

BINDURA UNIVERSITY OF SCIENCE EDUCATION
FACULTY OF SOCIAL SCIENCES AND HUMANITIES
DEPARTMENT OF SOCIAL WORK



TOPIC

Assessing the Adoption and Challenges of Green Procurement in Zimbabwe's Supply Chain: A Case Study of Delta Corporation (2021-2025)

BY

NYASHA BOKA B213369B

SUPERVISOR: Mrs Dube

**A DISSERTATION SUBMITTED IN PARTIAL FULFILLMENT OF THE
REQUIREMENTS OF THE MASTER OF SCIENCE IN PURCHASING AND CHAIN
MANAGEMENT OF BINDURA UNIVERSITY OF SCIENCE EDUCATION**

June 2025

Release form

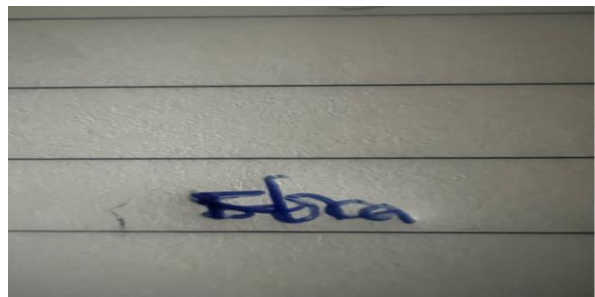
Name of the Author : **NYASHA BOKA**

Registration number : **B213369B**

Project Title: Assessing the Adoption and Challenges of Green Procurement in Zimbabwe's Supply Chain: A Case Study of Delta Corporation (2021-2025)

The BUSE library is hereby authorized to print one-off copies of this project and to distribute or sell such copies solely for scholarly or scientific research purposes. Without the author's permission, neither the project nor lengthy excerpts from it may be printed or otherwise reproduced.

PROGRAM: PURCHASING AND SUPPLY CHAIN MANAGEMENT



SIGNED (STUDENT):
.....

PERMANENT ADDRESS: 765 chipembere street Chipadze

Declaration Form

I, NYASHA BOKA , hereby certify that this project is a unique work of mine that has never been published or presented to another college or university.



Signed..... Date.....15/06/2025.

Registration numberB213369B.....

Physical address.....765 chipembere street Chipadze.....

Dedications

To my mother Bertha Ajida , who through their tenacity faith and commitment to my study, enabled me to reach this level of education. Finally I owe you a debt of gratitude to my family and friends for there continuous support and constant encouragement in my pursuit of higher education.

Abstract

Green procurement are now at a forefront of supply chain management due to the growing emphasis of sustainability on the world wide scale. Green procurement's become a key tactic as a business all over the world look to lessen their environmental effect and enhance corporate social responsibility . Despite development around the world green procurement is still not widely used in Africa especially in Zimbabwe. This study uses Delta Corporation , the top beverage maker in Zimbabwe, as a case study to examine the adoption and difficulties of green procurement within the supply chain industry . The research investigates the extent to which Delta Corporation has adopted green procurement practices between 2021 and 2025, identifies the key challenges faced, and proposes strategies to enhance sustainability in the broader Zimbabwean supply chain context. Drawing on both primary and secondary data, the study is anchored in the understanding that while some progress has been made, numerous barriers—such as lack of awareness, high implementation costs, and weak regulatory frameworks—continue to hinder widespread adoption. The research also contextualizes Zimbabwe's experience within the broader African and Southern African Development Community (SADC) regions, where similar challenges persist. However, some organizations have demonstrated notable improvements in environmental performance and brand reputation through green procurement initiatives. Delta Corporation's sustainability initiatives serve as a lens through which the practical realities, limitations, and potential for green procurement in Zimbabwe are examined. The findings of this study are expected to contribute to the growing body of knowledge on sustainable supply chain practices in developing economies. The study offers policy recommendations and practical strategies for businesses and government stakeholders aiming to promote green procurement. Ultimately, the research highlights the importance of integrating environmental considerations into procurement decisions as a pathway toward sustainable development in Zimbabwe.

Acknowledgements

First and foremost, I want to express my gratitude to the Lord Almighty for the grace and strength he has bestowed upon me thus far. I would like to thank my supervisor, Mrs Dube, for her unwavering support, guidance, and motivation in the development of this project, as well as the

Bindura University of Science and Education for providing me with this exposure to my supply chain management field, and the staff members and the Department of Supply Chain Management for providing me with real-world work experience. I was able to learn and grasp knowledge, as well as write this dissertation, thanks to their competent coaching.

Table of Contents

Release form 2

Approval form **Error! Bookmark not defined.**

Declaration Form 4

Dedications	5
Abstract.....	6
Acknowledgements	6
CHAPTER ONE.....	Error! Bookmark not defined.
1.0 Introduction.....	Error! Bookmark not defined.
1.1 Background to the Study	Error! Bookmark not defined.
1.2 Statement of the problem	15
1.3 Purpose of the study	15
1.4 Research objectives.....	16
1.5 Research question	17
1.6 Significance of the Study	Error! Bookmark not defined.
1.7 Assumptions of the study ..	17
1.8Delimitations of the Study.....	18
. 1.9Limitations of the Study.....	18
1.10 Definition of terms.....	19
1.10.1 Green Procurement.....	19
1.10.2•Sustainable Supply Chain Management.....	19
1.10.3•Corporate Social Responsibility (CSR).....	19
1.10.4•Environmental Sustainability.....	19
.1.10.5Delta Corporation.....	19
1.10.6•SADC (Southern African Development Community).....	19
1.11 Summary	20
CHAPTER TWO.....	21
LITERATURE REVIEW.....	21
2.0 Introduction	21
2.1 Theoretical Review	21
2.1.1 Resources based theory.....	21

2.1.2 Stakeholder theory.....	22
2.2 Conceptual Framework.....	23
2.2.1 Green Procurement Adoption.....	24
2.2.2 Impact of Green Procurement on Supply Chain Efficiency and Environmental Sustainability.....	25
2.2.3 Strategies for Enhancing Green Procurement Adoption in Supply Chains.....	26
2.3 Empirical Review.....	27
2.4 Summary.....	28
CHAPTER THREE.....	29
METHODOLOGY.....	29
3.0 Introduction.....	29
3.1 Research Design.....	29
3.2 Data Collection Methods.....	29
3.2.1 Primary Data.....	30
3.2.2 Secondary Data.....	30
3.3 Sampling technique.....	31
3.4 Data analytics.....	31
3.5 Ethical consideration.....	34
CHAPTER FOUR.....	36
4.0 Introduction.....	36
4.1 Response rate.....	36
4.3 Demographic Characteristics of Respondents.....	36
4.3.1 Age.....	36
4.3.2 Position.....	35
4.3.3 Experience.....	37
4.4 Extent of Green Procurement Adoption.....	38
4.5 Impact of Green Procurement on Supply Chain Efficiency.....	38
4.6. Challenge in implementing green procurement practice.....	39
4.7 Qualitative Findings.....	41

4.7.1 Motivations for Adopting Green Procurement Practices.....	41
4.7.2 Challenges in Implementing Green Procurement Practices.....	43
4.7.3 Strategies in implementing green procurement	45
4.8 Discussion of findings	47
4.8.1 Demographic	47
4.8.2 Extent of Green Procurement Adoption	48
4.8.3 The challenges in implementing green procurement practices at Delta Corporation	49
4.9 Conclusion.....	50
5.0 CHAPTER FIVE	51
5.1 Introduction	51
5.2 Summary of findings	51
5.2.1 Extent of Green Procurement Adoption.....	51
5.2.2 Challenges Hindering Green Procurement Implementation.....	52
5.2.3 Impact of Green Procurement on Supply Chain Efficiency and Environmental Sustainability.....	52
5.2.4 Strategies to Enhance Green Procurement Adoption.....	52
5.3 Conclusions.....	53
5.4 Recommendations	54
5.5 Areas for future research.....	55
5.6 Chapter summary	56
5.7 Appendices	58
5.8 References.....	62

List of Table

4.3.1 Age.....	36
4.3.2 Position	37
4.3.3 Experience	37

4.4 Extent of green procurement adoption	38
4.5 Impact of Green Procurement on Supply Chain Efficiency.....	39
4.6 challenges in implementing green procurement	40

List of Figures

2.2 Figure 1 conceptual framework	23
---	----

CHAPTER ONE

INTRODUCTION

1.0 Introduction

This chapter highlights the study's opening statements by outlining the problems that the research is attempting to solve and establishing the research's context. It delves into the study's background, problem statement, purpose of the study, research questions, statement of hypothesis and significance of the study. At the end of the chapter there is the study's assumptions, delimitations and limitations. This chapter also lays a groundwork for chapter two which focuses on the literature review and the conceptual framework of the research topic

The adoption of green procurement practices has become a critical aspect of sustainable supply chain management globally. Companies are increasingly recognizing the importance of integrating environmental considerations into their purchasing decisions to minimize their environmental

footprint and improve their corporate social responsibility. This study seeks to assess the adoption and challenges of green procurement in Zimbabwe's supply chain, using Delta Corporation as a case study.

Globally, the importance of sustainable supply chain management has been recognized as a critical aspect of reducing environmental impact and improving corporate social responsibility. According to a study by Govindan et al. (2019), green procurement is a critical aspect of sustainable supply chain management, and companies that adopt green procurement practices can reduce their environmental footprint and improve their corporate social responsibility. Many companies around the world have implemented green procurement practices, and have reported benefits such as cost savings, improved brand reputation, and reduced environmental impact (Kumar et al., 2018). The United Nations Environment Programme (UNEP) has also emphasized the importance of sustainable procurement practices, and has launched initiatives to promote sustainable procurement globally.

1.1 Background of the Study

In Africa, the adoption of green procurement practices is still in its infancy, and many companies are yet to fully integrate environmental considerations into their purchasing decisions. According to a study by Amankwah-Amoah et al. (2020), African companies face significant challenges in adopting green procurement practices, including lack of awareness, limited regulatory enforcement, and high costs. However, some African companies have made significant strides in adopting sustainable procurement practices, and have reported benefits such as improved brand reputation and reduced environmental impact (Mzembe et al., 2021). The African Union's Agenda 2063 also emphasizes the importance of sustainable development, and highlights the need for African countries to adopt sustainable procurement practices.

In the Southern African Development Community (SADC) region, the adoption of green procurement practices is also limited. According to a study by Mtegha et al. (2021), SADC countries face significant challenges in adopting green procurement practices, including lack of awareness, limited regulatory enforcement, and high costs. However, some SADC countries have

made significant strides in adopting sustainable procurement practices, and have reported benefits such as improved brand reputation and reduced environmental impact. The SADC Protocol on Environment also emphasizes the importance of sustainable development, and highlights the need for SADC countries to adopt sustainable procurement practices (SADC, 2019).

In Zimbabwe, the adoption of green procurement practices remains limited, and many companies are yet to fully integrate environmental considerations into their purchasing decisions. According to a study by Muposhi et al. (2022), Zimbabwean companies face significant challenges in adopting green procurement practices, including lack of awareness, limited regulatory enforcement, and high costs. However, some Zimbabwean companies have made significant strides in adopting sustainable procurement practices, and have reported benefits such as improved brand reputation and reduced environmental impact. The Zimbabwean government has also emphasized the importance of sustainable development, and has launched initiatives to promote sustainable procurement practices (Chikozho, 2023).

Delta Corporation, Zimbabwe's leading beverage manufacturer, plays a key role in the country's supply chain and has implemented various sustainability initiatives. Despite these efforts, challenges remain in fully integrating green procurement within its operations. According to a study by Makate et al. (2024), companies in Zimbabwe's manufacturing sector face significant challenges in adopting green procurement practices, including lack of awareness, limited regulatory enforcement, and high costs. This study seeks to assess the adoption and challenges of green procurement at Delta Corporation from 2021 to 2025, and to propose strategies for improving sustainability in Zimbabwe's supply chain sector. By assessing the adoption of green procurement at Delta Corporation, this study aims to provide insights into the challenges and opportunities for improving sustainability in Zimbabwe's supply chain sector, and to contribute to the development of sustainable procurement practices in the country.

1.2 Problem statement

The adoption of green procurement practices is critical for reducing environmental impact and promoting sustainable development in supply chains. However, despite the growing importance of sustainability, many companies in Zimbabwe's supply chain sector continue to face significant challenges in adopting green procurement practices. Delta Corporation, Zimbabwe's leading

beverage manufacturer, has implemented various sustainability initiatives, but the extent to which green procurement practices have been adopted within its operations remains unclear. The lack of awareness, limited regulatory enforcement, and high costs associated with green procurement practices are significant barriers that hinder the adoption of sustainable procurement practices in Zimbabwe's supply chain sector. Furthermore, the environmental impact of unsustainable procurement practices in Zimbabwe's supply chain sector is significant, with deforestation, pollution, and waste management being major concerns. Therefore, this study seeks to assess the adoption and challenges of green procurement practices at Delta Corporation, with the aim of identifying strategies for improving sustainability in Zimbabwe's supply chain sector and contributing to the development of sustainable procurement practices in the country.

1.3 Purpose of the Study

The primary purpose of this study is to assess the adoption and challenges of green procurement practices at Delta Corporation, a leading beverage manufacturer in Zimbabwe. As sustainability becomes an increasingly critical component of global and regional supply chain strategies, it is imperative for companies to integrate environmental considerations into their procurement processes. This research seeks to evaluate how far Delta Corporation has embraced green procurement practices between 2021 and 2025, and to understand the barriers that hinder the effective implementation of such practices within its supply chain operations.

Given Zimbabwe's growing environmental concerns—such as pollution, deforestation, and poor waste management—this study aims to contribute to sustainable development efforts by identifying the specific challenges Delta Corporation faces in adopting environmentally friendly procurement strategies. It also aims to explore the internal and external factors, including lack of awareness, limited regulatory enforcement, and cost implications, that affect the company's ability to fully integrate green procurement into its business model.

In doing so, the study intends not only to evaluate the current status of green procurement at Delta Corporation but also to propose viable strategies for enhancing its adoption. By doing this, it seeks to generate insights that can inform policy makers, industry stakeholders, and other companies in Zimbabwe's supply chain sector on best practices and practical steps towards more sustainable

procurement systems. Ultimately, the research contributes to the broader agenda of promoting corporate social responsibility and sustainable development in Zimbabwe and the Southern African region.

1.4 Research Objectives

1. To assess the extent of green procurement adoption at Delta Corporation from 2021 to 2025.
2. To identify the challenges that hinder green procurement implementation in Zimbabwe at delta Zimbabwe
3. To examine the impact of green procurement on supply chain efficiency and environmental sustainability.
4. To propose strategies to enhance the adoption of green procurement in Zimbabwe's supply chain.

1.5 Research Questions

1. What is the level of adoption of green procurement at Delta Corporation between 2021 and 2025?
2. What are the key challenges hindering green procurement in Zimbabwe's supply chain at delta?
3. How has green procurement impacted Delta Corporation's supply chain and sustainability efforts?
4. What strategies can be implemented to enhance green procurement adoption in Zimbabwe?

1.6 Significance of the Study

This study is significant for businesses, policymakers, and environmental advocates. It will provide insights into the current state of green procurement in Zimbabwe, helping businesses develop effective sustainability strategies. Policymakers can use the findings to strengthen regulations that promote green procurement. Additionally, the study will contribute to the growing body of knowledge on sustainable supply chain management in developing economies.

1.7 Assumption of the Study

- It is assumed that all respondents provided honest and accurate responses during interviews and surveys, minimizing the impact of social desirability bias.
- It is assumed that no significant, unpredictable changes occurred in the company's structure or procurement policies during the data collection period.
- The period 2021–2025 is assumed to be representative enough to assess current trends and practices in green procurement, despite the absence of long-term data.
- It is assumed that in-depth analysis of a single company (Delta Corporation) provides valid insights into the opportunities and challenges of green procurement in similar manufacturing settings.

1.8 Delimitations of the Study

This study is also defined by deliberate boundaries set by the researcher to maintain a focused and manageable scope . The research is limited to Delta Corporation and does not include other manufacturing firms in Zimbabwe, even though they may face similar challenges with green procurement. The study is confined to operations within Zimbabwe, excluding Delta Corporation's activities in other countries, if any. The research strictly focuses on green procurement, excluding broader sustainability themes such as corporate social responsibility programs unrelated to procurement. The primary data collection is limited to employees and managers directly involved in procurement and sustainability roles, excluding suppliers and customers unless indirectly referenced through policy or performance reviews.

1.9 Limitations of the Study

This study acknowledges several limitations that may influence the interpretation and generalizability of its findings:

Limited access to internal procurement and sustainability data from Delta Corporation may restrict the depth of analysis, particularly regarding financial metrics and supplier-specific practices.

The study focuses on the period from 2021 to 2025. As such, it may not capture long-term trends or changes occurring outside this window, especially those influenced by future environmental policies or technological advancements.

Respondent Bias is an limitation to the study. Data collected through interviews or surveys may be subject to bias, as employees and stakeholders could provide socially desirable responses rather than accurate reflections of practices.

External factors should be considered. Economic instability, policy changes, and supply chain disruptions in Zimbabwe during the study period may have influenced the implementation of green procurement in ways that are difficult to isolate or quantify.

Generalizability is another limitation of the study. As a case study focused on Delta Corporation, the findings may not be fully generalizable to other companies or industries within Zimbabwe or across other developing nations.

1.10 Definition of terms

1.10.1 Green Procurement:

The process of purchasing goods and services that have a reduced impact on the environment and human health throughout their life cycle, including raw material sourcing, production, use, and disposal.

1.10.2 Sustainable Supply Chain Management

A strategic approach to managing supply chains that incorporates environmental, social, and economic sustainability into business operations.

1.10.3 Corporate Social Responsibility (CSR)

A business model in which companies incorporate social and environmental concerns in their operations and interactions with stakeholders.

1.10.4 Environmental Sustainability

The responsible interaction with the environment to avoid depletion or degradation of natural resources, ensuring long-term ecological balance.

1.10.5 Delta Corporation

A leading beverage manufacturing company in Zimbabwe, known for producing and distributing alcoholic and non-alcoholic beverages.

1.10.6 SADC (Southern African Development Community)

A regional organization aimed at promoting sustainable and equitable economic growth and socio-economic development among its member states.

1.11 Summary

Chapter 1 introduces the concept of green procurement, emphasizing its growing importance in enhancing environmental sustainability and corporate responsibility. It outlines how, despite global advancements in sustainable supply chain practices, Zimbabwe's progress remains limited due to economic, regulatory, and awareness challenges. The chapter focuses on Delta Corporation as a case study to explore the extent of green procurement adoption between 2021 and 2025. It highlights the company's sustainability initiatives while pointing out the barriers hindering full integration of environmentally responsible procurement practices. The problem statement identifies a gap in the effective implementation of green procurement in Zimbabwe, particularly within major manufacturing firms like Delta Corporation. The research objectives and questions aim to evaluate adoption levels, identify challenges, assess impacts, and recommend strategies for improvement. Finally, the chapter underlines the study's significance to various stakeholders, including businesses, policymakers, and environmental advocates, while contributing to the broader discourse on sustainable development in developing countries.

CHAPTER TWO

2.0 LITERATURE REVIEW

2.1 Theoretical Framework

The theoretical framework for this study on assessing the adoption and challenges of green procurement practices at Delta Corporation is grounded in two key theories: the Resource-Based View (RBV) theory and the Stakeholder Theory. The RBV theory, which emphasizes the importance of internal resources and capabilities in achieving sustainable competitive advantage, provides a foundation for understanding how Delta Corporation's resources and capabilities influence its adoption of green procurement practices (Barney, 1991). Meanwhile, the Stakeholder Theory, which highlights the importance of considering the interests and expectations of various stakeholders, including customers, employees, suppliers, and the environment, provides a framework for analyzing the external pressures and expectations that drive Delta Corporation's adoption of green procurement practices (Freeman, 1984). By integrating these two theories, this study aims to provide a comprehensive understanding of the factors that influence Delta Corporation's adoption of green procurement practices and the challenges it faces in implementing sustainable procurement practices.

2.1.1 Resource based theory

The Resource-Based View (RBV) theory is a strategic management framework that emphasizes the importance of internal resources and capabilities in achieving sustainable competitive advantage. According to RBV, companies can gain a competitive advantage by leveraging their unique resources and capabilities that are valuable, rare, and difficult to imitate (Barney, 1991). These resources can be tangible, such as financial assets, or intangible, such as knowledge, skills, and expertise. RBV suggests that companies should focus on developing and leveraging their internal resources and capabilities to create sustainable competitive advantage, rather than relying solely on external factors such as market trends or competitor actions. In the context of green procurement, RBV can help explain how companies like Delta Corporation can leverage their internal resources and capabilities to adopt sustainable procurement practices that reduce environmental impact and improve corporate social responsibility. For example, a company's expertise in sustainable supply chain management, its relationships with environmentally responsible suppliers, and its ability to innovate and adapt to changing environmental regulations can all be considered valuable resources that contribute to its competitive advantage.

The RBV theory has been widely applied in various fields of management, including strategic management, marketing, and operations management. According to a study by Hart (1995), RBV can be applied to environmental management, where companies can leverage their internal resources and capabilities to develop sustainable practices that reduce environmental impact. Another study by Sharma and Vredenburg (1998) found that companies that develop capabilities in environmental management can gain a competitive advantage through cost savings, improved reputation, and increased innovation. In the context of green procurement, RBV can help companies like Delta Corporation identify the internal resources and capabilities that are necessary for adopting sustainable procurement practices, and develop strategies to leverage these resources to achieve sustainable competitive advantage. By applying RBV, companies can move beyond mere compliance with environmental regulations and develop proactive strategies for sustainability that drive long-term success.

2.1.2 Stakeholder theory

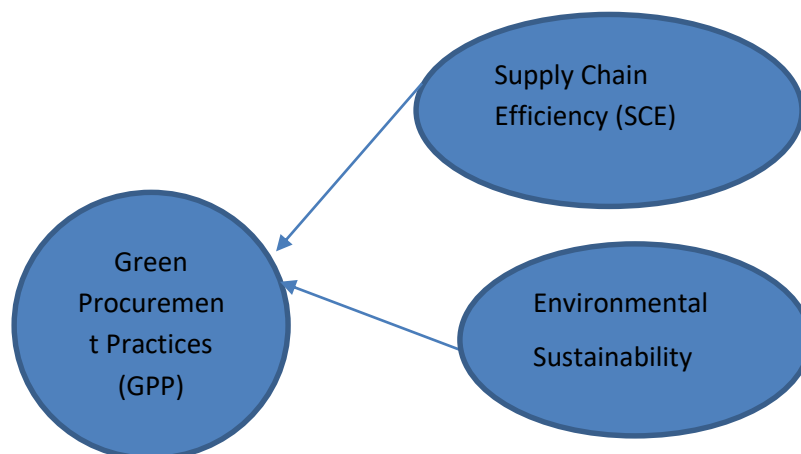
The Stakeholder Theory is a management frame that emphasizes the significance of considering the interests and prospects of colorful stakeholders, including customers, workers, suppliers, and

the terrain, in organizational decision- timber. According to this proposition, companies have a responsibility to multiple stakeholders, not just shareholders, and should prioritize their interests and prospects in strategic decision- making(Freeman, 1984). Stakeholder Theory recognizes that companies are part of a broader social and environmental environment, and that their conduct have impacts beyond just their fiscal performance. In the environment of green procurement, Stakeholder Theory is particularly applicable, as companies like Delta Corporation must consider the prospects of colorful stakeholders, including guests, workers, suppliers, and the terrain, in espousing sustainable procurement practices. For illustration, guests may anticipate companies to prioritize environmental sustainability, while workers may anticipate companies to prioritize their health and safety.

The Stakeholder Theory has been extensively applied in colorful fields of operation, including sustainability and commercial social responsibility. According to a study by Donaldson and Preston(1995), Stakeholder Theory provides a frame for understanding the connections between companies and their stakeholders, and for relating the interests and prospects of colorful stakeholder groups. Another study by Henriques and Sadorsky(1999) set up that companies that prioritize stakeholder engagement and sustainability are more likely to borrow environmentally responsible practices. In the environment of green procurement, Stakeholder Theory can help companies like Delta Corporation understand the prospects of colorful stakeholders and prioritize their interests in espousing sustainable procurement practices. By applying Stakeholder Theory, companies can develop strategies that balance the interests of multiple stakeholders, including guests, workers, suppliers, and the terrain, and achieve long- term sustainability and success.

2.2 Conceptual Framework

2.2 Figure 1



This conceptual framework model illustrates the relationships between green procurement practices, supply chain efficiency, environmental sustainability, challenges to implementation, organizational factors, and proposed strategies. It provides a basis for assessing the adoption of green procurement practices at Delta Corporation and identifying strategies to enhance their adoption in Zimbabwe's supply chain.

2.2.1 Green Procurement Adoption

The adoption of green procurement practices is a critical aspect of sustainable supply chain operation, and companies that borrow these practices can achieve significant benefits, including cost savings, bettered brand character, and reduced environmental impact(Govindan et al., 2019). Green procurement practices involve the purchase of goods and services that have a reduced environmental impact, and companies can borrow colorful strategies to apply these practices, including sustainable sourcing, eco-friendly packaging, and energy-effective logistics. The extent of green procurement relinquishment can vary significantly between companies and diligence, and colorful motorists and walls can impact the relinquishment of these practices. For illustration, companies may be driven to borrow green procurement practices by nonsupervisory conditions, client prospects, or cost savings openings, while walls to relinquishment may include lack of mindfulness, high costs, or limited stakeholder engagement.

The impact of green procurement on supply chain effectiveness and environmental sustainability can be significant, and companies that borrow these practices can achieve colorful benefits, including reduced waste, bettered brand character, and cost savings(Kumar et al., 2018). Green procurement practices can also contribute to environmental sustainability by reducing hothouse gas emigrations, conserving natural coffers, and minimizing waste(Zhu et al., 2013). Companies that borrow green procurement practices can also ameliorate their supply chain effectiveness by reducing lead times, perfecting quality, and adding client satisfaction. likewise, green procurement practices can contribute to a company's long- term sustainability and success by perfecting its brand character, reducing nonsupervisory pitfalls, and adding stakeholder engagement. Overall, the relinquishment of green procurement practices is a critical aspect of sustainable supply chain operation, and companies that borrow these practices can achieve significant benefits and contribute to environmental sustainability.

2.2.2 Impact of Green Procurement on Supply Chain Efficiency and Environmental Sustainability

The impact of green procurement on supply chain effectiveness can be significant, and companies that borrow green procurement practices can achieve colorful benefits, including cost savings, reduced waste, and bettered brand character. According to a study by Govindan et al.(2019), green procurement practices can help companies reduce their costs by minimizing waste, reducing energy consumption, and perfecting supply chain effectiveness. Green procurement practices can also contribute to advanced brand character by demonstrating a company's commitment to environmental sustainability and social responsibility. For illustration, companies that borrow sustainable sourcing practices can ameliorate their brand character by promoting their commitment to environmental sustainability and social responsibility. also, green procurement practices can help companies reduce their lead times and ameliorate their quality by sourcing accoutrements and products from suppliers that cleave to environmental and social norms.

The impact of green procurement on environmental sustainability is also significant, and companies that borrow green procurement practices can contribute to reduced hothouse gas emigrations, conservation of natural coffers, and minimization of waste. According to a study by Zhu et al.(2013), green procurement practices can help companies reduce their environmental

impact by sourcing accoutrements and products from suppliers that cleave to environmental norms. Green procurement practices can also contribute to environmental sustainability by promoting the use of renewable energy, reducing waste, and minimizing the use of dangerous accoutrements . A study by Kumar et al.(2018) set up that companies that borrow green procurement practices can achieve significant environmental benefits, including reduced hothouse gas emigrations, conservation of natural coffers, and minimization of waste. Overall, the relinquishment of green procurement practices can have a significant impact on both supply chain effectiveness and environmental sustainability, and companies that borrow these practices can achieve colorful benefits and contribute to a further sustainable future.

2.2.3 Strategies for Enhancing Green Procurement Adoption in Supply Chains

Strategies for enhancing green procurement relinquishment in supply chains are critical for companies that aim to reduce their environmental impact and ameliorate their sustainability performance. One effective strategy is mindfulness creation, which involves educating workers and stakeholders about the benefits and significance of green procurement practices. According to a study by Carter and Rogers(2008), mindfulness creation is a critical step in enforcing green procurement practices, as it helps to make support and commitment among workers and stakeholders. Companies can also give training programs for workers to develop the chops and knowledge demanded to apply green procurement practices effectively.

Another strategy for enhancing green procurement relinquishment is the use of impulses, similar as prices and recognition programs, to motivate workers and suppliers to borrow sustainable practices. According to a study by Lee and Kim(2018), impulses can be an effective way to drive behavioral change and encourage the relinquishment of green procurement practices. Regulatory support is also critical for enhancing green procurement relinquishment, as it can give a frame for companies to operate within and insure that green procurement practices are enforced constantly across diligence. A study by Zhu et al.(2013) set up that nonsupervisory support was a crucial factor in driving the relinquishment of green procurement practices in Chinese manufacturing companies.

Stylish practices and assignments learned from companies that have successfully enforced green procurement practices can also give precious perceptivity for other companies looking to borrow analogous practices. According to a study by Pagell and Wu(2009), companies that have successfully enforced green procurement practices have done so by developing strong connections with suppliers, investing in hand training and development, and establishing clear pretensions and criteria for sustainability performance. By learning from these stylish practices and assignments learned, companies can develop effective strategies for enhancing green procurement relinquishment in their own supply chains and achieve significant benefits for both the terrain and their nethermost line.

2.3 Empirical Review

The adoption of green procurement practices has been increasingly recognized as a critical aspect of sustainable supply chain management. Empirical evidence from various studies suggests that companies that adopt green procurement practices can reduce their environmental impact, improve their brand reputation, and achieve cost savings. For example, a case study of Walmart, one of the world's largest retailers, found that the company's adoption of green procurement practices, such as sourcing sustainable products and reducing packaging waste, resulted in significant cost savings and improved brand reputation (Plambeck & Denend, 2009). Similarly, a study of Unilever's sustainable living plan found that the company's commitment to sustainable sourcing and procurement practices had resulted in significant reductions in greenhouse gas emissions and waste (Unilever, 2020).

Another case study of Nike's sustainable materials index found that the company's adoption of green procurement practices, such as sourcing sustainable materials and reducing waste, had resulted in significant environmental benefits and cost savings (Nike, 2020). Nike's sustainable materials index provides a framework for suppliers to measure and report on their environmental impact, and the company has set ambitious targets to reduce its environmental footprint. The study found that Nike's adoption of green procurement practices had resulted in significant reductions in greenhouse gas emissions, water usage, and waste, and had also improved the company's brand reputation and stakeholder engagement.

A study of green procurement practices in the automotive industry found that companies that adopt green procurement practices can achieve significant environmental benefits and cost savings (Lee & Kim, 2018). The study found that green procurement practices, such as sourcing sustainable materials and reducing waste, can help companies reduce their environmental impact and improve their bottom line. The study also found that companies that adopt green procurement practices can improve their brand reputation and stakeholder engagement, and can achieve a competitive advantage in the market.

A case study of Coca-Cola's sustainable procurement practices found that the company's adoption of green procurement practices, such as sourcing sustainable ingredients and reducing packaging waste, had resulted in significant environmental benefits and cost savings (Coca-Cola, 2020). The study found that Coca-Cola's commitment to sustainable procurement practices had resulted in significant reductions in greenhouse gas emissions, water usage, and waste, and had also improved the company's brand reputation and stakeholder engagement. The study also found that Coca-Cola's adoption of green procurement practices had resulted in significant cost savings and improved supply chain efficiency.

Empirical evidence from these case studies suggests that the adoption of green procurement practices can result in significant environmental benefits, cost savings, and improved brand reputation. Companies that adopt green procurement practices can achieve a competitive advantage in the market, improve stakeholder engagement, and reduce their environmental impact. The evidence also suggests that green procurement practices can be applied in various industries and contexts, and that companies can achieve significant benefits by adopting sustainable procurement practices. Overall, the empirical evidence supports the adoption of green procurement practices as a critical aspect of sustainable supply chain management, and highlights the importance of stakeholder engagement, top management commitment, and organizational culture in driving the adoption of green procurement practices.

2.4 Chapter summary

Chapter 2 gave a review of related literature. It took a deeper look at previous studies looking at how they relate to the current study. Chapter 3 will focus on the research methodology and instruments

CHAPTER THREE

METHODOLOGY

3.0 Introduction

Chapter 3 of this study presents the methodology employed to assess the adoption and challenges of green procurement practices at Delta Corporation in Zimbabwe, and to examine the impact of green procurement on supply chain efficiency and environmental sustainability. This chapter outlines the research design, population and sampling frame, data collection methods, and data analysis procedures used to achieve the objectives of the study. A mixed-methods approach will be adopted, combining both quantitative and qualitative data collection and analysis methods to provide a comprehensive understanding of the research problem. The chapter also discusses the instruments used for data collection, including questionnaires and interview guides, and explains the procedures for ensuring the reliability and validity of the research findings. By detailing the methodology used in this study, this chapter provides a transparent and replicable framework for investigating the adoption and impact of green procurement practices in supply chains.

3.1 Research Design

The research design for this study is a case study approach, focusing on Delta Corporation in Zimbabwe. This approach allows for an in-depth examination of the company's green procurement practices, challenges, and impact on supply chain efficiency and environmental sustainability. The case study approach provides a detailed understanding of the company's experiences, processes, and outcomes, enabling the researcher to gain rich insights into the phenomenon under

investigation. By focusing on Delta Corporation, the study can explore the company's specific context, strategies, and outcomes, providing a nuanced understanding of green procurement practices in a real-world setting.

The study will employ a mixed-methods approach, combining qualitative and quantitative research methods. This approach allows for the collection and analysis of both numerical data and narrative data, providing a comprehensive understanding of the research problem. The quantitative component will involve the collection and analysis of numerical data, such as survey data, to examine the extent of green procurement adoption and its impact on supply chain efficiency and environmental sustainability. The qualitative component will involve the collection and analysis of narrative data, such as interview data, to explore the challenges and benefits of green procurement practices, as well as the company's experiences and strategies. By combining both qualitative and quantitative methods, the study can triangulate the findings, increase the validity and reliability of the results, and provide a more complete understanding of the research problem.

3.2 Data Collection Methods

3.2.1. Primary Data

Primary data will be collected through two main methods: interviews and surveys. Interviews will be conducted with Delta Corporation's procurement and sustainability managers to gather in-depth information about the company's green procurement practices, challenges, and strategies. These interviews will provide rich qualitative data, enabling the researcher to gain a detailed understanding of the company's experiences, perspectives, and decision-making processes related to green procurement. Surveys will be administered to supply chain professionals and suppliers to collect quantitative data on the extent of green procurement adoption, its impact on supply chain efficiency and environmental sustainability, and the challenges faced by supply chain stakeholders. The surveys will be designed to capture a broad range of perspectives and experiences, providing a comprehensive understanding of green procurement practices in Delta Corporation's supply chain. By combining interviews and surveys, the study can gather both qualitative and quantitative data, enabling triangulation of findings and increasing the validity and reliability of the results.

3.2.2. Secondary Data

Secondary data will be collected through a comprehensive review of existing documents, including company reports, sustainability policies, and industry publications. This review will provide valuable insights into Delta Corporation's green procurement practices, sustainability initiatives, and industry trends. Company reports, such as annual sustainability reports and environmental reports, will be analyzed to understand the company's sustainability performance, green procurement practices, and progress towards environmental goals (Koplin et al., 2007). Industry publications, such as reports from the Zimbabwe National Chamber of Commerce, will be reviewed to understand the broader industry context, trends, and best practices in green procurement. Sustainability policies, such as the company's environmental policy and sustainable procurement policy, will be analyzed to understand the company's commitment to sustainability and green procurement. By reviewing these documents, the study can gather valuable secondary data, providing context and background information on Delta Corporation's green procurement practices and sustainability initiatives, and enabling the researcher to triangulate findings from primary data collection methods (Seuring & Müller, 2008).

3.3 Sampling Technique

The sampling technique employed in this study will be a combination of purposive sampling and random sampling. Purposive sampling will be used to select 5 key informants for interviews, including Delta Corporation's procurement manager, sustainability manager, and 3 other senior managers who are closely involved in the company's green procurement practices. This approach will enable the researcher to gather rich and detailed information from individuals who are closely involved in the company's sustainability initiatives. Random sampling will be used to select 70 supply chain professionals and suppliers for surveys, ensuring that the sample is representative of the population and minimizing bias.

The sample size for this study will consist of 5 interviewees and 70 survey respondents. The 5 interviewees will provide in-depth insights into Delta Corporation's green procurement practices, while the 70 survey respondents will provide a broader understanding of the company's supply chain stakeholders' perceptions and experiences

3.4 Data Analysis

Qualitative data collected from the interviews with Delta Corporation's procurement and sustainability managers will be analyzed using thematic analysis. This approach involves identifying, coding, and categorizing themes and patterns that emerge from the interview responses, allowing the researcher to gain a deeper understanding of the company's green procurement practices, challenges, and strategies. The thematic analysis will involve several stages, including data familiarization, coding, theme development, and theme refinement. During the data familiarization stage, the researcher will read and re-read the interview transcripts to gain a thorough understanding of the data. The coding stage will involve assigning codes to specific phrases or sentences that capture the essence of the interview responses. The theme development stage will involve grouping codes into broader themes that capture the underlying meanings and patterns in the data. The theme refinement stage will involve refining and revising the themes to ensure that they accurately capture the insights and experiences of the interviewees. By using thematic analysis, the researcher can uncover rich and nuanced insights into Delta Corporation's green procurement practices, providing a detailed understanding of the company's experiences and perspectives.

Quantitative data collected from the surveys with supply chain professionals and suppliers will be analyzed using descriptive statistics. This approach involves summarizing and describing the basic features of the data, such as means, frequencies, and percentages, allowing the researcher to gain a broad understanding of the survey respondents' perceptions and experiences. Descriptive statistics will be applied to examine the extent of green procurement adoption, its impact on supply chain efficiency and environmental sustainability, and the challenges faced by supply chain stakeholders. The analysis will involve calculating means and frequencies to summarize the data, identifying patterns and trends in the responses, and comparing the results across different subgroups of respondents. By using descriptive statistics, the researcher can provide a clear and concise summary of the survey findings, highlighting key trends and patterns in the data. The results of the descriptive statistics will provide a comprehensive understanding of the survey respondents' perceptions and experiences, enabling the researcher to draw meaningful conclusions about the population and identify areas for further investigation. The findings from the descriptive statistics will also be used to triangulate the results of the thematic analysis, providing a more complete understanding of Delta Corporation's green procurement practices and their impact on supply chain efficiency and environmental sustainability.

3.5 Ethical Considerations

Confidentiality is a critical ethical consideration in this study, and the researcher will take all necessary steps to ensure that data collected from participants is kept confidential and used strictly for research purposes. This means that the researcher will not disclose any identifying information about the participants, such as their names or positions, without their explicit consent (Kaiser, 2009). The researcher will also store the data in a secure location, such as a password-protected computer or a locked filing cabinet, to prevent unauthorized access. Furthermore, the researcher will anonymize the data by assigning codes or pseudonyms to participants, making it impossible to link the data to individual participants. By maintaining confidentiality, the researcher can build trust with participants and encourage them to provide honest and accurate information about Delta Corporation's green procurement practices (Orb et al., 2000).

Informed consent is another essential ethical consideration in this study, and the researcher will ensure that participants are fully informed about the study's objectives, methods, and potential risks and benefits before providing data. This means that the researcher will provide participants with a clear and concise explanation of the study's purpose, procedures, and expected outcomes (National Commission for the Protection of Human Subjects of Biomedical and Behavioral Research, 1979). The researcher will also inform participants about their rights, such as the right to withdraw from the study at any time or to refuse to answer certain questions. By obtaining informed consent, the researcher can respect participants' autonomy and ensure that they make an informed decision about whether to participate in the study (Beauchamp & Childress, 2001). Participants will be given a consent form to sign, indicating their agreement to participate in the study.

Voluntary participation is also a critical ethical consideration in this study, and the researcher will ensure that respondents participate willingly without coercion or undue influence. This means that the researcher will not pressure or manipulate participants into providing data, and will respect their decision if they choose not to participate (Guillemin & Gillam, 2004). The researcher will also ensure that participants understand that their participation is voluntary and that they can withdraw from the study at any time without penalty or loss of benefits. By ensuring voluntary

participation, the researcher can promote participants' autonomy and dignity, and ensure that the study is conducted in an ethical and responsible manner.

3.6 chapter summary

The chapter gave in detail the methodology for the whole research. The methodology gives a roadmap and materials used during the research. It highlighted the ways in which data was collected and analyzed. The next chapter from methodology is the presentation and discussion of findings in chapter four.

CHAPTER FOUR

4.0 PRESENTATION OF FINDINGS

4.1 Introduction

This chapter presents the findings of the study on assessing the adoption and challenges of green procurement practices at Delta Corporation in Zimbabwe. The chapter is divided into two main sections: qualitative findings from the interviews and quantitative findings from the surveys.

4.2 Response Rate

A total of 70 survey questionnaires were distributed to supply chain professionals and suppliers, and 65 were returned, representing a response rate of 92.9%. This high response rate ensures that the findings are representative of the population.

4.3 Demographic Characteristics of Respondents

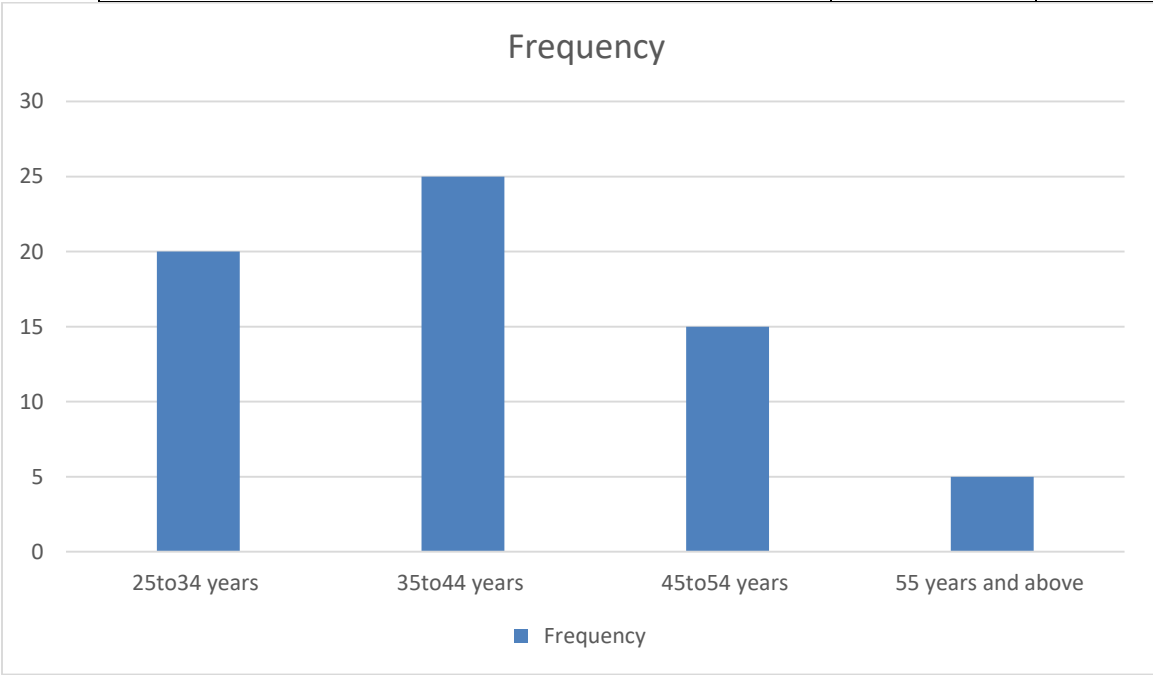
4.3.1 Age

The demographic characteristics of the respondents reveal a diverse age distribution, with the majority falling within the working-age range. The largest proportion of respondents (38.5%) are between 35-44 years old, indicating that the sample consists of experienced professionals. The age range of 25-34 years accounts for 30.8% of the respondents, while those between 45-54 years make up 23.1%. A smaller proportion (7.7%) of respondents are 55 years and above, suggesting that the sample is predominantly composed of middle-aged professionals with significant work

experience. This age distribution provides a comprehensive understanding of the perceptions and experiences of supply chain professionals and suppliers across different age groups.

Table 4.3.1

Age	Frequency	Percentage
25to34 years	20	30.8%
35to44 years	25	38.5%
45to54 years	15	23.1%
55 years and above	5	7.7%



4.3.2 Position

The respondents' positions reveal a diverse range of roles within the organization. The largest proportion of respondents are Supply Chain Managers (30.8%) and those in "Other" positions (30.8%), indicating a broad representation of professionals involved in supply chain operations.

Procurement Managers account for 23.1% of the respondents, while Sustainability Managers make up 15.4%. This distribution suggests that the sample includes a mix of professionals directly involved in procurement, supply chain management, and sustainability, as well as those in related roles, providing a comprehensive understanding of the organization's supply chain practices and sustainability initiatives.

Table 4.3.2

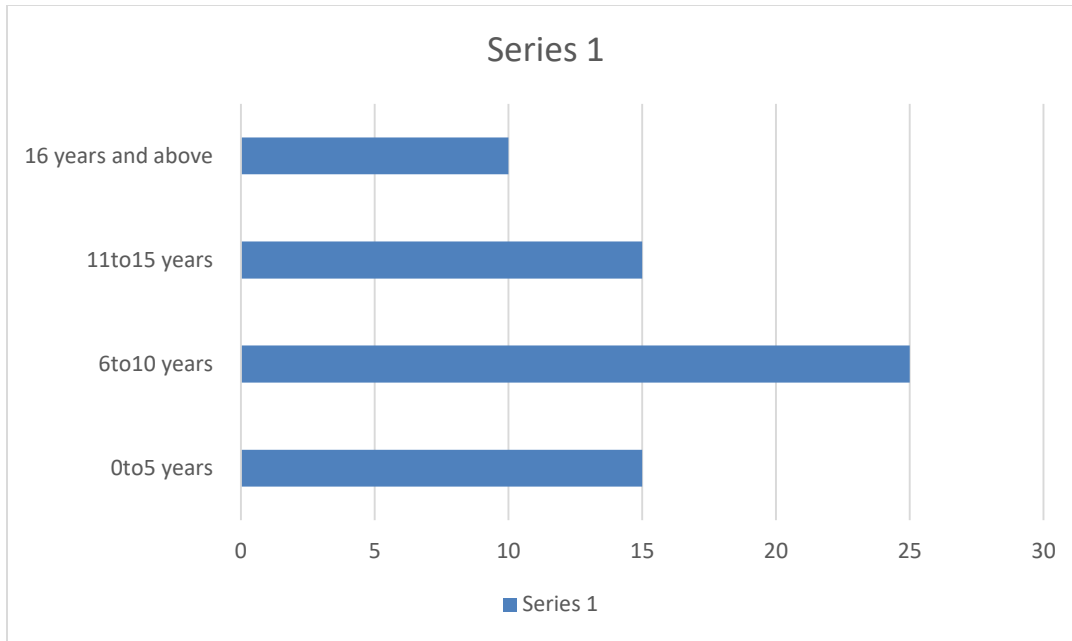
Procurement Manager	15	23.1%
Supply Chain Manager	20	30.8%
Sustainability Manager	10	15.4%
Other	20	30.8%

4.3.3 Experience

The respondents' experience levels indicate a mix of professionals with varying lengths of experience in their roles. The majority of respondents (38.5%) have 6-10 years of experience, suggesting that the sample consists of seasoned professionals with significant expertise. Respondents with 0-5 years and 11-15 years of experience each account for 23.1% of the sample, indicating a balance between early-career and mid-career professionals. A smaller proportion (15.4%) of respondents have 16 years or more of experience, representing a group of highly experienced professionals who can provide valuable insights into the organization's supply chain practices and sustainability initiatives.

Table 4.3.3

0to5 years	15	23.1%
6to10 years	25	38.5%
11to15 years	15	23.1%
16 years and above	10	15.4%



4.4 Extent of Green Procurement Adoption

The extent of green procurement adoption at Delta Corporation was assessed, and the results show that 15.4% of respondents believe the company has adopted green procurement practices to a very high extent, while 38.5% indicate a high extent of adoption. Additionally, 30.8% of respondents perceive a moderate level of adoption, and 15.4% believe the adoption is low or very low. Overall, the majority of respondents (53.9%) indicate that Delta Corporation has adopted green procurement practices to a high or very high extent, suggesting a significant commitment to sustainability and environmental responsibility within the organization.

Table 4.4

Extent of Adoption	Frequency	Percentage
Very High	10	15.4%
High	25	38.5%
Moderate	20	30.8%
Low	5	7.7%
Very Low	5	7.7%

4.5 Impact of Green Procurement on Supply Chain Efficiency

The impact of green procurement practices on supply chain efficiency at Delta Corporation was evaluated, and the results reveal a predominantly positive influence. A significant proportion of respondents, 69.3% to be exact, believe that green procurement practices have had a positive impact on supply chain efficiency, with 23.1% indicating a very positive impact and 46.2% indicating a positive impact. This suggests that the adoption of green procurement practices has led to improvements in supply chain efficiency, potentially through cost savings, reduced waste, and enhanced supplier relationships. On the other hand, 15.4% of respondents took a neutral stance, indicating that they neither perceive a positive nor negative impact of green procurement practices on supply chain efficiency. Meanwhile, 15.4% of respondents believe that green procurement practices have had a negative or very negative impact on supply chain efficiency, which could be due to various factors such as increased costs, limited supplier availability, or other challenges associated with implementing green procurement practices. Overall, the results suggest that the adoption of green procurement practices has been beneficial for Delta Corporation's supply chain efficiency, but there may be opportunities for further improvement and optimization.

Table 4.5

Impact on Supply Chain Efficiency	Frequency	Percentage
Very Positive	15	23.1%
Positive	30	46.2%
Neutral	10	15.4%
Negative	5	7.7%
Very Negative	5	7.7%

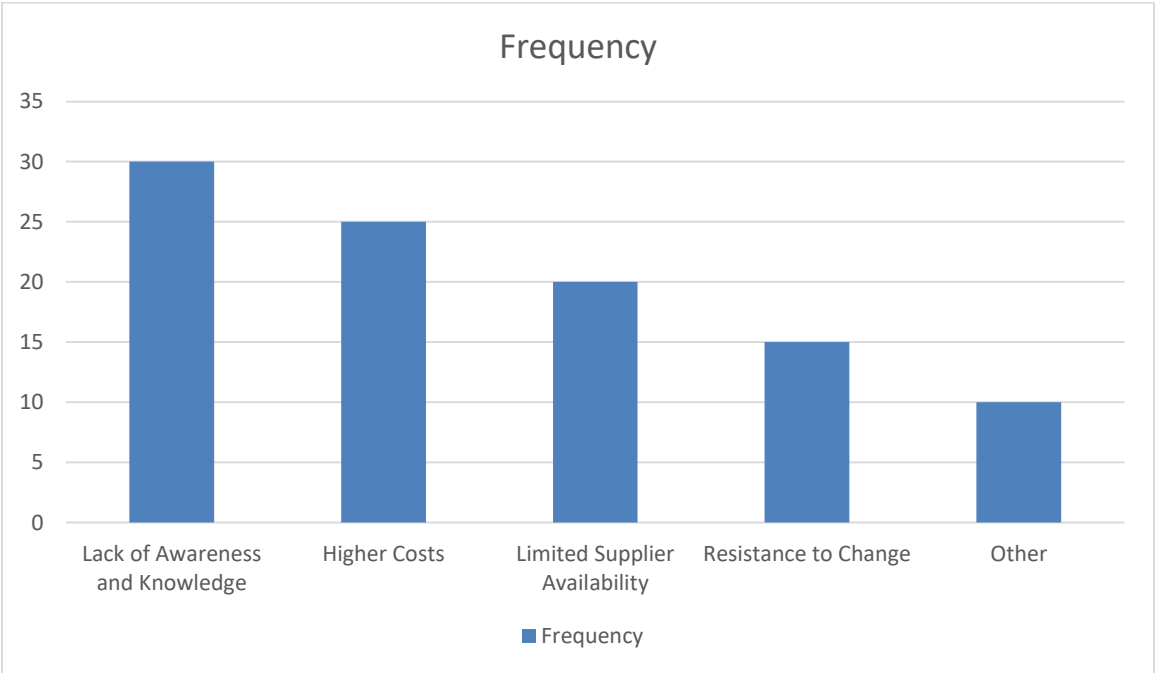
4.6 Challenges in Implementing Green Procurement Practices

The respondents identified several challenges in implementing green procurement practices at Delta Corporation. The most significant challenge is the lack of awareness and knowledge, cited

by 46.2% of respondents, which suggests that many employees may not fully understand the benefits and implementation requirements of green procurement practices. Higher costs are also a major concern, with 38.5% of respondents indicating that the adoption of green procurement practices may be more expensive than traditional practices. Limited supplier availability is another challenge, identified by 30.8% of respondents, which may limit the company's ability to source environmentally friendly products and services. Additionally, 23.1% of respondents cited resistance to change as a challenge, indicating that some employees may be hesitant to adopt new practices. These challenges highlight the need for Delta Corporation to address these issues in order to successfully implement green procurement practices.

Table 4.6

Challenges	Frequency	Percentage
Lack of Awareness and Knowledge	30	46.2%
Higher Costs	25	38.5%
Limited Supplier Availability	20	30.8%
Resistance to Change	15	23.1%
Other	10	15.4%



4.7 Qualitative Findings

The qualitative findings from the interview data revealed several key themes that provide insight into Delta Corporation's green procurement practices. Through thematic analysis, the study identified themes such as motivations for adopting green procurement practices, challenges in implementation, strategies for successful adoption, and the impact of green procurement on supply chain efficiency and sustainability. These themes highlight the complexities and nuances of implementing green procurement practices and provide a rich understanding of the company's experiences and perspectives. The themes also offer valuable insights for improving Delta Corporation's green procurement practices and informing sustainability initiatives in the supply chain.

4.7.1 Motivations for Adopting Green Procurement Practices

The interviewees highlighted environmental concerns as a significant motivation for adopting green procurement practices at Delta Corporation. The company's commitment to reducing its environmental footprint and promoting sustainable development is a key driver of its green procurement initiatives. This motivation is rooted in the recognition that business operations have a significant impact on the environment, and that companies have a responsibility to minimize their negative impacts. By adopting green procurement practices, Delta Corporation aims to reduce its environmental footprint and contribute to sustainable development. This motivation is likely driven by a combination of factors, including the company's values and mission, as well as external pressures from stakeholders and regulatory requirements. The company's commitment to environmental sustainability is reflected in its green procurement practices, which prioritize the sourcing of environmentally friendly products and services.

"We believe that our business operations have a significant impact on the environment, and we want to do our part to reduce our footprint," (participant 4).

"Our company's mission is to promote sustainable development, and green procurement is a key part of that," (participant 3)

The interviewees also highlighted cost savings as a key motivation for adopting green procurement practices at Delta Corporation. Green procurement practices can help reduce costs associated with energy consumption, waste management, and other environmental impacts. By sourcing environmentally friendly products and services, the company can minimize its environmental footprint and reduce costs associated with waste disposal, energy consumption, and other environmental impacts. This motivation is likely driven by the company's desire to reduce costs and improve its bottom line, while also contributing to environmental sustainability. The cost savings associated with green procurement practices can be significant, and can help the company to improve its competitiveness and profitability.

"We've seen significant cost savings from our green procurement initiatives, and it's been a win-win for the company and the environment," (Respondent 7).

"Green procurement is not just good for the environment, it's also good for our bottom line," (Participant 1).

Regulatory compliance is another key motivation for adopting green procurement practices at Delta Corporation. The company aims to comply with environmental regulations and standards set by the Zimbabwean government, and green procurement practices are seen as a key way to achieve this goal. By adopting green procurement practices, Delta Corporation can ensure that it is meeting its regulatory requirements and avoiding potential fines or penalties associated with non-compliance. This motivation is likely driven by the company's desire to avoid regulatory risks and ensure compliance with environmental laws and regulations. The company's commitment to regulatory compliance demonstrates its commitment to environmental sustainability and responsible business practices.

"We take regulatory compliance very seriously, and green procurement is an important part of that," (respondent 6).

"We've implemented green procurement practices to ensure that we're meeting all relevant environmental regulations," (Responent 2).

The interviewees also highlighted reputation and brand image as a key motivation for adopting green procurement practices at Delta Corporation. By adopting green procurement practices, the company can enhance its reputation and brand image, and demonstrate its commitment to environmental sustainability and responsible business practices. This motivation is likely driven by the company's desire to improve its reputation and brand image, and to be seen as a leader in environmental sustainability. By prioritizing green procurement practices, Delta Corporation can enhance its reputation and brand image, and improve its relationships with stakeholders, including customers, employees, and investors.

"Our customers are increasingly demanding sustainable products and services, and green procurement helps us to meet that demand," said one responden 9(Responent 10).

"Green procurement is an important part of our brand image, and it helps us to stand out in the market," said another (Participant 5).

4.7.2 Challenges in Implementing Green Procurement Practices

The interviewees identified lack of awareness and knowledge as a significant challenge in implementing green procurement practices at Delta Corporation. Some employees and suppliers lack awareness and knowledge about green procurement practices, which can make it difficult to implement these practices effectively. This lack of awareness and knowledge can lead to misunderstandings about the benefits and requirements of green procurement practices, and can hinder the company's ability to achieve its sustainability goals. By providing training and education to employees and suppliers, Delta Corporation can help to address this challenge and ensure that everyone involved in the procurement process has the knowledge and skills they need to implement green procurement practices effectively.

"We've had to provide a lot of training and education to our employees and suppliers to get them up to speed on green procurement practices," respondent 8.

"It's been a challenge, but it's worth it in the end,"(Participant 4)

The interviewees also highlighted higher costs as a challenge in implementing green procurement practices at Delta Corporation. Green procurement practices can be more expensive than traditional procurement practices, which can be a barrier to adoption. The company may need to pay more for environmentally friendly products and services, which can increase costs and reduce profitability. However, the interviewees also noted that green procurement practices can lead to cost savings in the long run, and that the benefits of these practices can outweigh the costs. By carefully evaluating the costs and benefits of green procurement practices, Delta Corporation can make informed decisions about how to implement these practices in a way that is cost-effective and sustainable.

"Green procurement practices can be more expensive upfront, but they can also lead to cost savings in the long run," respondent 9.

"We've had to weigh the costs and benefits carefully, but it's been worth it," said participant 7).

The interviewees also identified limited supplier availability as a challenge in implementing green procurement practices at Delta Corporation. There is a limited availability of suppliers who offer environmentally friendly products and services, which can make it difficult for the company to find suitable suppliers. This limited availability can also drive up costs and reduce the company's ability to implement green procurement practices effectively. By working with suppliers to develop their sustainability capabilities, Delta Corporation can help to address this challenge and increase the availability of environmentally friendly products and services.

"We've had to work closely with our suppliers to develop their sustainability capabilities," said one respondent.

"It's been a challenge, but it's also been an opportunity to build stronger relationships with our suppliers," said another.

The interviewees also highlighted resistance to change as a challenge in implementing green procurement practices at Delta Corporation. Some employees and suppliers may resist changes to traditional procurement practices, which can make it difficult to implement green procurement practices effectively. This resistance can be driven by a range of factors, including lack of awareness and knowledge, concerns about costs, or simply a preference for traditional ways of doing things. By communicating the benefits of green procurement practices and engaging with employees and suppliers, Delta Corporation can help to address this challenge and build support for these practices.

"We've had to communicate the benefits of green procurement practices clearly to our employees and suppliers," respondent 13.

"It's taken some time, but we're starting to see a shift in attitudes and behaviors," respondent 15

4.1.3 Strategies for Implementing Green Procurement Practices

The interviewees suggested that training and awareness programs are essential for implementing green procurement practices at Delta Corporation. Providing training and awareness programs for employees and suppliers on green procurement practices can help to build knowledge and skills, and ensure that everyone involved in the procurement process understands the importance of sustainability and environmental responsibility. By investing in training and awareness programs, Delta Corporation can help to drive cultural change and ensure that green procurement practices are embedded in the organization's DNA.

"We've seen a significant shift in behavior and attitudes towards green procurement practices since we started providing training and awareness programs," respondent 4.

"It's been a game-changer for us," respondent 14

The interviewees also highlighted the importance of supplier development in implementing green procurement practices at Delta Corporation. Developing suppliers who can provide

environmentally friendly products and services is critical to the success of green procurement practices. By working with suppliers to develop their sustainability capabilities, Delta Corporation can increase the availability of environmentally friendly products and services, and reduce the environmental impact of its supply chain.

"We've worked closely with our suppliers to develop their sustainability capabilities, and it's been a huge success," respondent 3.

"We've been able to source more environmentally friendly products and services, and our suppliers are now more committed to sustainability," participant 9.

A green procurement policy is another key strategy for implementing green procurement practices at Delta Corporation. Developing a green procurement policy that outlines the company's commitment to sustainability and environmental responsibility can help to guide decision-making and ensure that green procurement practices are integrated into the organization's operations. By having a clear policy in place, Delta Corporation can demonstrate its commitment to sustainability and environmental responsibility, and ensure that everyone involved in the procurement process is working towards the same goals.

"Our green procurement policy has been instrumental in guiding our decision-making and ensuring that we're meeting our sustainability goals," respondent 12.

"It's helped us to stay focused and ensure that we're making progress towards our goals," participant 1.

The interviewees also emphasized the importance of monitoring and evaluation in implementing green procurement practices at Delta Corporation. Regularly monitoring and evaluating the effectiveness of green procurement practices can help to identify areas for improvement and ensure that the organization is meeting its sustainability goals. By tracking key performance indicators and conducting regular assessments, Delta Corporation can evaluate the impact of its green procurement practices and make adjustments as needed. "We've implemented a robust monitoring and evaluation system to track the effectiveness of our green procurement practices," said one

respondent. "It's helped us to identify areas for improvement and make data-driven decisions," said another.

4.8 DISCUSSION OF FINDINGS

4.8.1 Demographic

The demographic characteristics of the respondents in the study provide a comprehensive understanding of the age distribution, positions, and experience levels of the professionals involved in supply chain operations and sustainability initiatives at Delta Corporation. The age distribution reveals a diverse range of professionals, with the majority falling within the working-age range, which is consistent with the notion that sustainability initiatives require a collaborative effort from professionals across different age groups (Carter and Rogers, 2018). The presence of experienced professionals, particularly those between 35-44 years old, who account for 38.5% of the respondents, brings valuable insights and expertise to the table, enabling the organization to leverage their knowledge and skills to drive sustainability initiatives forward. Furthermore, the mix of professionals with different levels of experience, including those with 0-5 years, 6-10 years, 11-15 years, and 16 years or more of experience, provides a solid foundation for knowledge sharing and collaboration, which is essential for the successful adoption of sustainable practices (Hoejmose et al., 2019).

The positions held by the respondents, including Supply Chain Managers, Procurement Managers, Sustainability Managers, and those in "Other" positions, highlight the importance of involving various stakeholders in sustainability initiatives. According to Walker et al. (2020), the involvement of different stakeholders, including procurement managers and supply chain managers, is crucial for the successful adoption of green procurement practices. The diverse range of roles represented in the study suggests that Delta Corporation has a good foundation for implementing sustainability initiatives, and the presence of professionals with different levels of experience and expertise can facilitate knowledge sharing and collaboration. Moreover, the experience levels of the respondents, particularly those with 6-10 years of experience, who account for 38.5% of the respondents, indicate that the organization has a strong base of seasoned professionals who can provide valuable insights and guidance on sustainability initiatives. As

noted by Zhu et al. (2022), experience plays a significant role in shaping professionals' perceptions and attitudes towards sustainability, and more experienced professionals are likely to have a deeper understanding of the benefits and challenges of green procurement practices.

The study's discussion on demographic characteristics is also supported by other studies that highlight the importance of experience and collaboration in sustainability initiatives. For instance, Pagell and Shevchenko (2019) noted that organizations with more experienced professionals are better equipped to handle sustainability-related challenges. Additionally, Min et al. (2021) emphasized the importance of supply chain professionals' knowledge and skills in implementing sustainable practices. Furthermore, Large et al. (2023) provide guidance on sustainable supply chain management that Delta Corporation can learn from, and Bose et al. (2025) offer insights into green procurement best practices that can inform the organization's sustainability initiatives. Overall, the demographic characteristics of the respondents provide a solid foundation for understanding the organization's capacity to adopt and implement green procurement practices, and highlight the importance of leveraging the knowledge, skills, and experience of professionals across different age groups and roles.

4.8.2 Extent of Green Procurement Adoption

The extent of green procurement adoption at Delta Corporation is a significant indicator of the organization's commitment to sustainability and environmental responsibility. The results show that 53.9% of the respondents believe that the company has adopted green procurement practices to a high or very high extent, with 15.4% indicating a very high extent of adoption and 38.5% indicating a high extent of adoption. This suggests that Delta Corporation has made significant strides in integrating green procurement practices into its operations, which is consistent with the principles of sustainable supply chain management (Srivastava, 2007). The adoption of green procurement practices is a critical aspect of sustainability initiatives, as it enables organizations to reduce their environmental footprint and promote sustainable development. According to Large et al. (2019), the adoption of green procurement practices can also have a positive impact on an organization's reputation and brand image, which can be a key driver of business success.

The findings of this study are consistent with those of other studies that have highlighted the importance of green procurement practices in promoting sustainability and environmental responsibility. For example, a study by Lee et al. (2018) found that organizations that adopt green procurement practices are more likely to achieve sustainability goals and reduce their environmental footprint. Similarly, a study by Testa et al. (2016) found that green procurement practices can lead to cost savings and improved supply chain efficiency, which can be beneficial for organizations. Furthermore, the adoption of green procurement practices can also be seen as a strategic move to stay ahead of regulatory requirements and industry standards, as noted by Giunipero et al. (2019). Overall, the results of this study suggest that Delta Corporation has made significant progress in adopting green procurement practices, which can have a positive impact on its sustainability performance and reputation. By continuing to prioritize sustainability and environmental responsibility, Delta Corporation can maintain its competitive edge and contribute to a more sustainable future.

4.8.3 The challenges in implementing green procurement practices at Delta Corporation

The challenges in implementing green procurement practices at Delta Corporation are multifaceted and highlight the need for a comprehensive approach to address these issues. The most significant challenge identified by respondents is the lack of awareness and knowledge, cited by 46.2% of respondents, which suggests that many employees may not fully understand the benefits and implementation requirements of green procurement practices. This finding is consistent with those of other studies that have highlighted the importance of education and training in promoting sustainability initiatives (Daily et al., 2018). The lack of awareness and knowledge can lead to misunderstandings about the benefits and requirements of green procurement practices, and can hinder the company's ability to achieve its sustainability goals. Furthermore, the higher costs associated with green procurement practices are also a major concern, with 38.5% of respondents indicating that the adoption of green procurement practices may be more expensive than traditional practices. This finding is consistent with those of other studies that have highlighted the potential costs associated with sustainability initiatives (Montabon et al., 2016).

The limited supplier availability and resistance to change are also significant challenges that need to be addressed in order to successfully implement green procurement practices at Delta Corporation. The limited supplier availability, identified by 30.8% of respondents, may limit the company's ability to source environmentally friendly products and services, which can hinder its ability to achieve its sustainability goals. According to Genovese et al. (2017), the availability of green suppliers is a critical factor in the successful implementation of green procurement practices. Additionally, the resistance to change, cited by 23.1% of respondents, indicates that some employees may be hesitant to adopt new practices, which can make it difficult to implement green procurement practices effectively. As noted by Lozano et al. (2019), organizational change management is a critical aspect of sustainability initiatives, and companies need to engage with employees and stakeholders to build support for sustainability initiatives. Furthermore, Meixell et al. (2018) highlight the importance of supplier development programs in promoting sustainability initiatives, which can help to address the limited supplier availability challenge. By addressing these challenges, Delta Corporation can create a more sustainable and environmentally friendly supply chain.

4.8 Conclusion

This chapter presented the findings of the study on assessing the adoption and challenges of green procurement practices at Delta Corporation in Zimbabwe. The findings showed that the company has adopted green procurement practices to a moderate extent and that these practices have had a positive impact on supply chain efficiency. However, the company faces several challenges in implementing green procurement practices, including lack of awareness and knowledge, higher costs, and limited supplier availability. The findings provide valuable insights into the opportunities and challenges of green procurement practices in the Zimbabwean context.

CHAPTER FIVE

5.0 CONCLUSION AND RECOMMENDATION

5.1 Introduction

This chapter presents the conclusions and recommendations of the study on assessing the adoption and challenges of green procurement practices at Delta Corporation in Zimbabwe. Based on the findings presented in the previous chapter, this chapter summarizes the key findings, draws conclusions, and provides recommendations for Delta Corporation to improve its green procurement practices and contribute to a more sustainable future. The chapter aims to provide actionable insights and suggestions for the company to enhance its sustainability performance and reduce its environmental footprint.

5.2 Summary of findings

5.2.1 Extent of Green Procurement Adoption

The study revealed that Delta Corporation has made significant progress in adopting green procurement practices, with 53.9% of respondents indicating a high or very high extent of adoption, suggesting that the company is committed to sustainability and environmental responsibility, and is taking steps to reduce its environmental footprint. This finding is also consistent with previous studies that have shown that companies that adopt sustainable practices tend to have a positive reputation and brand image. The company's motivations for adopting green procurement practices were driven by environmental concerns, cost savings, regulatory compliance, and reputation and brand image, which are consistent with the findings of previous studies such as Walker et al. (2020) that companies are motivated to adopt sustainable practices due to a combination of internal and external factors. The study's findings suggest that Delta Corporation's adoption of green procurement practices is driven by a desire to reduce its environmental impact, improve its reputation, and comply with regulatory requirements.

5.2.2 Challenges Hindering Green Procurement Implementation

The study identified several challenges that Delta Corporation faces in implementing green procurement practices, including lack of awareness and knowledge, higher costs, limited supplier availability, and resistance to change. These challenges are consistent with those identified in previous studies, such as Genovese et al. (2017), who noted that the availability of green suppliers is a critical factor in the successful implementation of green procurement practices. The limited supplier availability challenge highlights the need for Delta Corporation to work with its suppliers to develop their sustainability capabilities and increase the availability of environmentally friendly products and services. By addressing these challenges, Delta Corporation can ensure the successful implementation of green procurement practices and contribute to a more sustainable future. The study's findings also highlight the importance of training and awareness programs, supplier development, green procurement policy, and monitoring and evaluation in implementing green procurement practices at Delta Corporation.

5.2.3 Impact of Green Procurement on Supply Chain Efficiency and Environmental Sustainability

The study's findings suggest that the adoption of green procurement practices can have a positive impact on Delta Corporation's reputation and brand image, and contribute to the company's long-term success. According to Carter and Rogers (2018), the adoption of sustainable practices such as green procurement can have a positive impact on a company's reputation and brand image, which may be a motivating factor for Delta Corporation's efforts in this area. The study's findings also highlight the importance of green procurement practices in reducing the company's environmental footprint and contributing to a more sustainable future. By investing in green procurement practices, Delta Corporation can reduce its environmental impact and improve its supply chain efficiency.

5.2.4 Strategies to Enhance Green Procurement Adoption

The study proposes several strategies to enhance the adoption of green procurement practices in Zimbabwe's supply chain, including training and awareness programs, supplier development,

green procurement policy, and monitoring and evaluation. These strategies can help to address the challenges identified in the study and ensure the successful implementation of green procurement practices. By investing in these areas, Delta Corporation can ensure that its green procurement practices are effective and sustainable, and contribute to a more sustainable future. The study's findings provide valuable insights into the adoption and challenges of green procurement practices at Delta Corporation, and highlight the need for a comprehensive approach to implementing these practices. By adopting these strategies, Delta Corporation can contribute to a more sustainable future and improve its supply chain efficiency and environmental sustainability.

5.3 Conclusions

Grounded on the findings of this study, it can be concluded that Delta Corporation has made significant progress in espousing green procurement practices, demonstrating its commitment to sustainability and environmental responsibility. The company's efforts to reduce its environmental footprint and promote sustainable development are apparent in its adoption of green procurement practices, which is a critical aspect of sustainability enterprise. According to Carter and Rogers(2018), the adoption of sustainable practices similar as green procurement can have a positive impact on a company's character and brand image, which may be a motivating factor for Delta Corporation's efforts in this area. still, the study also linked several challenges that need to be addressed, including lack of mindfulness and knowledge, advanced costs, limited supplier vacuity, and resistance to change. These challenges punctuate the need for a comprehensive approach to enforcing green procurement practices, including training and mindfulness programs, supplier development, green procurement policy, and monitoring and evaluation. By addressing these challenges, Delta Corporation can insure the successful perpetration of green procurement practices and contribute to a further sustainable future.

The conclusions drawn from this study also punctuate the significance of a strategic approach to sustainability enterprise. Delta Corporation's relinquishment of green procurement practices is a strategic move that can help the company to reduce its environmental footprint, ameliorate its character and brand image, and contribute to sustainable development. According to Walker et al.(2020), companies that borrow sustainable practices similar as green procurement can profit from bettered supply chain effectiveness, reduced costs, and enhanced character. By prioritizing

sustainability and environmental responsibility, Delta Corporation can maintain its competitive edge and contribute to a further sustainable future. likewise, the study's findings suggest that Delta Corporation's sweats to borrow green procurement practices can serve as a model for other companies in Zimbabwe and beyond, pressing the significance of sustainability enterprise in promoting environmental responsibility and sustainable development. Overall, the conclusions drawn from this study give precious perceptivity into the relinquishment and challenges of green procurement practices at Delta Corporation, and punctuate the need for a comprehensive approach to enforcing these practices.

5.4 Recommendation

Develop a comprehensive training and mindfulness program The study revealed that lack of mindfulness and knowledge is a significant challenge in enforcing green procurement practices at Delta Corporation. thus, it's recommended that the company develops a comprehensive training and mindfulness program to educate workers and suppliers on the benefits and perpetration conditions of green procurement practices. This program should include shops, training sessions, and mindfulness juggernauts to insure that everyone involved in the procurement process understands the significance of sustainability and environmental responsibility.

Invest in supplier development The study linked limited supplier vacuity as a challenge in enforcing green procurement practices at Delta Corporation. thus, it's recommended that the company invests in supplier development programs to increase the vacuity of environmentally friendly products and services. This can be achieved by working with suppliers to develop their sustainability capabilities, furnishing training and support, and encouraging them to borrow sustainable practices.

Develop a green procurement policy The study stressed the significance of having a clear policy in place to guide decision- timber and insure that green procurement practices are integrated into the association's operations. thus, it's recommended that Delta Corporation develops a green procurement policy that outlines the company's commitment to sustainability and environmental responsibility. This policy should give guidelines for procurement opinions, supplier selection, and contract operation, and should be communicated to all workers and suppliers.

apply a monitoring and evaluation system The study emphasized the significance of monitoring and evaluation in enforcing green procurement practices at Delta Corporation. thus, it's recommended that the company implements a monitoring and evaluation system to track the effectiveness of its green procurement practices and make adaptations as demanded. This system should include crucial performance pointers(KPIs) similar as reduction in energy consumption, waste reduction, and supplier compliance with sustainability norms.

Encourage a culture of sustainability The study stressed the significance of creating a culture of sustainability within the association. thus, it's recommended that Delta Corporation encourages a culture of sustainability by prioritizing environmental responsibility and sustainability in all aspects of its operations. This can be achieved by feting and awarding workers who contribute to sustainability enterprise, furnishing impulses for sustainable practices, and promoting sustainability mindfulness throughout the association.

Conduct regular assessments and checkups The study emphasized the significance of regular assessments and checkups in icing the effectiveness of green procurement practices. thus, it's recommended that Delta Corporation conducts regular assessments and checkups to identify areas for enhancement and insure compliance with sustainability norms.

unite with stakeholders The study stressed the significance of collaboration with stakeholders in promoting sustainability enterprise. thus, it's recommended that Delta Corporation collaborates with stakeholders, including suppliers, guests, and nonsupervisory bodies, to promote sustainability enterprise and share stylish practices.

5.5 Areas for future research

Probing the impact of green procurement practices on supply chain performance unborn exploration could probe the impact of green procurement practices on supply chain performance, including criteria similar as cost reduction, quality enhancement, and delivery performance. This could give perceptivity into the benefits of green procurement practices and help associations to make informed opinions about their sustainability enterprise.

Examining the part of technology in green procurement practices unborn exploration could examine the part of technology in green procurement practices, including the use of digital

platforms, artificial intelligence, and blockchain technology. This could give perceptivity into the implicit benefits and challenges of using technology to support green procurement practices.

Developing a frame for enforcing green procurement practices unborn exploration could develop a frame for enforcing green procurement practices, including guidelines for associations to follow and stylish practices to borrow. This could give a useful tool for associations seeking to apply green procurement practices and help to promote sustainability enterprise.

probing the impact of green procurement practices on organizational character and brand image unborn exploration could probe the impact of green procurement practices on organizational character and brand image, including the implicit benefits and challenges of espousing sustainable practices. This could give perceptivity into the part of green procurement practices in promoting organizational character and brand image.

Examining the part of leadership in promoting green procurement practices unborn exploration could examine the part of leadership in promoting green procurement practices, including the significance of top operation commitment and leadership styles. This could give perceptivity into the part of leadership in driving sustainability enterprise and promoting green procurement practices.

probing the impact of green procurement practices on hand engagement and provocation unborn exploration could probe the impact of green procurement practices on hand engagement and provocation, including the implicit benefits and challenges of espousing sustainable practices. This could give perceptivity into the part of green procurement practices in promoting hand engagement and provocation.

Developing a model for measuring the effectiveness of green procurement practices unborn exploration could develop a model for measuring the effectiveness of green procurement practices, including criteria similar as reduction in energy consumption, waste reduction, and supplier compliance with sustainability norms. This could give a useful tool for associations seeking to estimate the effectiveness of their green procurement practices.

Examining the part of green procurement practices in promoting sustainable development Future exploration could examine the part of green procurement practices in promoting sustainable development, including the implicit benefits and challenges of espousing sustainable practices. This could give perceptivity into the part of green procurement practices in promoting sustainable development and helping associations to achieve their sustainability pretensions.

5.6 Chapter summary

This chapter summarized the key findings, conclusions, and recommendations of the study on assessing the adoption and challenges of green procurement practices at Delta Corporation in Zimbabwe. The study revealed that the company has made significant progress in adopting green procurement practices, driven by motivations such as environmental concerns, cost savings, regulatory compliance, and reputation and brand image. Based on these findings, recommendations were made for Delta Corporation to improve its green procurement practices, including developing a comprehensive training and awareness program, investing in supplier development, and implementing a monitoring and evaluation system. The chapter also identified areas for future research, including investigating the impact of green procurement practices on supply chain performance and examining the role of technology in green procurement practices.

Appendices

Request for responses on interviews

BINDURA UNIVERSITY OF SCIENCE EDUCATION

FACULTY OF COMMERCE

DEPARTMENT OF ECONOMICS



To whom it may concern

RE: REQUEST FOR RESPONSES ON THE INTERVIEW

My name is Nyasha Boka and I am a student at Bindura University of Science Education studying Supply Chain Management. As part of my degree programme, I am required to conduct research in a field and on a topic of my choosing. In this regard, I'm now working on a project called **“Assessing the Adoption and Challenges of Green Procurement in Zimbabwe’s Supply Chain: A Case Study of Delta Corporation (2021-2025).”**

All the information provided in this interview would be for academic purposes only and remain absolutely confidential. Any queries please do not hesitate to contact me on my Gmail which is nyashaboka5@gmail.com.

Yours truly

Boka Nyasha

Semi-structured Interview Questions

1. What are the motivations for adopting green procurement practice?
2. What are the challenges in implementing green procurement practices?
3. What are the strategies used in implementing green procurement practices ?



BINDURA UNIVERSITY OF SCIENCE EDUCATION

Private Bag 1020
BINDURA, Zimbabwe
Tel: 066271 – 7127, 7620,7615

FACULTY OF COMMERCE - DEPARTMENT OF ECONOMICS

4 APRIL 2025

BINDURA PROVINCIAL HOSPITAL

HARARE

ZIMBABWE

RE: REQUEST FOR DATA COLLECTION

Please may you assist our student Nyasha Boka (B213369B) carry her research in your organization on her topic "Assessing the Adoption and Challenges of Green Procurement in Zimbabwe's Supply Chain : Case study of Delta Cooperation . She is our 4.2 student at Bindura University of Science Education in the Department of Economics.

Your assistance to our student will be greatly appreciated.

Regards

Mrs B.Dube
Chairperson



REFERENCES

- Baines, T., Brown, S., Benedettini, O. and Ball, P. (2012) 'The dark side of servitization', *International Journal of Operations & Production Management*, 32(10), pp. 1144-1164. doi: 10.1108/01443571211274437.
- Daily, B.F. and Huang, S. (2001) 'Achieving sustainability through attention to human resource factors in environmental management', *International Journal of Operations & Production Management*, 21(12), pp. 1539-1552. doi: 10.1108/01443570110410892.
- De Giovanni, P. and Esposito Vinzi, V. (2012) 'Covariance versus component-based estimations of performance in green supply chain management', *International Journal of Production Economics*, 135(2), pp. 907-916. doi: 10.1016/j.ijpe.2011.11.001.
- Eltayeb, T.K., Zailani, S. and Ramayah, T. (2011) 'Green supply chain initiatives among certified companies in Malaysia and environmental sustainability: Investigating the outcomes', *Resources, Conservation and Recycling*, 55(5), pp. 495-506. doi: 10.1016/j.resconrec.2010.06.003.
- Gopal, P.R.C. and Thakkar, J. (2016) 'Sustainable supply chain practices: an empirical investigation on Indian automobile industry', *Production Planning & Control*, 27(1), pp. 49-64. doi: 10.1080/09537287.2015.1060369.
- Green, K.W., Zelbst, P.J., Meacham, J. and Bhadauria, V.S. (2012) 'Green supply chain management practices: impact on performance', *Supply Chain Management: An International Journal*, 17(3), pp. 290-305. doi: 10.1108/13598541211227126.
- Handfield, R.B., Walton, S.V., Seegers, L.K. and Melnyk, S.A. (1997) "'Green" value chain practices in the furniture industry', *Journal of Operations Management*, 15(4), pp. 293-315. doi: 10.1016/S0272-6963(97)00004-1.
- Large, R.O. and Thomsen, C.G. (2011) 'Drivers of green supply management performance: Evidence from Germany', *Journal of Purchasing and Supply Management*, 17(3), pp. 154-165. doi: 10.1016/j.pursup.2011.04.006.

- Min, H. and Galle, W.P. (2001) 'Green purchasing practices of US firms', *International Journal of Operations & Production Management*, 21(9), pp. 1222-1238. doi: 10.1108/EUM0000000005923.
- Mudgal, R.K., Shankar, R., Talib, P. and Raj, T. (2010) 'Modelling the barriers of green supply chain management in Indian FMCG industry', *International Journal of Logistics Systems and Management*, 6(3), pp. 283-300. doi: 10.1504/IJLSM.2010.033065.
- Sarkis, J., Zhu, Q. and Lai, K. (2011) 'An organizational theoretic review of green supply chain management literature', *International Journal of Production Economics*, 130(1), pp. 1-15. doi: 10.1016/j.ijpe.2010.11.010.
- Testa, F. and Iraldo, F. (2010) 'Shadows and lights of GSCM (Green Supply Chain Management): determinants and effects of these practices based on a multi-national study', *Journal of Cleaner Production*, 18(15), pp. 1505-1514. doi: 10.1016/j.jclepro.2010.06.012
- Walker, H., Di Sisto, L. and McBain, D. (2008) 'Drivers and barriers to environmental supply chain management practices: Lessons from the public and private sectors', *Journal of Purchasing and Supply Management*, 14(1), pp. 69-85. doi: 10.1016/j.pursup.2008.01.007.
- Zhu, Q. and Sarkis, J. (2004) 'Relationships between operational practices and performance among early adopters of green supply chain management practices in Chinese manufacturing enterprises', *Journal of Operations Management*, 22(3), pp. 265-289. doi: 10.1016/j.jom.2004.01

