is that it tends to focus on a firm's internal resources and capabilities while overlooking other external factors such as market environment, competition and regulation (Barney, 1991; Wernerfelt, 1984).

1.13 CONCEPTUAL BACKGROUND.

Sustainable supply chain practices refer to the extent, effectiveness, and consistency with which an organization integrates environmental, social, and economic sustainability principles into its supply chain activities (Nyaga & Achuora, 2020). This may include practices such as green procurement, waste reduction, energy efficiency, ethical sourcing, recycling, supplier sustainability collaboration, and compliance with sustainability regulations (Seuring and Müller (2008), What we know about the sustainable supply chain practices is that they help in Cost Reduction and Efficiency through Implementation of sustainable practices such as recycling (Nyaga & Achuora, 2020). However, we do not know the extent of Implementation across Contexts where many studies focus on developed countries, yet there is limited empirical evidence from developing nations like Uganda, where challenges such as weak infrastructure, limited enforcement, and financial constraints may affect implementation (Carter & Easton, 2011). This their fore gives us reason why we should know about sustainable supply chain practices as it will help to enhance organizational competitiveness.

The barriers to implementing sustainable supply chain practices refer to the challenges that hinder organizations from adopting the ESG sustainability principles in their supply chains (Nyaga & Achuora, 2020)., What we know about the barriers is high Financial Costs where high initial investment in green technologies, renewable energy, eco-friendly materials, and certifications makes adoption difficult (Nyaga & Achuora, 2020).

What we are unaware of regarding the barriers is that some have been insufficiently explored, as most existing studies have been conducted in developed countries. As a result, it is not clearly understood whether these barriers differ in developing economies such as Uganda. It is therefore important to examine these barriers within this context, as this understanding can support policy and regulatory development by providing policymakers with evidence on the challenges firms face, enabling them to design appropriate regulations, incentives, and infrastructure.

CONTEXTUAL BACKGROUND

The manufacturing sector is essential for industrialization and economic growth, as it is a source of employment, innovation and trade opportunities in both advanced economies and developing countries. Internationally, the industry is broken down into sub-sectors including food and beverages, textiles and garments, chemicals and plastics, metals and engineering, wood and paper products, and electronics. This is indicative of the variety of products and degree of technological sophistication in the sector (Waswa & Otinga, 2020). Manufacturing supply chains are often resource-intensive and include processes such as procurement of resources, processing, packaging, shipping and disposal (Waswa & Otinga, 2020). These activities have a significant impact on the environment, in terms of greenhouse gas emissions, energy consumption and waste (Chardine-Baumann & Botta-Genoulaz, 2014). As a result, sustainable supply chain practices like green procurement, cleaner production technologies, recycling and energy-efficient transportation have emerged as strategies to reduce these effects (Waswa & Otinga, 2020). But in emerging markets, implementing sustainable practices presents unique challenges. Lack of financial resources, regulatory support and access to technologies in developed countries can impede the focus on sustainability practices (Waswa & Otinga, 2020). Furthermore, lack of managerial and supplier awareness, as well as resistance to change, also pose barriers to the shift towards sustainability (Agyemang et al., 2018). While businesses in developed economies increasingly integrate sustainability into regulatory and market frameworks, in emerging markets, sustainability is often viewed as a regulatory burden and costly activity (Govindan & Bouzon, 2018). In Uganda, the manufacturing sector is one of the fastest-growing sectors and is a major contributor to the gross domestic product (GDP). It includes formal large-scale manufacturers, small and medium enterprises (SMEs) and the informal cottage industry. The main sub-sectors include processing foods and beverages, plastics and packaging materials, textiles, chemicals and construction materials. This sector, however, is not immune to sustainability issues, making it an interesting case for exploring the adoption of sustainable supply chain practices in the context of a developing country.

STATEMENT OF THE PROBLEM

In Germany, the practice of sustainable supply chain is primarily driven by regulatory and societal pressures. Legislation like the German Supply Chain Due Diligence Act have created legal requirements for firms to track and report on supply chain sustainability (GFMEACA, 2021). Such measures promote sustainability but also pose problems for companies, problems such as the cost of compliance, paperwork and data collection and tracing of suppliers (Reshad et al., 2022). So, in developed markets, the barriers to sustainability are information, compliance and supplier mapping. In Kenya, barriers to sustainable supply chain management (SSCM) include, lack of financial resources, poor infrastructure and lack of regulatory enforcement (Nteta & Mushonga, 2019; Gupta et al., 2020). Such shortcomings mean that for many firms, sustainability in the supply chain is considered expensive or less important to primary business goals, the prevalence of informal suppliers across the continent also pose challenges in meeting sustainability requirements (Global Green Growth Institute [GGGI], 2022). The implementation of SSCM in African firms is impeded by limited access to resources, fragmented supply chains and lack of technical expertise. In Uganda studies indicate that firms are now aware of the benefits of sustainability but still face challenges in implementing sustainable practices in their supply chains. challenges like: High Initial Costs needed for incorporating sustainable practices like Sustainable technologies, certifications, make firms reluctant or unable to bear (Waswa, V.N.& Otinga, H.2020), Knowledge and Skills Gap where organizations may lack trained personnel, awareness, or technical expertise to adopt sustainable practices effectively (Waswa, V.N.& Otinga, H.2020). Other scholars have linked the adoption of sustainable approaches in the supply chain through the following strategies: Green procurement (Zhu & Sarkis, 2004) and Eco-design/Product development (Seuring & Müller, 2008). However, there is limited research that specifically examines the barriers to implementing sustainable supply chain management in developing countries; therefore, this study seeks to fill that gap.

PURPOSE OF THE STUDY

To examine the relationship between barriers to implementation and sustainable supply chain management (SSCM) practices in the supply chain of Mukwano Industries.

GENERAL OBJECTIVES

To examine the relationship between limited experience and sustainable supply chain practices

To examine the relationship between financial constraints and sustainable supply chain practices

To examine the relationship between resistance to change and sustainable supply chain practices

1.5 RESEARCH QUESTIONS

Relationship between barriers to implementation of sustainable supply chain practices in the supply chain of Mukwano Industries

Relationship between limited experience and implementation of sustainable supply chain practices

Relationship between financial constraints and implementation of sustainable supply chain practices

Relationship between resistance to change and implementation of sustainable supply chain practices

1.6 SCOPE OF THE STUDY

1.51 Geographical Scope

This study is confined to Mukwano Industries.

1.52 Time Scope

The study will be conducted within a period of four months to provide sufficient time for data collection and reporting of findings.

1.53 Content Scope

This study focuses on examining the barriers to the implementation of sustainable supply chain practices within the supply chain of Mukwano Industries.

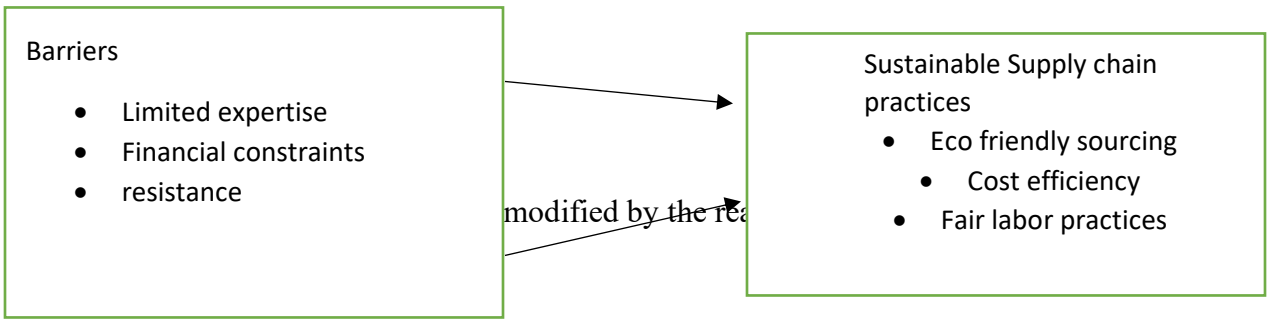
1.6 SIGNIFICANCE OF THE STUDY

To fellow researchers, the study will contribute to knowledge development by providing new findings, confirming or challenging existing theories, filling existing gaps, and introducing new approaches. It will also serve as a foundation for further research on strategies for overcoming such barriers.

To managers, the study supports evidence-based decision-making by providing data-driven insights for strategic planning, resource allocation, product development, and policy formulation, thereby improving efficiency in resource utilization.

To development partners, the study enhances accountability and impact assessment by demonstrating how interventions and funding contribute to outcomes such as equity and sustainability. It also helps align interventions with the actual needs of local firms to ensure effective and efficient resource utilization.

1.7 CONCEPTUAL FRAMEWORK



CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

In this chapter, there will be a review of existing literature regarding the barriers preventing the incorporation of sustainable supply chain strategies in Mukwano Industries with an emphasis on both the theoretical and empirical aspects of organizational efforts toward adopting sustainability.

2.1 THEORETICAL REVIEW

2.11 The Resource-Based Theory

The Resource-Based Theory (RBT), advanced by Barney (1991), explains that a firm's competitive advantage is derived from its ability to acquire and effectively utilize resources that are valuable, rare, inimitable, and non-substitutable (VRIN). The theory assumes resource heterogeneity, meaning firms differ in the resources and capabilities they possess, which explains performance differences even within the same industry (Wernerfelt, 1984). In relation to sustainable supply chain management, RBT explains that a firm's internal resources—such as financial capital, human expertise, technological systems, and organizational routines—determine its ability to implement sustainability practices (Grant, 1991; Mailani et al., 2024). The resource-based theory is applicable to this research because it helps explain the difficulties firms such as Mukwano Industries may encounter when implementing sustainable supply chain practices. The theory of RBT suggests that firms need sufficient financial, human and technological resources to build sustainability-oriented capabilities. Lacking or underdeveloped strategic resources creates barriers to implementing sustainability (Hart, 1995; Govindan et al., 2016). Lack of financial resources constrains firms' ability to invest in green technologies and sustainable sourcing, while insufficient human and managerial resources hinder sustainability knowledge, commitment and alignment (Waswa & Otinga, 2020). Lack of technological resources also affects the monitoring, coordination and integration of sustainability activities in supply chains (Tumpa et al., 2019). The key elements of RBT include: firm resources, capabilities, resource heterogeneity, resource immobility and VRIN attributes. Firm resources include tangible resources such as financial, equipment and technology and intangible resources such as human skills, culture, reputation and knowledge (Barney, 1991; Grant, 1991). Firm capabilities are the ability of a firm to combine, coordinate and reconfigure resources to gain a strategic advantage and are built through practice, making them hard to copy (Teece et al., 1997). Resource heterogeneity accounts for firm

differences and resource immobility ensures that valuable resources are difficult to transfer or imitate, enabling competitive advantage (Barney, 1991). The VRIN model is applied to determine if resources can deliver a sustained competitive advantage by allowing firms to leverage opportunities, respond to threats and achieve sustainability goals (Hart, 1995). Recent research confirms that RBT is applicable to the field of supply chain management and sustainability. For example, Komakech et al. (2025) showed that new digital technologies like blockchain, artificial intelligence and the Internet of Things are strategic resources that improve supply chain efficiency and sustainability when properly used. Similarly, the study by Mailani et al. (2024) indicated that VRIN/VRIO resources increase sustainable competitive advantage, showing the significance of firm capability besides resource availability. RBVT is constrained in many ways. First, RBT assumes a static perspective of the business environment without considering dynamic elements like changes in the market, technological advancements, or regulatory environments, which might render the resources unhelpful in the long term (Mailani et al., 2024; Komakech et al., 2025). Moreover, RBT fails to provide adequate guidelines for quantifying intangible assets like corporate culture and knowledge. RBVT overlooks external environmental elements, including stakeholder interests and supply chain difficulties, which might affect the efficiency of internal resources (Aragón-Correa & Sharma, 2003).

2.12 The institutional theory,

The institutional theory was proposed by Paul DiMaggio 1983 and it suggests that firms do not only function on efficiency or rationality, but they are also contingent upon rules, norms, values and expectations from the outside environment (DiMaggio & Powell, 1983). It implies that firms strive for legitimacy by adopting sustainable supply chain practices not only for financial gains, but to comply with the expectations of regulators, consumers, investors and other stakeholders (DiMaggio & Powell, 1983). The Resource-Based Theory (RBT) is a sound theory that explains how internal firm resources and capabilities allow it to adopt sustainable supply chain practices, (Barney 1991; Grant 1991) but it does not explicitly consider external factors. The adoption of sustainable supply chain practices can be influenced by factors such as regulatory constraints, industry standards, and public expectations (DiMaggio & Powell, 1983). Institutional Theory helps to explain the role of external institutional pressures coercive, normative, and mimetic on firm implementation of sustainable practices (Scott, 2008). Pressure by way of government policies, environmental rules, and regulatory compliance can compel organizations to practice sustainable supply chain despite their resources available (DiMaggio & Powell, 1983). Mukwano Industries can find itself forced into adhering to some form of regulation with regards to sourcing sustainably or handling waste. Normative pressure in the form of professional or industry norms, or the expectations of stakeholders, will push corporations towards adhering to the sustainability norms for reasons of legitimizing their operations (Scott, 2008). For instance, supplier or consumers may insist on sustainable packaging or sources, compelling companies to make certain decisions. Mimetic pressures arise when firms copy others (including successful competitors) who have embraced sustainable practices to gain legitimacy or competitiveness (DiMaggio & Powell, 1983). The integration of RBT and Institutional Theory in this study helps understand both internal resources and external pressures that shape the level of sustainable supply chain practices. RBT accounts for the ability of some firms, such as Mukwano Industries, to draw on financial, technological, human and organizational resources to overcome challenges (Barney, 1991; Hart, 1995), while Institutional Theory accounts for the adoption of sustainability in response to legitimacy and regulatory pressures (Scott, 2008). This mix is suggested in sustainability studies, as internal resources are not enough without the institutional context, particularly in emerging markets where regulatory, normative and mimetic pressures are important (Beske et al., 2014; Kumar & Chandrakar, 20

2.2 CONCEPTUAL REVIEW.

2.21 SUSTAINABLE SUPPLY CHAIN

Sustainable supply chain practices (SSCP) involve the integration of supply chain processes such as sourcing, production and distribution to ensure sustainability of the environment, society and economy (Waswa & Otinga, 2020). This practice is based on the Triple Bottom Line approach, which encompasses environmental, social and economic dimensions (Elkington, 1997). Sustainable supply chain management (SSCM) is the deliberate and transparent integration of these three practices in supply chain processes to improve the firm's performance over time (Carter & Rogers, 2008). SSCM has three key elements. Environmental sustainability practices aim to minimize environmental impacts through practices like green procurement, waste management, recycling, energy efficiency and clean production (Waswa & Otinga, 2020; Zhu & Sarkis, 2021). Social sustainability practices focus on ethical employment practices, workplace health and safety, and fair wages and community relations along the supply chain which enhance stakeholder relationships and firm reputation (Agyemang et al., 2018). Economic sustainability practices focus on profitability and competitiveness by enhancing operational efficiency, cost reduction and supplier partnerships (Carter & Rogers, 2008). Understanding the concept of SSCM is crucial because firms still pursue cost and speed at the detriment of environmental and social sustainability, which suggests a lack of sustainability awareness (Newbert, 2007). Using this concept allows us to understand the factors (such as financial, technological, regulatory and skills) that limit firms from achieving a balance between profit, planet and people (especially in developing economies such as Uganda) (Waswa & Otinga, 2020; Sajjad et al., 2020). Research findings indicate that sustainable supply chain management has a positive impact on performance. These studies find that eco-procurement, ethical sourcing, supplier engagement, waste reduction and reverse logistics enhance operational efficiency, environmental, and social performance, competitive advantage and strategic sustainability (Agyemang et al., 2018; Mailani et al., 2024; Waswa & Otinga, 2020). Yet, other researchers suggest these impacts might be indirect, mediated through innovation, competitive advantage and organizational capacities, as per the Resource-Based View (Nyaga & Achuora, 2020). While there is a general global trend towards SSCM, empirical evidence in Uganda is scarce. These tend to be cross-sectional, focused on urban settings, and offer limited insights into the relationships between specific sustainable supply chain practices and performance (Tumuhimbise et al., 2023; Kassali et al., 2021). Moreover, the influence of

policies and institutional factors on sustainable supply chain adoption is under-researched, revealing a major contextual research gap. SSCM interacts with the other factors considered in this research - barriers and supply chain performance. These include financial, technological, institutional, and supplier capacity constraints, which impact on how firms adopt sustainable supply chain practices and subsequently performance (Sánchez-Flores et al., 2020; Shekarian et al., 2022). Companies implementing SSCM tend to achieve greater efficiency, lower waste, better reputation, and long-term competitiveness, while barriers to sustainable supply chain adoption and performance are exacerbated (Chen et al., 2024)

2.22 Barriers

Barriers to implementing sustainable supply chain practices (SSCP) are the financial, technological, organizational, and institutional challenges that prevent companies from fully integrating environmental, social, and economic goals into their supply chain operations (Waswa & Otinga, 2020). These barriers limit the adoption of sustainable practices in sourcing, production, and distribution processes. As a result, firms struggle to balance environmental protection with social well-being and economic performance. This concept is based on the Triple Bottom Line framework, which focuses on pursuing these three goals at once (Elkington, 1997). Carter and Rogers (2008) state that it is essential for firms to recognize and address these barriers if they are committed to incorporating sustainability within their supply chains and improving their performance. SSCP barriers can be categorized under three main categories. Financial barriers relate to the substantial costs associated with green technologies, sustainability certifications, and environmental production practices, which many companies within developing nations have trouble dealing with (Govindan et al., 2016; Waswa & Otinga, 2020). Technological barriers entail the absence of advanced production technologies and digital information systems that monitor sustainability initiatives. These barriers hinder the ability of organizations to operationalize their sustainability objectives (Zhu & Sarkis, 2007; Tumpa et al., 2019). Organizational barriers emanate from the lack of managerial skills, change management, and insufficient employee training. These barriers weaken a firm's ability to execute SSCP practices effectively (Walker et al., 2008; Sajjad et al., 2020). Finally, institutional barriers include poor environmental regulations and insufficient governmental assistance. These barriers may lead to low external pressure on firms to adopt sustainable practices (Sajjad et al., 2020; Tumuhimbise et al., 2023).

these barriers is vital since many companies still focus more on cutting costs and speeding up operations than on sustainability. This indicates partial adoption of sustainable supply chain management practices (Newbert, 2007). Through identifying such barriers, whether they are financial, technological, organizational, or institutional, researchers and practitioners can determine what factors significantly hinder the realization of the Triple Bottom Line (Waswa & Otinga, 2020; Sajjad et al., 2020). In particular, the issue is relevant to developing nations such as Uganda where resource availability and institutional strength are low. The evidence shows that such barriers pose great challenges to the adoption of SSCP and have a significant influence on organizational performance. For example, companies constrained by financial or technological factors experience difficulties in implementing green procurement programs and cutting down waste by employing ethical sourcing techniques or supplier partnerships (Agyemang et al., 2018; Mailani et al., 2024; Shekarian et al., 2022). Besides, such barriers may indirectly affect performance through innovation or competitive advantage according to the Resource-Based View theory (Nyaga & Achuora, 2020). Although there is growing global interest in sustainable supply chains, few studies have considered the barriers to SSCP adoption in Uganda. Existing literature tends to adopt a cross-sectional approach with an urban focus without presenting concrete evidence on the barriers to the adoption of SSCP in relation to supply chain performance (Tumuhimbise et al., 2023; Kassali et al., 2021). More importantly, there is a lack of literature on government policy or institutional mechanisms to address such barriers.

2.3 EMPERICAL REVIEW

2.31 Barriers to implementation of SSCP

According to studies, one of the barriers faced by businesses when trying to adopt sustainable supply chains is restricted budget. According to Govindan et al. (2016), the costly nature of green technologies, certifications, and monitoring systems deters companies from practicing sustainability. Zhu and Sarkis (2007) similarly identified the cost of using environmentally friendly raw materials as well as manufacturing methods as one of the factors that affect firms' willingness to incorporate sustainability into their supply chains. This clearly indicates that the lack of funds restricts firms from accessing sustainable resources. Walker & McBain (2008) found that insufficient commitment from upper management, resistance to change within firms, and the lack of awareness among senior executives concerning sustainability are important

barriers to the implementation of sustainable practices in supply chains. As such, Sajjad & Tappin (2020) found that the lack of sufficient knowledge on sustainability and appropriate training of workers are important barriers that limit the adoption of sustainable supply chain practices by firms. This clearly indicates that management commitment and capability are crucial factors for the adoption of sustainability practices by firms. Tumpa et al. (2019) found that problems associated with information system inefficiencies and lack of digital infrastructure, including poor data integration, pose difficulties for companies to monitor suppliers' sustainability performance. Similarly, Zhu et al. (2013) indicated that lacking technical knowledge and clean production technologies prevents firms from implementing their sustainability practices. Seuring & Müller (2008) found that supplier-related challenges, such as poor cooperation, lack of transparency, and poor coordination among partners, restrict the success of sustainability practices. The findings of Agyemang et al. (2018) further indicate that if suppliers do not meet sustainability standards, including environmental and social requirements, it limits the success of sustainability practices – in particular, in developing countries. Moreover, according to Sajjad et al. (2020), institutions and regulations present challenges as weak enforcement of environmental laws, limited incentive, and poor policies reduce the motivation of companies to adopt sustainable practices. This is similar to Tumuhimbise et al. (2023), who indicated that poor regulation enforcement in Uganda reduces corporate interest in embracing sustainable initiatives. Clearly, all these studies demonstrate the significance of external pressures that limit companies' adoption of sustainable practices.

2.32 Limited experience and implementation of SSSP.

In their study, Walker & McBain (2008) argued that experience is a crucial factor that influences successful SSSP adoption in businesses. According to the authors, businesses with insufficient experience in environmental and social activities have serious problems applying sustainability concepts and strategies in their supply chains. Such an absence of experience contributes to uncertainties in decision making and results in a superficial incorporation of sustainability practices in organizations. For example, firms might undertake sustainable practices in order to comply with regulatory requirements but cannot properly implement such ideas as green procurement, logistics, manufacturing, and distribution. This means that experience is important not only because it helps gain knowledge but also since it allows organizations to use such

knowledge efficiently in practice. Zhu & Sarkis (2007) emphasized that insufficient experience in green supply chain management is a major barrier preventing firms from effectively managing suppliers, using environmentally friendly technologies and meeting sustainability requirements. As shown by the empirical findings, a limited amount of experience negatively influences firms' ability to develop required technical and managerial competencies related to supplier evaluation and sustainable practices adoption. Such firms usually find themselves in situations where they cannot cope with lags and delays in sustainability implementation or face resistance in the supply chain because of a lack of proper support and coordination. The researchers conclude that prior experience enables organizations to get the needed expertise and make the right decisions regarding supply chain sustainability issues. Sajjad & Tappin (2020) studied the role of experience in the context of developing countries and showed that insufficient managerial and employee experience might become a major barrier for supply chain sustainability adoption. According to the findings, such organizations often face a shortage of training opportunities, have low-level awareness of sustainability requirements, and do not possess sufficient experience coordinating supply chain activities. All this makes it difficult to implement environmental, social, and economic practices in supply chain management and negatively influences its sustainability. It was found that the development of relevant expertise and experience might contribute significantly to successful sustainability implementation and performance in resource-scarce environment. Based on the concept of organizational capabilities, Teece, Pisano, & Shuen (1997) concluded that experience is extremely important in creating organizational routines needed for effective SSSP implementation. The authors emphasized that organizational capabilities develop over time through learning, experimenting, and building up experience. Organizations lacking such capabilities are unlikely to be capable of using such important routines as suppliers' audit and assessment, monitoring activities, and environmental reporting as tools for implementing sustainable practices. This proves the importance of experience that helps develop unique organizational capabilities to integrate sustainability practices efficiently into organizations' supply chain management operations. Beske & Seuring (2014) examined the influence of experience in sustainability efforts on successful sustainability implementation practices. The researchers showed that experience positively influenced firms' ability to embed environmental and social practices in their supply chains by means of collaboration with suppliers and other stakeholders. At the same time, firms with insufficient experience faced challenges related to the

coordination with suppliers and management of environmental risks under conditions when sustainable practices had to be maintained consistently. Their study illustrates how accumulated experience enhances both operational capabilities and strategic decision-making necessary for comprehensively implementing sustainability initiatives.

2.33 Financial constraints and implementing SSCP

The literature shows that there is an abundance of evidence to indicate that financial constraints constitute an important barrier to the adoption of sustainable supply chain practices. To be able to implement environmentally friendly technology and materials, as well as to come up with innovative ways of producing efficiently and setting up monitoring systems for sustainability, companies need to have enough finances available (Govindan et al., 2016). Firms operating in developing countries have been found to face substantial capital restraints and high upfront costs that limit their ability to implement sustainability measures (Govindan et al., 2016). Even though the firms acknowledge the benefits of implementing sustainable practices, due to the absence of financial resources they cannot purchase the necessary tools and technologies to implement them effectively. Firms' financial limitations are also a factor in developing sustainable supply chain relationships between them and their suppliers (Zhu and Sarkis, 2007). Firms with limited budgetary resources often prioritize short-term cost savings over long-term investments in sustainability, leading to partial or delayed implementation of sustainable supply chain practices. The authors also indicate that financial capacity directly influences the extent and depth of sustainability integration within various processes within supply chains. Walker and McBain (2008) discuss how financial limitations also interact with other managerial and organizational issues. When firms have limited financial resources, they struggle to train employees, conduct supplier audits and implement sustainability-related policies and internally develop sustainability-focused

2.34 Resistance to change and implementation of SSCP

Those who implement sustainable supply chain practices face a big hurdle in the form of resistance to change (Walker and McBain, 2008). Resistance to change has been documented in a number of empirical studies that point to the fact that employees, managers and suppliers all have the potential to experience resistance to sustainability initiatives as a result of their own uncertainty about what those initiatives entail, the perceived complexity of the initiatives or their fear that by participating

in these initiatives their current routines will be disrupted. Walker and McBain (2008) argue that resistance often occurs when employees are not familiar with the concept of sustainability or when they view it as an additional burden versus a strategic priority. This resistance can result in prolonged adoption of sustainability practices, restricted integration of sustainability practices or compliance with sustainability policies at a surface level versus true compliance with the respective policy. Agyemang et al. (2018) established a connection between resistance to change and the organization's culture. He posited that organizations with rigid hierarchical structures and short-term performance orientations experience a higher degree of resistance to implementing sustainable supply chain practices. This is primarily due to employees believing that green initiatives, ethical sourcing and waste reduction measures require changes in their established workflows and/or pose challenges to their established performance metrics. Lay and Müller (2008) pointed out that suppliers may also resist the adoption of sustainability requirements due to the cost, lack of knowledge or fear of losing their business. Consequently, if suppliers resist, delay or do not comply with environmental and social standards, the focal firm may experience significant interruptions in its supply chain process.

CHAPTER THREE

3.0 Introduction

This chapter discusses how the study will be carried out; this includes the research design, the study area, the population, the sample, data collection methods, data processing techniques, and data analysis methods.

3.1 Research design

This study used a descriptive cross-sectional research design and it was conducted at Mukwano Industries Uganda. Descriptive research design was chosen for this study because it allows the researcher to describe and investigate the relationship between the variables in their natural occurrence. For this study, it enabled the researcher to describe the existing situation and the influence of sustainable supply chain practices at Mukwano Industries Uganda. This study involved collecting data from the respondents at only one point in time. Since this research aimed at understanding the present state of sustainable supply chain systems at Mukwano Industries Uganda, including sourcing, procurement, logistics, and supplier relationship processes, a cross-sectional design would be appropriate since there are numerous research studies in the field of supply chain and procurement which simultaneously measure activities and attitudes of organizations. Another reason why descriptive cross-sectional research design was preferred is because it is low cost, efficient, and works with quantitative data collected via structured questionnaire instruments. The cross-sectional research design allows the use of statistical analysis tools such as descriptive statistics, correlation, and regression to determine the nature, strength, and direction of the relationships between the variables studied.

3.2 Study area

Mukwano Industries Uganda was selected as the site for this study because of its extensive volume of procurement and supply chain activities. The study was conducted among leading manufacturers in Uganda's fast-moving consumer goods (FMCG) sector, which includes producers and distributors of edible oils, soap and detergents. The company is engaged in a broad range of supply chain activities, including sourcing, manufacturing and logistics/delivery, and has a well-developed, mature supply chain infrastructure.

3.3 Study population

Employees working at Mukwano Industries Uganda who participate in commercial product purchasing/sourcing were included in the study population. This includes employees from all functions related to supply chain: procurement, logistics, stores, production, and supply chain management. In addition, all management and supervisory employees responsible for supply chain strategic planning and/or making decisions regarding supply chain operations were also part of the study population. These employees were seen as qualified candidates to provide information regarding their experiences with implementing sustainable supply chain practices throughout the organization.

3.4 Sample size determination

The sample size for this study was determined using Yamane's (1967) formula, which is suitable for calculating sample sizes from a known finite population. The sample size is calculated using the formula.

n = sample size

N = population size

e = margin of error (0.05 at a 95% confidence level)

In this study, the total population of employees in procurement and supply chain functions at Mukwano Industries Uganda was 120.

The calculated sample size was 92 respondents. The sample was proportionally allocated across departments as shown below:

Department	Population (N)	Sample
Procurement unit	30	23
Logistics	25,	19

Stores	20	15
Production	25	19
Supply Chain Management	20	16
Total	120,	92

The table illustrates the proportional distribution of respondents to ensure adequate representation of employees involved in sustainable supply chain practices at Mukwano Industries Uganda.

3.5 Sampling method

Stratified random sampling was employed to obtain participants from all departments that perform procurement and supply chain functions at Mukwano Industries Uganda: procurement, logistics, storage, production, and supply chain management. The target population consists of multiple strata or groups based on their departmental affiliation, and sample members from each group were selected in a random manner from each group based on their number in the total population (see Table 3.1). The two major advantages of using the stratified random sampling technique were (1) representation of samples from all key functional areas so that they can be generalized to the total population; and (2) minimisation of sampling bias.

3.6 Souces of data

The data for the study were obtained both directly from staff at Mukwano Industries Uganda and through using structured questionnaires and open-ended questions as needed to gather further information regarding sustainable supply chains and the associated outcomes that occur; consequently, the primary data are from a "first-person" perspective and represent the current practices, perceptions and experiences of individual employees involved in procurement and supply chain operations. The secondary data are derived from organizational records, corporate reports, policies, procedures and published literature relating to sustainable supply chain management that were used to support or provide context to primary data.

3.7 Data collection methods

The research employed a mixed-methods design. Therefore, both closed-response questions to support quantification and open-ended questions for qualitative data collection were developed into a research questionnaire that was given to 92 employees working within the various departments involved in procurement, logistics, warehouse, production, or supply chain management at Mukwano Industries Uganda Limited as the total population of interest. An informal follow-up interview was conducted with senior management personnel, as deemed necessary, to validate responses by obtaining further information. These data collection techniques provided a systematic, accurate and comprehensive means of addressing the study objectives of this research project.

3.8 Data collection procedure

Prior to commencing data collection, Mukwano Industries Uganda obtained approval from its management before initiating the process. The respondents were contacted via a survey that consisted of a set of 92 questions (each respondent received a different survey) and were allocated adequate time and instructions to complete the questionnaires. Key managerial staff were interviewed informally after administering the survey in order to clarify any responses and understand further about each participant's answers. As a result, systematic, accurate and ethical data collection was achieved.

3.9 Quality and error control

The questionnaire was reviewed by experts to confirm its validity by the supervisor's assessment of the questionnaire and pretesting with a small sample of participants not from the sample, as well as having checked the clarity, relevance, and alignment of the questionnaire with the study objectives, which were all adjusted based on the feedback provided in order to improve content validity.

The reliability of the survey instrument was determined by calculating Cronbach's alpha correlation co-efficient for the Likert-type scale questions in order to evaluate how well the Likert-type scale items measure accurately and consistently developed based on previous literature. Reliability is measured using Cronbach's alpha at a value of ≥ 0.70 to confirm that the survey instrument will be able to reliably measure the opinion of respondents regarding the effect of sustainable supply chain practices on organizational performance in the future.

Overall, these procedures provided the researcher with confidence that the questionnaire would provide both valid and reliable data for analysis of the survey participant results.

3.10 Data analysis

A mixed-methods method was used in the research to collect both qualitative and quantitative data. Quantitative data was collected by administering questionnaires to a sample of 252 respondents. Those data were then coded and put into SPSS software for database improvements and quantifiable descriptive statistics were derived from the data (i.e., frequency distribution, percentage, mean average, and standard deviation) in order to summarize the characteristics and responses to sustainable supply chain practices of the survey participants. Inferential data, using correlation and regression analysis, were done to test for significance level of relationships between sustainable supply chain practices and outcome from the way organizations executed those practices.

Qualitative data was collected through open-ended questions from survey participants, as well as through informal interviews with individuals identified and selected by the researchers. Thematic analysis was used on all qualitative data collected through survey participants and informal interviews to identify patterns and themes through analysis for context and meaning underlying these quantitative findings. This combination of quantitative and qualitative analyses has provided an integrated understanding of the implementation of sustainable supply chain practices at Mukwano Industries Uganda and produced in- context findings from this analysis, which improved reliability and validity of this study.

3.11 Ethical considerations

Strict adherence to ethical standards was maintained during this research project to safeguard the rights of participants and to promote the integrity of the study. Authority was obtained from Mukwano Industries Uganda on the collection of information, and prior to data collection, all potential subjects were briefed on the purpose of the study and assured that their participation would be voluntary. The collected information was treated with strict confidentiality and anonymity was guaranteed; the use of personal information was prohibited. The data were collected honestly, reported accurately, and participants had the right to withdraw from the study at any time. The research study adhered to the ethical principle of protecting the rights of study participants and maintained the integrity of the research study.

3.12 Limitations and delimitations of the study

Limitations: The research was limited. The research was based on a one-time snapshot (cross-section) of the variables. This means that there was no guarantee that the snapshot accurately represented the variations occurring at the various points in time with regard to the use of sustainable supply chain practices. The second limitation was that respondents reported their rankings of sustainable supply chain practices based on their own perceptions. This could lead to bias or inaccuracies in the data. The third limitation was that the research study was conducted only at Mukwano Industries Uganda; therefore, the results may not be as useful for other organizations or sectors

Delimitations: The research was specifically focused on the employees of Mukwano Industries Uganda who were directly involved with the procurement and supply chain process. All non-procurement and supply chain employees were excluded from the research. Inclusion was limited to those employees involved in sustainable supply chain practices and their effect on the outcomes of the organization. No unrelated operational or financial variables were included in the study of sustainable supply chain practices and their effects on organizational outcomes. The delimitations set forth in this section will help ensure the research is focused and practical.

CHAPTER FOUR

DATA PRESENTATION, ANALYSIS AND INTERPRETATION

4.0 Introduction

In this chapter, you will find all of the results of the research project as derived from our original survey results. First, there will be an overview of the response rates for each of the categories mentioned above (demographics, description) and then there will be a comprehensive summary and discussion of those results in order to provide readers with a clear understanding of how these results were obtained.

The analysis presented in this chapter adheres to the research design, sample size, type of data collection, and the methodology that was used to collect the data for this project. The analysis of quantitative data used both descriptive and inferential statistics, while that of qualitative data utilized thematic analysis.

4.1 Characteristics of Respondents

The following part contains the demographic details of the respondents including gender, age, educational qualification, and experience.

4.1.1 Gender of Respondents

Of the 102 respondents, 58 (56.9%) were male and 44 (43.1%) were female. It means that there is an equal participation of both genders in procurement and supply chain management activities.

Gender	Frequency	Percentage
male	58	56%
female	42	44%
Total	102	100%

4.2 Age Group of Respondents

Most respondents were in the 26–35 years age category, accounting for 46.1%, followed by those aged 36–45 years at 32.4%. This indicates that the majority of participants were within the active working-age group and had adequate professional experience.

Age group	Frequency	Percentage
18-25 years	14	13.7%
26-35 years	47	46.1%
36-45 years	33	32.4%
46 years and above	8	7.8%
Total	102	100%

4.3 Education Level of Respondents

Most of the respondents (61.8%) were university graduates, while 23.5% held diplomas. This indicates that the respondents had sufficient academic qualifications to understand sustainable supply chain practices.

Education level	frequency	Percentage
Certificate	7	6.9%
Bachelors' degree	24	23.5%
Diploma	63	61.8%
Post graduate	8	7.8%
Total	102	100%

4.4 Work Experience of Respondents

According to the findings, 49.0% of the respondents had 6–10 years of work experience, indicating strong institutional knowledge within the organization. This distribution shows that a considerable proportion of respondents possessed substantial experience in sustainable supply chain practices.

Work experience	frequency	Percentage
Less than 5 years	21	20.6%
6-10 years	50	49%
11-15 years	22	21.6%
Above 15 years	9	8.8%
Total	102	100%

4.5 Descriptive Analysis of Study Variables

A descriptive analysis entails presenting and organizing the collected data in a manner that provides insights into the opinions and experiences of the respondents. This section gives an overview of the key findings in relation to the barriers to and the implementation of sustainable supply chain practices at Mukwano Industries.

TABLE 4.41 RELATIONSHIP BETWEEN BARRIERS AND IMPLEMENTATION OF SUSTAINABLE SUPPLY CHAIN PRACTICES

Statement	Strongly disagree	disagree	neutral	Agree	Strongly agree	Mean	Standard deviation
Lack of top management support affects sustainability				0.67	0.33	4.33	0.58
Resistance to change among employees				0.67	0.33	4.33	0.58
Inadequate sustainability policies within the firm			0.33	0.33	0.33	3.96	0.81
Weak enforcement of environmental regulations		0.33			0.67	4.01	1.41
Inconsistent government policies				0.67	0.33	4.33	0.47
Limited external pressure to adopt sustainability					1.0	5.00	0.00

Lack of modern technology affects sustainability efforts	0.33			0.67		3.00	1.73

The responses from the sample group on the barriers hindering the adoption of sustainability in supply chain management practices are shown in Table 4.41 below. Generally, the results show that the respondents have agreed that many organizational, technical, and institutional barriers hinder the effectiveness of the sustainability implementation process, since the average scores in most variables were more than the neutral midpoint value.

From the findings, lack of management commitment emerges as one of the barriers that hinder the process of implementing sustainability. This variable had the highest mean score (M = 4.33, SD = 0.58), suggesting that respondents agree with each other that managerial commitment is important for the success of sustainability processes in supply chain management. Without appropriate direction, resource allocation, and compliance enforcement from managers, the implementation of sustainability processes will not be achieved effectively within supply chain management practice.

Further, the respondents indicated that resistance to change from employees is another barrier to sustainability implementation, having the same mean score as the previous variable (M = 4.33, SD = 0.58). Resistance to change from employees affects the process of implementing sustainability initiatives within the supply chain. Despite introducing such initiatives, employees' reluctance or fear of embracing new processes may lead to poor implementation of sustainability initiatives

The respondents also indicated that organizations within the supply chain faced considerable barriers due to a lack of effective sustainability policies as measured by the mean score of 3.96 (SD = 0.81). The respondents moderately agree that the absence of clear, documented sustainability policies creates an obstacle to effectively integrating sustainability across the supply chain, including the areas of purchasing, logistics, and supplier management.

In addition, weak enforcement of environmental regulations was identified as an external barrier with a mean score of 4.01 and a relatively higher standard deviation (SD = 1.41). The higher variability in responses indicates differing personal experiences among respondents; however, the overall agreement among respondents indicates that there is little to no regulatory pressure on organizations to adhere to environmental and sustainability standards, thereby reducing the extent of their adoption of sustainability practices.

performance.

TABLE 4.42 RELATIONSHIP BETWEEN LIMIED EXPERIENCE AND ADOPTION OF SSCP

statement	Strongly disagree	disagree	neutral	disagree	Strongly agree	Mean	Standard deviation
Limited experience reduces awareness of sustainability practices	0.3	0.33	0.33	2.0	3.0	4.05	0.53
Lack of practical exposure affects understanding of sustainability requirements	0.33	0.33	0.33	2.0	3.0	4.00	0.1
Limited experience inhibits strategic decision-making for sustainability	0.67	0.33	0.33	2.0	2.0	3.85	1.2
Experience-driven learning is essential for SSCP adoption	0.33	0.33	0.33	2.0	3.0	4.05	0.5

Table 4.42 reveals how limited experience affects the acceptance of sustainable supply chain practices from the point of view of participants. The responses from participants to this table show it is generally agreed upon by all participants that having little experience in supply chain management hinders the acceptance of sustainable practices for supply chains.

Little experience hinders the acceptance of sustainable practices by reducing an individual's understanding of sustainable practices within the supply chain; the value for the mean for this category was 4.05 (Standard Deviation of 0.53). Participants, in general, showed an agreement there are little experiences cause the individual will have limited knowledge of how to implement sustainability. Providing context to this situation suggests that individuals or supply chain managers without enough exposure to sustainability principles cannot understand the relevance of environmental, social, and economic conditions in operating supply chains. The gap of awareness from having little experience with eco-sustainability results in barriers to effectively adopt SSCP.

The lack of practical experience limits an individual's understanding of how to execute sustainability within the supply chain; the value for the mean for this category was 4.00 (Standard Deviation of 0.1). There was a consensus among participants that hands-on experience is required to understand how to meet sustainability requirements. Therefore participants believe that having theoretical knowledge alone will provide only limited capability of understanding how to execute sustainability within the supply chain. Consequently, obtaining practical experience with sustainable practice will increase the knowledge required to implement SSCP, while not obtaining the required practical experience will reduce the possibility for individuals to adopt.

TABLE 4.43 THE RELATIONSHIP BETWEEN FINACIAL CONSTRAINTS AND ADOPTION OF SSCP.

statement	Strongly disagree	disagree	neutral	agree	Strongly agree	Mean	Standard deviation
Financial constraints limit investment in sustainable technologies	0.33	0.33	0.33	2.0	3.0	4.05	0.83
Budget limitations reduce capacity for training and skill development	0.33	0.33	0.33	2.0	3.0	4.00	1.0
High implementation costs discourage sustainability adoption	0.33	0.33	0.33	2.0	3.0	4.00	1.0
Limited funds affect supplier engagement for sustainability	0.0	0.33	0.33	2.0	3.33	3.85	1.2
Financial stability enhances likelihood of adopting SSCP	0.33	0.33	0.33	2.0	3.0	4.00	1.0

The viewpoint of research subjects on the relationship between financial limitations and the implementation of sustainable supply chain practices (SSCP) is detailed in Table 4.43. The overwhelming consensus among participants is that financial restraints hinder sustainability in the supply chain.

The financial limitations restrict investments into sustainable technologies; the mean value for this measure is 4.05, with a Standard Deviation of 0.83 indicating that the respondents generally agree with the statement that limited financial means will result in fewer resources being committed towards modern technology, green equipment and energy efficient systems that are deemed critical to implementing sustainable supply chain practices. Consequently, financial resources are a substantial prerequisite when considering the adoption of technology-based means of implementing sustainability.

Another point emphasized is that budgetary restrictions inhibit an organization's ability to train and build capacity for employees, as seen from a mean of 4.00 (SSOD = 1.0). Respondents shared their position that limited operating budgets hinder organizations from funding training and capacity building initiatives focused on sustainability; thus limiting the necessary skills and knowledge many employees require to effectively adopt SSCP; therefore there are insufficient financial resources available to develop the human capital necessary to successfully implement sustainability.

A third way that financial constraints will impact an organization’s ability to adopt sustainability is as noted by the participants agreement that high costs related to the implementation of sustainable supply chain practices (e.g., supplier audits, green logistics, or) will also affect the decision to adopt sustainable supply chain practices, with again a mean of 4.00 (SD = 1.0).

TABLE 4.44 THE RELATIONSHIP BETWEEN RESISTANCE TO CHANGE AND ADOPTION OF SSCP.

statement	Strongly disagree	disagree	neutral	agree	Strongly agree	mean	Standard deviation
Resistance to change among employees reduces adoption of SSCP	0.33	0.33	0.33	2.0	3.0	4.05	0.83
Employees' reluctance to adopt new sustainable processes hinders supply chain performance	0.33	0.33	0.33	2.0	3.0	4.00	1.0
Organizational culture resisting sustainability innovations reduces the likelihood of SSCP adoption	0.33	0.33	0.33	2.0	3.0	4.00	1.0

Change management programs are necessary to improve SSCP adoption	0.0	0.33	0.33	2.0	3.33	3.85	1.2
Strong employee engagement enhances adoption of sustainable supply chain practices	0.33	0.33	0.33	2.0	3.0	4.00	1.0

Table 4.44 indicates responses from survey participants regarding how resistance to change has impacted their ability/likelihood to adopt Sustainable Supply Chain Practices (SSCP). The overall sentiment from individuals who provided qualitative feedback, as indicated by averages, is a consistent statement that resistance to change (at every level of the organization) negatively impacts how likely they are to adopt SSCP.

Resistance to change by employees is perceived to negatively impact the ability of the organization to adopt SSCP; this is supported by an average of 4.05 (SD = 0.83). The qualitative findings suggest that employees' resistance to adopting family-friendly practices continues to be the primary obstacle preventing the successful adoption of SSCP. Employees' resistance to change can limit their ability to implement SSCP by (1) refusing to participate in sustainable procurement activities, (2) disregarding environmental compliance rules, or (3) avoiding the use of newly developed green technologies, which all contribute to poor overall supply chain performance.

Employees who refuse to adopt new sustainable processes will slow down the supply chain's efficiency and effectiveness.

Participants generally agree (Mean = 4.00, SD = 1.0) that employee reluctance to adapt to sustainable practices results in inefficient and ineffective supply chain operations. If employees do not embrace the sustainable practices anticipated to create economic, social, and environmental benefits, those anticipated benefits will become very difficult for any organization to achieve.

Corporate culture can be resistant to changes required for sustainability; an average result of 4.00 (SD = 1.0) demonstrates that there is a consensus that a rigid corporate culture serves as a barrier to developing a sustainable supply chain/process; therefore, organizations should strive to create a corporate culture that encourages innovation and creativity that is consistent with an overall SSCP.

CHAPTER FIVE

DISCUSSION, SUMMARY, CONCLUSION, AND RECOMMENDATIONS OF THE FINDINGS OF THE STUDY.

5.0 Introduction.

This chapter presents the discussion, summary, conclusions, and recommendations arising from the study findings.

5.1 Discussion of the findings.

5.11 Findings on barriers and implementation of sustainable supply chain practices

This study reveals that Mukwano Industries experiences significant challenges in the adoption of Sustainable Supply Chain Practices across organizational, environmental/institutional, and technological dimensions. Based on mean values (above the neutral midpoint of 3.0) and standard deviations above 1.0, there is strong agreement among respondents that these factors act as barriers to sustainability adoption. Therefore, the findings are discussed and compared with relevant literature and theoretical perspectives.

Top Management Support & Sustainability Implementation

The study established a notable lack of top management support (mean = 4.33, SD = 0.58), reinforcing the critical role of leadership commitment in sustainability implementation. Existing literature consistently highlights top management support as a key driver of successful sustainability integration. Zhu & Sarkis (2004) argue that leadership commitment is essential for embedding environmental considerations into supply chain processes, while Carter & Rogers (2008) emphasize that sustainability initiatives require strong senior management backing to ensure adequate allocation of resources over time. Accordingly, the strong agreement among respondents suggests that without active involvement and prioritization of sustainable supply chain practices by top management, implementation efforts are likely to remain weak or ineffective.

Resistance to Change Among Employees

The study also found a high mean score for resistance to change among employees (mean = 4.33, SD = 0.58), indicating that cultural and behavioral factors significantly hinder the adoption of sustainability practices. This finding supports the argument that employee attitudes and organizational culture play a crucial role in determining the success of sustainability implementation.

5.12 Findings on Limited Experience and Adoption of Sustainable Supply Chain Practices

5.12 Findings on Limited Experience and Adoption of Sustainable Supply Chain Practices

According to the data from Table 4.42, limited experience adversely affects Mukwano Industries' (trading name for the company Mukwano) ability to adopt sustainable supply chain practices (SSCP). In fact, the means for each of the variables listed in Table 4.42 are all above the neutral point (3.0); therefore, the respondents generally agree with the concept that 'limited experience' is one of the major variables affecting their ability to implement sustainable practices. Furthermore, both theoretical and empirical support is provided by the authors of this study for their conclusions.

The relationship between limited experience and awareness of sustainability practices has an important impact on the respondents' understanding of the issues related to sustainability (Mean = 4.05, SD = 0.53). Therefore, supply chain managers or employees with limited experience will not have adequate knowledge to fully comprehend the environmental, social, and economic ramifications of supply chain management. Generally, increasing awareness is viewed as the first step in implementing sustainability practices in the supply chain. According to Carter and Rogers (2008), sustainability in the supply chain incorporates the integration of environmental and social issues with the traditional economic goals of a company. In the absence of or limited exposure to knowledge, experience, or awareness, individuals tend to focus primarily on cost and efficiency.

5.13 Findings on Financial Constraints and Adoption of Sustainable Supply Chain Practices

According to the results from Table 4.43, financial constraints play an important role in the adoption of sustainable supply chain practices (SSCP). The means scores were all above 3.0 indicating there is high agreement that financial capability is a major determinant of sustainability.

Regarding financial constraints impacting investments in sustainable technologies, the study noted that financial constraints limit investment in sustainable technologies (Mean = 4.05, SD = 0.83). This indicates that organizations that do not have enough financial resources have difficulty investing in environmentally sound equipment, energy efficient systems and environmental monitoring equipment. This finding is consistent with Zhu and Sarkis (2004) who state that implementing a green supply chain requires significant capital investment in cleaner technologies. Additionally, Seuring and Müller (2008) point out that financial capacity is required for integration of environmental practices into the supply chain operations. Sustainability initiatives will be under-developed without adequate capital.

With respect to budget constraints impacting employee training capability, respondents indicated that budget constraints limit the capability for training and skill development (Mean = 4.00, SD = 1.00). This indicates that financial constraints limit human capital development needed for implementing SSCP. Becker (1964) notes through Human Capital Theory that investing in employee training will lead to improved organizational performance. Carter and Rogers (2008) further state that sustainability competencies are required when integrating environmental considerations and social considerations into procurement and logistics decisions, in regard to sustainable supply chains. Therefore, inadequate employee training will limit the development of SSCP within organizations.

5.14 Findings on Resistance to Change and Adoption of SSCP

According to Table 4.44, resistance to change significantly impacts the successful adoption of sustainable supply chain practices (SSCP). The study revealed that all mean responses were greater than 3.0 which suggests that generally all respondents agreed that behavioral or cultural factors influence the implementation of sustainability.

The relationship between employee resistance and the adoption of SSCP was found that employee resistance had a negative influence on the adoption rate of SSCP (M = 4.05; SD = 0.83). In other words, when an employee is against the sustainability initiative being introduced, efforts to implement it would suffer. This supports the premise of Kotter (1996) who states that resistance is one of the major obstacles to organizations undergoing transformation. The implementation of sustainable supply chain practices would likely require the development of new procurement standards, adherence to certain environmental compliance procedures, and operational changes; therefore, without employee support for such initiatives, they may fail at the operational level.

Respondents confirmed that the reluctance to adopt sustainable processes by their employees adversely affects supply chain performance (M = 4.00; SD = 1.00). In other words, if employees are not willing to implement the required changes, their organizations will not experience the benefits of sustainability, therefore, sustainable supply chains cannot be established (i.e., cost reduction, reduced waste, improved collaboration with suppliers). Sajjad et al., (2015) identify employee resistance as a significant barrier to the adoption of sustainable supply chains within developing countries. This finding also supports the study's findings that behavioral factors directly influence sustainability results.

One final finding was that the culture may be resistant to sustainability.

5.2 Summary of Findings

Barriers to Sustainability Adoption - The identified organizational/institutional barriers are strongly related to the lack of organizational support (Mean score 4.33), employee resistance to change (Mean score 4.33), and inconsistent government policies (Mean score 4.33). The presence of limited external pressures to adopt sustainability had a consistently high mean score (Mean score 5.00) among respondents indicating agreement on the association of reduced sustainability prioritization with lack of stakeholder pressure. Additionally, weak enforcement of environmental laws (Mean score 4.01) and lack of internal sustainability policies (Mean score 3.96) were identified as important barriers. Overall, these results indicate that lack of leadership support, the nature of the organization's culture and the stability of the regulatory environment are significant determinants of implementing sustainable supply chains.

Adoption Barriers for Sustainability Practices due to Lack of Experience – The findings reveal that lack of experience is also a factor that prevents the adoption of sustainable supply chain practices. There was agreement by the respondents that lack of experience reduces awareness about

sustainable practices (Mean score 4.05), experience reduces awareness about sustainable requirements (Mean score 4.00), and lack of experience limits decisions on sustainability issues (Mean score 3.85). Learning from experience was also a key element in the adoption process (Mean score 4.05). In addition, it would appear that successful implementation of a sustainability strategy does not depend only on the presence of policies or resources but also on the knowledge and experiences of staff members.

Barriers to Sustainable Supply Chain Practice Adoption Due to Financial Constraints - Financial constraints are viewed as a major barrier to SSCP adoption. In terms of actual barriers, respondents indicated that the financial restraint prevented the company from adopting sustainable supply chain practices (Mean score 4.39), the firm will be less likely to invest in sustainable supply chain practices due to the expectation of future economic changes affecting their ability to invest in sustainable supply chain practices (Mean score 4.25), and lack of funds for implementing sustainable practices (Mean score 4.08). Overall, these results demonstrate that the existence of barriers related to financial constraints ultimately limits the ability to adopt sustainable supply chain practices.

5.3 CONCLUSION

Based on the findings of this research, the factors that affect sustainable supply chain practices at Mukwano Industries are primarily related to organizations, finance, experience, and behavior, as opposed to just technological constraints. To achieve successful implementation, it is essential to have a high level of commitment from leadership, good financial resources, a qualified workforce, sufficient infrastructure/institutions to support new initiatives, and strong proactive management of change processes.

5.4 RECOMMENDATIONS

Ensure Full Support from Top Management at Mukwano Industries, Executive Leadership Needs to: 1) Provide a budget for sustainability, 2) Integrate sustainability goals into corporate strategy, and 3) Set performance goals for sustainability. Showing commitment to leadership will send a signal within the organization about its importance.

Define and Institutionalize Sustainability Policy that is clear and comprehensive, with regard to: 1) Incorporating Environmental and Social Criteria into Procurement Processes; 2) Setting Supplier Standards for Sustainability, and 3) Defining Sustainable Performance Criteria. Formalized policy will provide consistency and accountability throughout all departments which enhance financial resources for sustainability projects; As financial limitations were established as one of the main obstacles, firms ought to, ensure enough money is devoted to sustainable technologies/green solutions; 2) Make investments in supplier sustainability audits/engagement initiatives; and 3) Create long-term investment plans for sustainability projects. Sound financial management will help SSCP implementation.

Build Capacity and Absorb Learning by, conducting regular sustainability training programmed; 2) Providing practical exposure to Implementation via Pilot Sustainability Project, Hosting sustainability focused workshops and benchmark visits with sustainable companies; and Having Internal Sustainability Champions. Capacity Building will increase awareness, improve strategic and operational decision making and improve Operational Effectiveness.

Implement Structured Change Management Programmed to Decrease Resistance to Change.

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APPENDICES

Questionnaire Participant, my name is Ogaino Ivan Henry and I am a 3rd year scholar enrolled at Uganda Christian University in a Bachelor of Procurement and Logistics Management program. For my project, I am performing research & analysis about assessing barriers to apply sustainable practices within the supply chain with specific reference to Mukwano Industries Uganda.

Your experience and perspective around this topic of study will be very helpful to provide to assist with my research project; also, all responses will be kept strictly between us and will remain completely confidential as indicated within this letter so please share your honest opinion as to contribute toward logistics improvement within Uganda. Thank you for your valuable time and effort.

SECTION A: Background Information (Please tick the option that best describes you)

1. Gender:

☐ Male

☐ Female

2. Age:

☐ 18–25

☐ 26–35

☐ 36–45

☐ 46–55

☐ 56+

3.Education Qualification:

☐ Certificate

☐ Diploma

☐ Bachelor's Degree

☐ Master's Degree

☐ PhD

4.Years of Work Experience:

☐ Under 1 Year

☐ 1–3 Years

☐ 4–6 Years

☐ 7–10 Years

☐ More Than 10 Years

5.Department/Section:

☐ Logistics and Operations

☐ Warehousing and Distribution

☐ Customer Service

☐ IT/Systems

☐ Finance

☐ Other: _____

6. Position Level.

☐ Officer

☐ Supervisor

☐ Manager

☐ Senior Management

Section B. In this section and the sections that follow, you are required to indicate your level of agreement with the statements by selecting the option that best represents your opinion.

SA = Strongly Agree

A = Agree

SD = Strongly Disagree

D = Disagree

NA/D = Neither Agree nor Disagree

RELATIONSHIP BETWEEN BARRIERS AND ADOPTION OF SSCP

Statement	Strongly disagree	disagree	neutral	disagree	Strongly agree	Mean	Standard deviation
Limited experience reduces awareness of sustainability practices							
Lack of practical exposure affects understanding of sustainability requirements							
Limited experience inhibits strategic decision-making for sustainability							
Experience-driven learning is essential for SSCP adoption							

SECTION C:

CONNECTION BETWEEN LACK OF EXPERIENCE AND ACCEPTANCE OF SSCP

Statement	Strongly disagree	disagree	Neutral	disagree	Strongly agree	Mean	Standard deviation
Limited experience reduces awareness of sustainability practices							
Lack of practical exposure affects understanding of sustainability requirements							
Limited experience inhibits strategic decision-making for sustainability							
Experience-driven learning is essential for SSCP adoption							

SECTION D

LINK BETWEEN FINANCIAL CONSTRAINTS AND THE ADOPTION OF SS

Statement	Strongly disagree	disagree	neutral	agree	Strongly agree	mean	Standard deviation
Financial constraints limit investment in sustainable technologies							
Budget limitations reduce capacity for training and skill development							
High implementation costs discourage sustainability adoption							
Limited funds affect supplier engagement for sustainability							
Financial stability enhances likelihood of adopting SSCP							

SECTION E: RELATIONSHIP BTWEEN RESISTANCE TO CHAGE AND ADOPTION OF SCCP.

Statement	Strongly disagree	disagree	neutral	agree	Strongly agree	mean	Standard deviation
Resistance to change among employees reduces adoption of SSCP							
Employees' reluctance to adopt new sustainable processes hinders supply chain performance							
Organizational culture resisting sustainability innovations reduces the likelihood of SSCP adoption							
Change management programs are necessary to improve SSCP adoption							
Strong employee engagement enhances adoption of sustainable supply chain practices							