

**SUSTAINABLE SUPPLY CHAIN MANAGEMENT PRACTICES AND
ORGANIZATIONAL PERFORMANCE OF PARASTATALS IN KENYA: A CASE STUDY
OF COMMUNICATION AUTHORITY OF KENYA.**

SARAH CHEPCHUMBA

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DECLARATION

Declaration by the Student

This research project is my original work and has not been presented for a degree in any University.

Signature..... **Date**.....

SARAH CHEPCHUMBA

MBA/28/00237/1/23

Declaration by the supervisor

This research project has been submitted for examination with my approval as the university supervisor.

Signature..... . **Date**:.....

PROF. EMMANUEL AWUOR

The Management University of Africa

DEDICATION

This work is dedicated to my beloved parents, to my late father, and my mother, whose encouragement and faith gave me the resilience to persevere through every challenge. I am deeply grateful.

I also dedicate this research to the Communications Authority of Kenya for providing the opportunity and support necessary to conduct this study. Finally, I extend heartfelt appreciation to my supervisor, Professor Emmanuel Awuor, for his patient guidance, constructive feedback, and unwavering commitment to academic excellence

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ABSTRACT

This study explored how Sustainable Supply Chain Management (SSCM) practices influence organizational performance at the Communications Authority of Kenya (CA). The research adopted a cross-sectional census design involving 155 employees directly engaged in procurement and operational functions. Four key SSCM domains were examined—green procurement, waste management, resource efficiency, and ethical sourcing—while performance was assessed through indicators of cost efficiency, regulatory compliance, environmental sustainability, and employee engagement. The findings revealed that sustainability practices are increasingly integrated into CA's operations, though their maturity varies. Green procurement and ethical sourcing emerged as the strongest performance drivers, demonstrating clear links to efficiency, transparency, and institutional credibility. In contrast, waste management and resource efficiency were less developed and contributed minimally to measurable outcomes, reflecting operational rather than strategic application. The regression model explained a meaningful share of performance variance ($R^2 = 0.288$; adjusted $R^2 = 0.269$; F , $p < .001$), confirming that SSCM practices collectively influence organizational results but require balanced implementation. The study concludes that while procurement reforms have already yielded tangible benefits, operational sustainability must be strengthened through improved monitoring, accountability, and capacity building. It recommends embedding sustainability criteria and life-cycle costing into procurement, enhancing supplier verification, and establishing departmental dashboards to track energy, water, and waste metrics. Overall, the research affirms that institutionalizing SSCM within Kenya's public sector can advance both performance efficiency and the broader national sustainability agenda.

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ACRONYMS AND ABBREVIATIONS

CA -	Communication Authority of Kenya
CSR -	Corporate Social Responsibility
GRI -	Global Reporting Initiative
GSCM -	Green Supply Chain Management
ICT -	Information and Communication Technology
ISO -	International Organization for Standardization
KPI -	Key Performance Indicator
PPPs -	Public-Private Partnerships
RBV -	Resource-Based View
SDGs -	Sustainable Development Goals
SPSS -	Statistical Package for the Social Sciences
SSCM -	Sustainable Supply Chain Management
TBL -	Triple Bottom Line
UNEP -	United Nations Environment Programme

OPERATIONAL DEFINITION OF TERMS

Environmental Performance –	This is how effectively an organization manages and reduces its impact on the natural environment, particularly in lowering its ecological footprint.
Ethical sourcing	Obtaining products and services from suppliers who uphold responsible labor practices, environmental protection, and social accountability standards.
Green Procurement –	Entails the Procurement of goods and services that cause minimal environmental harm, with attention to their efficiency and full lifecycle impact.
Organizational Performance -	The effectiveness of an organization in achieving economic, environmental, and social objectives.
Resource Efficiency -	The optimization of material, energy, and labor usage to maximize output while minimizing waste and environmental harm.
Social Performance -	The impact of an organization's activities on societal well-being, including fair labor practices and community trust.
Supply Chain Sustainability -	Designing and managing supply chain functions to support environmental, social, and economic growth.
Sustainable Supply Chain Management (SSCM)	Integrating environmental, social, and economic considerations into supply chain procedures for sustainability.
Triple Bottom Line (TBL) -	A sustainability framework evaluating performance based on economic, environmental, and social dimensions.
Waste Management Strategies -	Approaches aimed at reducing, reusing, recycling, and properly disposing of waste within the supply chain.

CHAPTER ONE

INTRODUCTION

1.0 Introduction

This chapter presents an overview of sustainable supply chain management (SSCM) practices and their influence on organizational performance. It outlines the core issues affecting the integration of SSCM within organizations and examines how these challenges impact overall performance. In addition, the chapter sets out the study's specific objectives, key research questions, relevance, and scope, and summarizes the content discussed.

1.1 Background of study

Sustainable Supply Chain Management (SSCM) has increasingly attracted global attention as businesses seek to harmonize economic advancement with environmental stewardship and social accountability. According to Baliga, Raut, and Kamble (2019), SSCM integrates sustainable practices such as green procurement, ethical sourcing, waste management, and resource efficiency into supply chain operations. This approach addresses environmental and social concerns and promotes long-term organizational success. The need for SSCM has been further amplified by growing consumer demand for transparency, ethical operations in supply chains, and compliance with stringent environmental regulations. Organizations adopting SSCM find that sustainable practices improve their operational efficiency, brand reputation, and stakeholder relationships.

In the African context, SSCM has emerged as a critical strategy for achieving sustainability goals, although its adoption varies significantly across industries and countries. Habib et al. (2021) emphasize that while African nations recognize the importance of SSCM, many face challenges such as limited infrastructure, financial constraints, and insufficient expertise. For example, African public institutions often grapple with outdated procurement systems that hinder the integration of sustainability practices. Nevertheless, there are opportunities for progress as governments and private organizations increasingly collaborate on sustainable projects. Initiatives such as green energy adoption and waste management reforms are becoming more prevalent globally, providing a foundation for broader SSCM integration.

Kenya's public and private sectors are progressively aligning their operations with Global Sustainability Frameworks, including the United Nations Sustainable Development Goals (SDGs) and the country's Vision 2030 agenda. As Mwilu (2013) notes, SSCM is particularly important in

Kenya, given the country's role as a regional trade hub, which necessitates efficient and sustainable supply chains. However, like other developing economies, Kenya faces structural barriers to SSCM adoption, including inadequate funding, fragmented supply chain operations, and a lack of modern technologies. These challenges underscore the need for strategic interventions to effectively integrate SSCM practices into Kenyan organizations.

The Communication Authority of Kenya (CA) is a vital regulatory body in the country's communications sector. Its strategic position within the public sector makes it an ideal organization to champion SSCM practices. As a public entity, CA operates under significant scrutiny regarding its environmental footprint, procurement processes, and ethical standards. For CA, embracing SSCM practices, such as green procurement and ethical sourcing, can improve compliance with regulatory requirements, enhance stakeholder trust, and reduce operational inefficiencies.

However, the adoption of SSCM at CA is not without challenges. Limited financial resources, insufficient infrastructure (i.e., technology, and a lack of sustainable experts pose significant barriers. For instance, CA's procurement processes often prioritize cost minimization over sustainability, leading to missed opportunities for integrating green and ethical practices. According to Bag et al. (2021), addressing such barriers requires a comprehensive strategy, including capacity building, stakeholder collaboration, and innovative technologies. By overcoming these challenges, CA has the potential to position itself as a leader in sustainability within Kenya's public sector, aligning its operations with national and global sustainability goals.

1.1.1 Profile of Communications Authority of Kenya

The Communication Authority of Kenya (CA) is a public regulatory agency mandated to oversee Kenya's communications sector, which includes broadcasting, telecommunications, and postal services. CA is critical in setting and enforcing sectoral standards and policies as a parastatal. Its operations affect various stakeholders, including consumers, service providers, and government agencies. Given its national influence and regulatory responsibilities, CA is well-positioned to lead by example in implementing sustainable supply chain management (SSCM) practices. These include green procurement, ethical sourcing, waste management, and resource efficiency. However, its ability to integrate sustainability into supply chain processes is shaped by financial constraints, policy gaps, and technological limitations, which make it an important case for examining SSCM within the public sector.

1.1.2 Green Procurement

Green procurement refers to acquiring goods and services with a reduced environmental impact throughout their lifecycle. According to Bag et al. (2021), organizations that adopt green procurement often experience benefits such as improved compliance with environmental regulations, reduced consumption of natural resources, and operational cost savings. Public institutions like CA are beginning to incorporate sustainability criteria in their procurement frameworks in Kenya. For instance, CA has introduced policies prioritizing energy-efficient equipment and environmentally certified vendors. However, implementation is inconsistent due to weak enforcement mechanisms and a lack of staff training. Addressing these challenges requires institutional support, more straightforward policy guidelines, and stronger accountability structures to embed green procurement into the organizational culture fully.

1.1.3 Waste Management Strategies

Effective waste management in public institutions involves structured systems for reducing, reusing, and recycling waste. As Mwilu (2013) highlights, many Kenyan public sector organizations face challenges related to waste disposal due to limited infrastructure and poor coordination between departments. For CA, adopting waste management strategies like electronic waste recycling, paper reduction initiatives, and partnerships with certified waste handlers can enhance environmental sustainability and reduce compliance risks. However, current efforts are often fragmented and lack centralized oversight, which weakens their overall impact. Strengthening interdepartmental collaboration, investing in infrastructure, and creating a waste audit framework can help CA meet its regulatory and sustainability objectives.

1.1.4 Resource efficiency

Resource efficiency is using materials, energy, and labor to reduce waste while maximizing output. Ghosh et al. (2023) observe that organizations prioritizing resource efficiency often experience enhanced operational performance and lower environmental footprints. At CA, opportunities exist to promote resource efficiency through energy-saving technologies, streamlined workflows, and employee training on sustainable practices. For example, transitioning to cloud-based operations or installing energy-efficient lighting can reduce operating costs. However, these initiatives require financial investment and technical know-how, which are not always readily available. Building internal capacity and securing budgetary support are necessary to ensure resource efficiency becomes a strategic performance driver.

1.1.5 Ethical Sourcing

Ethical sourcing involves obtaining goods and services from suppliers who adhere to fair labor standards, environmental regulations, and ethical business practices. Habib et al. (2021) explain that ethical sourcing contributes to stakeholder trust and organizational legitimacy, especially for public institutions. For CA, embracing ethical sourcing can help enhance transparency, avoid reputational risks, and promote social responsibility. However, the effectiveness of ethical sourcing is currently undermined by weak procurement monitoring, limited supplier accountability, and fragmented supply chain oversight. Strengthening procurement audits, integrating ethical standards into tender evaluations, and collaborating with ethical certification bodies could significantly improve CA's sourcing practices.

1.1.6 Profile of the Communications Authority of Kenya

The Communications Authority of Kenya (CA) is the national regulatory agency responsible for overseeing the information and communications technology (ICT) sector, including telecommunications, broadcasting, postal, and courier services. Established under the Kenya Information and Communications Act (KICA) of 1998 and operationalized in July 1999, the Authority plays a critical role in facilitating the growth, innovation, and sustainability of Kenya's digital economy. Its mandate includes licensing and regulation of communications services, management of the radio frequency spectrum, enforcement of consumer protection and quality-of-service standards, and promotion of fair competition among service providers.

The Authority operates under the policy guidance of the Ministry of Information, Communications, and the Digital Economy and is governed by a Board of Directors appointed in accordance with the KICA Act. CA's operations are structured across key departments, including licensing and standards, frequency management, ICT development, human resources, procurement, and corporate support services. With headquarters in Nairobi and regional offices across the country, the institution employs over 150 staff members and works closely with national and international partners such as the International Telecommunication Union (ITU) and the Communications Regulators' Association of Southern Africa (CRASA).

In recent years, CA has integrated sustainability principles into its operations to align with national policies such as Kenya Vision 2030 and the Sustainable Development Goals (SDGs). This integration has led to the adoption of environmentally responsible procurement policies, promotion of energy-

efficient ICT infrastructure, and ethical governance practices within its supply chain. As a public institution funded through licensing fees and levies on communication services, the Authority's strategic emphasis on sustainability reflects both its regulatory responsibility and commitment to corporate social accountability.

1.2 Statement of the Problem

Sustainable supply chain management (SSCM) has emerged as a critical focus area globally, as organizations aim to achieve economic success while simultaneously fulfilling environmental and social responsibilities. In developing economies like Kenya, integrating SSCM practices within public sector organizations such as the Communication Authority of Kenya (CA) is desirable and essential for long-term organizational sustainability and enhanced performance. However, the journey toward full adoption and effective implementation of SSCM is fraught with challenges that can undermine these practices' objectives.

One of the central issues facing CA is the financial constraint that limits the organization's ability to invest in sustainable technologies and processes. As Mwilu (2013) observes, public sector institutions in Kenya often operate under tight budgets, which restrict their capacity to pursue innovative and sustainable supply chain solutions. This financial limitation creates a paradox where, despite recognizing the importance of SSCM, CA may be unable to make the necessary investments to realize these practices fully. Consequently, this financial shortfall not only delays the implementation of SSCM but also impacts the overall efficiency and effectiveness of the organization's operations.

In addition to financial challenges, technological infrastructure is another significant hurdle. Modern SSCM practices rely on advanced technologies for tracking, monitoring, and optimizing supply chain activities. Bag et al. (2021) argue that the technological dimensions of green supply chain management are critical for enhancing firm performance, as they enable real-time data analysis, improved resource management, and greater operational transparency. However, CA's existing technological infrastructure may not be sufficient to support these advanced SSCM practices, leading to inefficiencies and missed opportunities for sustainability gains. The lack of appropriate technology hampers the implementation of SSCM and exacerbates existing operational challenges, making it difficult for CA to achieve its sustainability objectives.

Furthermore, the successful adoption of SSCM practices requires financial resources, technology, and a workforce equipped with the necessary skills and knowledge. Shahzad et al. (2020) emphasize that organizational compatibility, including the availability of skilled personnel, is crucial in

effectively implementing green supply chain management practices. In CA's case, there may be a shortage of expertise in SSCM, which can lead to suboptimal decision-making and fragmented initiatives. Without a strong foundation of knowledgeable staff, CA may struggle to integrate sustainability into its supply chain processes effectively, resulting in poorly executed initiatives or failing to achieve its intended impact.

The issue of fragmented initiatives within CA further compounds the problem. As Mukasa (2009) notes, when different departments within an organization work in isolation, it creates a lack of coordination that can undermine the overall strategic objectives. In the context of SSCM, this siloed approach means that efforts to promote sustainability may be disconnected from the broader organizational goals, leading to inefficiencies and reduced effectiveness. For instance, one department might focus on reducing waste. At the same time, another might prioritize cost savings without a cohesive strategy that aligns these efforts with the overall sustainability objectives of the organization. This lack of integration can result in missed opportunities for synergy, where coordinated efforts could have produced more significant sustainability and performance benefits.

Moreover, the challenge of measuring the impact of SSCM on organizational performance cannot be overlooked. While there is a growing consensus on the positive relationship between SSCM and organizational performance, empirical evidence remains limited, particularly from public sector organizations in developing economies. Cahyadi et al. (2023) highlight that organizations in developing economies often struggle to quantify the benefits of SSCM, which makes it difficult to justify investments in these practices. For CA, the inability to accurately measure SSCM's impact may lead to uncertainty about the value of these initiatives, further complicating efforts to secure the necessary resources and support for their implementation.

Given these challenges, there is a pressing need for a comprehensive study that examines the impact of SSCM practices on the organizational performance of CA and explores the barriers to their effective implementation. Habib et al. (2021) underscore the importance of strategic orientations in overcoming these challenges, suggesting that a clear and cohesive strategy is essential for integrating SSCM into organizational practices. By identifying the obstacles CA faces and proposing actionable solutions, this study aims to lay out a roadmap for the organization to enhance its supply chain management, improve its performance, and contribute to sustainable development goals in Kenya.

The Communication Authority of Kenya (CA) faces significant challenges in implementing sustainable supply chain management (SSCM) practices, which are directly tied to the variables under

investigation: green procurement, waste management, resource efficiency, and ethical sourcing. In green procurement, financial constraints and a prevailing focus on cost reduction rather than sustainability have limited the adoption of eco-friendly sourcing practices. The absence of robust enforcement frameworks further exacerbates this issue, making it difficult to guarantee adherence to established environmental regulations. Similarly, waste management efforts are hampered by fragmented departmental initiatives and inadequate infrastructure, which prevent the efficient implementation of recycling and waste reduction practices. These shortcomings reduce the overall effectiveness of CA's supply chain operations and hinder progress toward broader sustainability goals.

Resource efficiency presents additional barriers, as insufficient technological resources and limited expertise constrain the organization's ability to effectively optimize energy, material, and labor usage. Moreover, ethical sourcing remains a pressing issue due to weak procurement policies and minimal accountability mechanisms, making enforcing ethical labor and environmental standards across the supply chain difficult. These challenges highlight the need for a comprehensive strategy that addresses the systemic issues undermining SSCM practices at CA. By focusing on these critical areas, this study aims to identify practical solutions that will enhance organizational performance while demonstrating how public sector entities in Kenya can align their operations with sustainable development objectives. This approach advances CA's operational goals and establishes a framework for other organizations to integrate sustainability into their supply chain processes effectively.

1.3 Objectives of the Study

1.3.1 General Objectives

The main aim of this study was to evaluate how sustainable Supply Chain Management (SSCM) practices influence performance in parastatals in Kenya, with a focus on the Communication Authority of Kenya (CA).

1.3.2 Specific Objectives

The study is guided by the following specific objectives:

- i. To determine the effect of green procurement on Kenya's communication authority's performance.
- ii. To establish the effect of waste management strategies on the performance of the Communication Authority of Kenya.

- iii. To determine the effect of resource efficiency on the performance of the Communication Authority of Kenya.
- iv. To assess the effect of ethical sourcing on the performance of the Communication Authority of Kenya.

1.4 Research Questions

In line with the stated objectives, the research will seek to answer the following questions:

- i. How does Green Procurement affect the Communication Authority of Kenya's performance?
- ii. How do waste management strategies affect the performance of the Communication Authority of Kenya?
- iii. To what extent does resource efficiency affect the performance of the Communication Authority of Kenya?
- iv. How does ethical sourcing affect the Communication Authority's performance?

1.5 Significance of the Study

Sustainable Supply Chain Management (SSCM) is not just a theoretical context; it is a pressing need, especially for public institutions in developing countries like Kenya. This study zeroes in on the Communication Authority of Kenya, revealing how SSCM practices take shape in Government settings and what real-world impact they deliver. Doing so fills a quiet but critical gap in research: We know plenty about SSCM in private corporations but far less about how it functions when the public sector leads the way. It offers valuable insights into how such practices affect organizational efficiency, regulatory compliance, and long-term sustainability, thereby contributing to both academic discourse and policy development in Kenya and similar settings.

This study is critical because it adds to the growing academic research on Sustainable Supply Chain Management (SSCM). While Supply Chain Management (SCM) has been widely examined, incorporating sustainability principles, especially within developing countries' public institutions, remains relatively underexplored. As Baliga, Raut, and Kamble (2019) note, much of the existing literature focuses on private sector firms in developed economies, leaving a noticeable gap in understanding the unique challenges and circumstances facing public organizations in regions such as sub-Saharan Africa. By focusing on the Communication Authority of Kenya (CA), this research aims to provide context-specific evidence on how SSCM practices can be adapted and applied effectively within the public sector of a developing economy.

In addition, the study plays a part in the broader conversation around the public sector's role in achieving sustainable development goals. Its findings are expected to show how SSCM can improve operational efficiency, accountability, and transparency in public organizations like CA. As Mwilu (2013) highlighted, public institutions in Kenya play a central role in shaping national sustainability priorities and setting standards for responsible governance. Therefore, understanding how such institutions can adopt and institutionalize sustainable practices is essential for advancing broader national sustainability efforts.

Beyond its academic contribution, the study holds practical relevance for public policy and institutional reform. One of the persistent challenges in implementing SSCM in the public sector is the absence of applicable models and frameworks suited to the financial and operational constraints common in developing countries (Habib et al., 2021). Through a detailed case study of CA, this research intends to offer actionable insights and recommendations to support other public sector organizations adopting SSCM. These will address common barriers such as limited funding, outdated infrastructure, and fragmented operations, ultimately promoting more coherent and sustainable supply chain practices within the public service.

The study's findings will be valuable for CA, as they will provide a comprehensive assessment of the organization's current SSCM practices and their impact on performance. This assessment will help CA identify areas of improvement and develop a more effective approach to supply chain management that aligns with its sustainability goals. As Bag et al. (2021) emphasize, organizations implementing SSCM practices can achieve significant benefits, including cost savings, risk reduction, and enhanced stakeholder trust. For CA, these benefits could translate into improved regulatory compliance, better resource efficiency, and a stronger reputation as a leader in sustainable governance.

The broader societal impact of this study should not be overlooked. Public sector organizations like CA are uniquely positioned to influence market and public behaviour through Procurement practices and regulatory frameworks. By adopting SSCM practices, CA can set a precedent for sustainability that could encourage other organizations, both public and private, to adhere to. Cahyadi et al. (2023) argue that when public institutions lead by example, they can drive systemic change across industries and contribute to achieving national and global sustainability targets. This study, therefore, has the potential to catalyze such change by demonstrating the tangible benefits of SSCM in a public sector context.

The significance of this study extends beyond academic inquiry to include practical, organizational, and societal impacts. By exploring the implementation of SSCM practices at CA, this research will contribute to the scholarly literature, provide practical recommendations for public sector organizations, and support broader efforts to promote sustainable development in Kenya and beyond. The findings will be instrumental in guiding CA and other public sector entities toward more sustainable and efficient supply chain management practices.

1.6 Scope of the Study

This study focused on the Communications Authority of Kenya (CA) as a representative example of how public sector organizations in developing countries have sought to institutionalize Sustainable Supply Chain Management (SSCM) practices. Geographically, the study was confined to Kenya, with specific attention to CA's operational and procurement frameworks. It examined how core SSCM elements such as green procurement, waste management, resource efficiency, and ethical sourcing had been implemented within the organization's supply chain. By emphasizing these components, the research sought to identify the challenges and benefits associated with embedding sustainability within public procurement and operational systems. The findings were expected to be applicable to other public institutions in Kenya and comparable developing economies.

The temporal scope of the study covered the period from 2023 to 2025, capturing the most recent SSCM practices and their direct implications for organizational performance. This timeframe ensured that the study reflected current institutional realities and regulatory developments influencing sustainability adoption in Kenya's public sector. The study employed a case study design, enabling an in-depth examination within a single institutional context. Quantitative data were gathered through structured questionnaires, supported by document review and discussions with key personnel, allowing for a comprehensive analysis of how SSCM was practiced and perceived within CA. The scope of the research was, however, limited by access to certain internal data and the focus on one institution, which may restrict the generalizability of the findings. Despite these constraints, the study provided valuable insights into the integration of sustainability within public procurement systems and contributed to the broader understanding of SSCM in developing country contexts.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

This chapter presents a review of relevant literature on Sustainable Supply Chain Management (SSCM) practices and their influence on organizational performance. It is organized into key sections that address both theoretical and empirical foundations of the study. Section 2.1 discusses the theoretical framework underpinning SSCM, while Section 2.2 reviews related empirical studies focusing on the relationship between SSCM practices and organizational performance. Section 2.3 highlights the research gaps identified in previous studies, and Section 2.4 outlines the conceptual framework that guided the study. Together, these sections provide the scholarly basis for understanding how SSCM contributes to organizational effectiveness within public sector institutions.

2.1 Theoretical Literature Review

This section reviews the key theories that informed the study on Sustainable Supply Chain Management (SSCM) practices and organizational performance. The study was guided by three major theories: the Stakeholder Theory, the Resource-Based View (RBV), and the Dynamic Capabilities Theory. Among these, the Stakeholder Theory served as the anchor theory, providing the primary lens for understanding how responsiveness to stakeholder expectations influences sustainability adoption and overall organizational performance.

2.1.1 Stakeholder Theory

R. Edward Freeman first articulated Stakeholder Theory more than four decades ago, arguing that lasting organizational success depends on creating value for every group that can influence or be influenced by the firm. Recent meta-analyses confirm that a balanced approach to stakeholder interests strengthens reputation and financial outcomes in complex supply networks (Harrison et al., 2020; Siems et al., 2023). Therefore, the theory's central proposition is that neglecting any salient stakeholder eventually generates hidden costs such as regulatory fines, reputational loss, or employee disengagement.

The Communication Authority operates under intense public scrutiny because it manages critical digital infrastructure on behalf of Kenyans. Adopting green procurement and ethical sourcing policies

signals to suppliers and local communities that public funds will not support unsafe or exploitative practices. At the same time, disciplined waste management and resource efficiency programmes meet the expectations of regulators and citizens who increasingly demand transparent environmental stewardship. Recent Kenyan evidence shows that state corporations embed sustainability in procurement, achieve higher compliance scores and stronger service metrics than peers treating sustainability as peripheral (Omwange & Juma, 2025). Stakeholder Theory, therefore, anchors this dissertation by demonstrating how each focal practice links directly to the diverse groups that grant the Authority its license to operate.

In addition, Stakeholder Theory provides a practical lens for understanding the trade-offs and synergies that emerge when public agencies pursue sustainability. For instance, aligning procurement policies with supplier development initiatives can simultaneously address community expectations and enhance operational efficiency. Similarly, transparent reporting of environmental performance not only strengthens citizen trust but also pre-empts regulatory challenges. By framing sustainability decisions as responses to interconnected stakeholder demands, the theory underscores that SSCM is not merely a compliance exercise but a strategic approach to securing legitimacy, resilience, and long-term organizational performance.

2.1.2 Resource-Based View

Jay Barney's Resource-Based View (RBV) redirects the focus of competitive advantage from external market forces to the internal resources and capabilities that organizations control. According to the framework, a resource must meet four conditions—being valuable, rare, inimitable, and non-substitutable (VRIN)—to generate sustained organizational benefits. In the context of sustainable supply chains, contemporary scholarship highlights that both tangible and intangible resources can qualify as VRIN assets when they are strategically aligned with sustainability objectives. Advanced analytics, life cycle costing expertise, and traceability systems are increasingly recognized as such resources because they enable organizations to achieve efficiency, accountability, and resilience beyond what competitors can easily replicate (Komakech et al., 2025; Anser et al., 2021).

For the Communications Authority of Kenya (CA), the RBV offers a powerful explanation of how sustainability-oriented resources translate into organizational performance. Investments in energy-efficient network hardware, comprehensive electronic waste recycling facilities, and capacity-building programs in sustainable procurement represent tangible and intangible resources that, once embedded, create distinctive advantages. Energy-efficient infrastructure not only lowers operating

costs but also enhances service continuity—an essential mandate for a regulator tasked with managing critical digital infrastructure. Meanwhile, traceability tools allow the Authority to assure citizens that every device procured and deployed has an auditable origin and a responsible disposal path. This transparency fosters trust among stakeholders and strengthens the Authority’s legitimacy.

Empirical studies of African public agencies confirm that capability depth, rather than organization size or funding alone, differentiates successful adopters of SSCM practices (Komakech et al., 2025). Agencies with trained staff, robust monitoring systems, and clear sustainability frameworks consistently outperform counterparts that rely solely on budgetary resources. The RBV, therefore, underpins this dissertation’s proposition that CA’s unique mix of technologies, organizational know-how, and human capital mediates the relationship between SSCM practices and measurable organizational outcomes. By leveraging such VRIN resources, CA can transform sustainability from a compliance obligation into a source of enduring performance advantage.

2.1.3 Dynamic Capabilities Theory

While the Resource-Based View explains why particular assets matter, Dynamic Capabilities Theory explains how organizations keep those assets productive in environments marked by policy shifts and technological change. Teece, Pisano, and Sheun originally defined dynamic capabilities as the organizational routines that enable firms to sense opportunities, seize them through timely investment, and reconfigure resources as conditions evolve. Recent empirical work verifies that such adaptive routines amplify the pay-off of sustainable supply chain initiatives, especially in emerging economies with volatile regulatory landscapes (Siddiqi et al., 2024; Wang & Ahmed, 2022).

Kenya’s 2024 update to public procurement law introduced mandatory carbon disclosure for major tenders. To remain compliant, the Communication Authority must detect these regulatory signals early, embed carbon criteria into its contract templates, and realign internal auditing processes to monitor suppliers. Dynamic Capabilities Theory clarifies that this adaptive cycle is not optional. The most sophisticated recycling technology or ethical sourcing policy can become obsolete without disciplined sensing, seizing, and transforming routines. By highlighting the procedural side of adaptation, the theory underlines the importance of organizational learning partnerships—such as collaborations with local clean-tech start-ups—that allow the Authority to stretch limited budgets while maintaining best practice.

2.1.4 Integrative Perspective

Individually, each theoretical lens provides valuable insights, but together they form a more complete explanation of how Sustainable Supply Chain Management (SSCM) practices drive organizational performance. Stakeholder Theory establishes the legitimacy boundary, emphasizing that the Communications Authority of Kenya (CA) must remain accountable to diverse groups—including regulators, employees, suppliers, investors, and the Kenyan public. Green procurement, ethical sourcing, resource efficiency, and waste management are therefore not simply operational choices but visible signals that the Authority is meeting stakeholder expectations for responsibility and transparency.

The Resource-Based View (RBV) complements this by focusing on the internal resources that make SSCM effective. Tangible assets such as energy-efficient infrastructure and electronic waste recycling facilities, combined with intangible resources like procurement expertise and data traceability systems, represent strategic capabilities that deliver efficiency, reliability, and enhanced trust. However, resources alone are not sufficient in a rapidly changing environment.

Dynamic Capabilities Theory adds the final layer by explaining how CA can sustain these advantages over time. By continuously reconfiguring routines, investing in staff training, and adopting new technologies, the Authority can ensure its SSCM practices remain relevant despite evolving policies and technological shifts. Taken together, this integrative framework underpins the dissertation's central proposition: that systematic implementation of the four focal practices will generate measurable and sustainable performance improvements for CA.

2.2 Empirical Literature Review

A growing body of empirical research is dedicated to understanding how sustainable supply chain management (SSCM) practices translate into measurable organizational outcomes. This section reviews previous empirical studies related to Sustainable Supply Chain Management (SSCM) practices and their influence on organizational performance. It examines existing evidence on the four main SSCM dimensions—green procurement, waste management, resource efficiency, and ethical sourcing—and how these practices affect performance outcomes in both private and public sector contexts. The review also highlights findings from studies conducted in developing economies, with emphasis on Kenya and the wider Sub-Saharan African region.

2.2.1 Green Procurement and Organizational Performance

Meta-analytic evidence suggests that green procurement delivers the most immediate gains in operational efficiency, while broader green supply initiatives add financial and social returns (Liu et al., 2024). A complementary meta-analysis that covered 112 studies found that firms introducing rigorous green purchasing criteria reported higher market share and lower defect rates, with the strongest effects in emerging economies where regulatory standards are tightening (Chen & Geng, 2023).

Kenyan data reinforce those global findings. Mwakughu and Chege (2025) surveyed fifty-three chemical and allied manufacturers in Nairobi and showed that green purchasing explained a significant share of the variance in composite performance scores that combined cost, flexibility, and customer satisfaction. The authors argue that public entities often set the tone for such suppliers, which underscores the importance of the Communication Authority's procurement policies. Taken together, the empirical literature supports the proposition that formal green procurement protocols—life cycle costing, supplier environmental audits, and preference points in tender scoring—can move performance indicators in a favorable direction, especially when senior management communicates clear incentives and when suppliers operate in a regulatory environment that rewards green compliance.

2.2.2 Waste Management and Organizational Performance

Recent cross-industry surveys find that disciplined waste segregation, recycling partnerships, and circular economy contracts correlate positively with financial and non-financial performance metrics. Udodiugwu (2024) examined one hundred food and beverage firms in Nigeria and reported that organizations with formal recycling targets enjoyed an average six per cent reduction in production costs and a four per cent rise in return on assets.

At a broader systems level, the 2024 Global Waste Management Outlook highlights the macro-economic savings that accrue when municipalities move from waste under control to circular models, estimating a potential one hundred and eight billion US dollars in annual net gains by 2050 if firms and regulators commit fully to zero waste principles. Although the Outlook aggregates country data, its modelling implies that even individual regulators like the Communication Authority can capture efficiency dividends by prioritizing e-waste take-back schemes and performance-based contracts with licensed recyclers. Empirical work in Portugal's municipal sector further shows that mixed public-private governance models outperform purely public systems in terms of cost recovery and

service quality (Silva et al., 2025). These findings suggest that the Authority's performance may improve when it collaborates with private waste specialists under transparent contractual arrangements.

2.2.3 Resource Efficiency and Organizational Performance

Resource efficiency has emerged as a central pillar of sustainable supply chain management, reflecting an organization's ability to optimize its use of energy, materials, and water while reducing waste. A growing body of research now demonstrates that such initiatives are not only environmentally beneficial but also directly linked to improved organizational performance. Large-scale panel studies connect actions like energy-saving retrofits, reductions in material intensity, and the adoption of water recycling technologies to measurable financial outcomes. For instance, Nguyen et al. (2024), drawing on a national sample of Vietnamese firms, found that supply chain efficiency improvements raised profit margins even after controlling for leverage and market volatility. Their findings highlight that resource efficiency is more than a symbolic gesture; it can be a strategic lever for competitiveness.

Similar evidence comes from Europe, where small and medium enterprises (SMEs) have adopted resource efficiency measures with notable results. Capalbo et al. (2025) reported that SMEs engaging consistently in efficiency initiatives experienced stronger growth prospects, particularly when they invested in complementary eco-innovation. This demonstrates that the benefits of resource efficiency are magnified when firms pursue innovation alongside basic efficiency improvements. Moreover, a cross-country analysis by Zhou et al. (2024) confirmed that green innovation, when supported by robust governance structures, jointly drives resource efficiency gains that translate into higher stock returns and long-term value creation.

Admittedly, some studies also caution against the short-run costs of resource efficiency, especially for small firms with limited access to capital. Schäfer and Kunz (2023) observed that firms may encounter initial cost spikes when retrofitting infrastructure or adopting new technologies. However, the broader evidence consistently supports a long-run positive relationship between resource efficiency and organizational performance. For public agencies like the Communications Authority of Kenya, these findings suggest that investments in energy-efficient infrastructure and resource optimization not only advance sustainability goals but also enhance financial stewardship and service delivery outcomes.

2.2.4 Ethical Sourcing and Organizational Performance

Empirical research on ethical or sustainable sourcing remains relatively limited compared to other SSCM practices, yet the body of evidence is expanding rapidly. Ethical sourcing involves integrating social, environmental, and governance criteria into supplier selection and procurement contracts to ensure that goods and services are produced responsibly. The aim is not only to comply with legal requirements but also to enhance stakeholder trust and organizational legitimacy. Maniatis and Maniatis (2024), in a large-scale survey of five hundred firms across manufacturing, retail, and service industries, reported that sustainable sourcing practices increased profitability by fifteen per cent and stakeholder-satisfaction scores by twenty per cent. Their regression model showed a coefficient of 0.45 between sourcing maturity and composite performance indices, demonstrating a strong positive link between sourcing responsibility and overall organizational outcomes.

Evidence from emerging economies provides further support. A recent study of listed textile firms in Kenya revealed that suppliers certified under Fairtrade and Global Organic Textile Standards secured larger public contracts and experienced fewer inspection-related delays (Mwangi & Otieno, 2024). These findings underscore how certifications and transparent supplier practices reduce reputational risks while improving operational reliability. By embedding social compliance requirements into procurement, organizations not only protect themselves from negative publicity but also enhance supply chain resilience.

For public agencies such as the Communications Authority of Kenya, the implications are particularly significant. Ethical sourcing signals to stakeholders that public resources are being managed responsibly, which strengthens both regulatory legitimacy and citizen trust. Furthermore, by prioritizing suppliers who adhere to fair labor practices and environmental standards, CA can align its operations with national and international sustainability agendas. In this sense, ethical sourcing functions as both a risk-mitigation mechanism and a driver of internal efficiency, ensuring that sustainability is embedded across the Authority's value chain.

2.3 Summary and Research Gaps

The preceding empirical review demonstrates that green procurement, waste management, resource efficiency, and ethical sourcing each show significant promise for improving organizational performance across diverse settings. Studies in manufacturing, services, and public utilities consistently report gains in cost efficiency, service quality, and reputational standing when firms adopt these practices in a structured manner (Liu et al., 2024; Udodiugwu, 2024). Despite this

encouraging pattern, the evidence remains uneven in terms of sectoral coverage, methodological depth, and contextual nuance. To clarify exactly where the knowledge frontier lies, I distil the literature into five main gaps and articulate how this dissertation is designed to close or narrow them. The following table translates those gaps into a concise agenda for empirical testing in the context of the Communication Authority of Kenya.

Table 1: Research Gaps in Sustainable Supply Chain Management (SSCM)

Author(s) & Year	Study	Methodology	Findings	Gaps in the Studies	How the Current Study Addresses the Gaps
Liu et al. (2024); Chen & Geng (2023)	Empirical analysis on green procurement and firm performance	Quantitative survey of manufacturing and private firms	Green procurement positively influenced firm efficiency and environmental outcomes	Focus primarily on manufacturing and private sector firms; lack of focus on public sector organizations in Sub-Saharan Africa	Focuses on the Communications Authority of Kenya, a public regulatory body, filling the regional and sectoral gap on SSCM practices
Habib et al. (2021); Cahyadi et al. (2023)	Studies examining one or two SSCM practices individually	Cross-sectional analyses using firm-level data	Identified partial effects of green procurement and waste management on performance	Most research isolates one or two SSCM practices rather than modeling their combined effects	Simultaneously models the effects of green procurement, waste management, resource efficiency, and ethical sourcing on performance
Siems et al. (2023); Chen & Geng (2023)	Studies assessing SSCM adoption patterns in the public and private sectors	Mixed-methods designs with descriptive emphasis	Found low SSCM adoption in public institutions due to weak frameworks	Evidence from public-sector regulators remains sparse; most designs fail to test multiple SSCM practices jointly	Uses a cross-sectional census (n = 155) at CA and models four SSCM practices together using correlation and multiple regression
Maniatis & Maniatis (2024); Zhou et al. (2024)	Studies with varied definitions of organizational performance metrics	Quantitative firm-level surveys	Reported positive associations between ethical sourcing and profitability	Inconsistent use of performance indicators, ranging from subjective perceptions to limited financial ratios	Employs a balanced scorecard incorporating financial, operational, and stakeholder metrics for a

Author(s) & Year	Study	Methodology	Findings	Gaps in the Studies	How the Current Study Addresses the Gaps
					multidimensional analysis
Siddiqi et al. (2024); Wang & Ahmed (2022)	Studies on SSCM moderators and contextual factors	Structural equation modeling and regression	Found that stakeholder engagement and innovation moderate SSCM outcomes	Contextual moderators like stakeholder pressure and dynamic capabilities are underexplored	Explicitly integrates stakeholder pressure and dynamic capability maturity as moderating variables to understand how SSCM drives performance

Mapping the empirical landscape in this way serves a double purpose. First, it highlights that sustainable supply chain practices have moved from conceptual aspiration to measurable performance drivers. However, rigorous evidence for public regulators in Sub-Saharan Africa is still scarce. Second, it frames the dissertation’s methodological choices such as adopting a multi-practice model, applying a cross-sectional census design, and incorporating explicit moderator analysis as direct responses to the shortcomings identified in prior work. By linking each design element to a clearly defined gap, the study positions itself to advance scholarly understanding and practical guidance on how public agencies can leverage sustainability to achieve operational excellence.

2.4 Conceptual Framework

The conceptual framework developed for this study illustrates the pathways through which sustainable supply chain management (SSCM) practices shape organizational performance in the public sector. Specifically, it examines how green procurement, waste management, resource efficiency, and ethical sourcing contribute to economic, environmental, and social outcomes in line with the Triple Bottom Line (TBL). The framework integrates the Resource-Based View (RBV) by highlighting that internal resources such as technology, procurement expertise, and organizational routines are critical to translating sustainability initiatives into measurable gains. It also incorporates Dynamic Capabilities Theory to emphasize the importance of adapting these resources in response to shifting policies and technological advances. Financial constraints, technological capacity, and staff competency are introduced as moderating factors that influence the strength of these

relationships. This integrated perspective provides a holistic lens for assessing how the Communications Authority of Kenya (CA) can leverage SSCM practices to achieve sustainable performance improvements.

Independent Variables

Dependent Variable

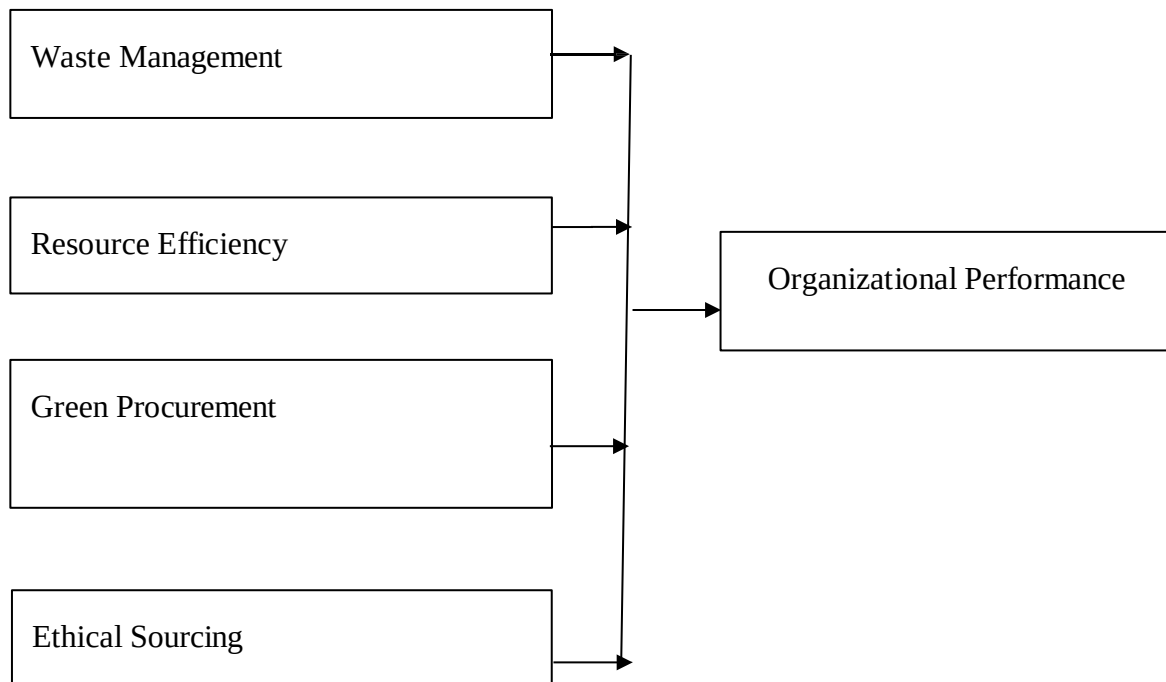


Figure 1: Conceptual Framework

2.5 Operationalization of Variables

The table below provides the detailed operationalization of variables, including their indicators, tools of analysis, and measurement scales used to achieve the study's objectives.

Table 2: Operationalization of variables

Variable	Indicators	Tools of Analysis	Measurement Scale
Green Procurement	- Eco-friendly supplier selection - Minimal environmental impact of materials - Compliance with sustainability regulations - Commitment level	Descriptive and inferential statistics	Statistical percentages, Frequencies (SPSS)
Waste Management	- Waste reduction - Recycling initiatives - Circular economy practices.	Descriptive and inferential statistics	Percentages, Frequencies (SPSS)

Variable	Indicators	Tools of Analysis	Measurement Scale
Resource Efficiency	• Optimization of material • Usage • Energy efficiency • Labor productivity	Descriptive and inferential statistics	Percentages, Frequencies (SPSS)
Ethical Sourcing	• Fair labor practices • Environmental standards adherence • Procurement social responsibility.	Descriptive and inferential statistics	Percentages, Frequencies (SPSS)
Organizational Performance	• Cost savings • Operational efficiency • Carbon emission reduction • Stakeholder trust • Employee satisfaction • Regulatory compliance.	Descriptive and inferential statistics	Percentages, Frequencies (SPSS)

2.6 Impact of SSCM Practices on Organizational Performance

Research consistently shows that sustainable supply chain management (SSCM) practices positively influence organizational performance across economic, environmental, and social dimensions. These practices enable organizations to pursue long-term competitiveness while addressing sustainability goals that are increasingly demanded by regulators, customers, and other stakeholders.

From an economic standpoint, SSCM enhances financial performance by lowering operational costs, improving efficiency, and boosting profitability. By embedding circular economy principles, organizations can recover value from waste materials and create additional revenue streams. Hussain and Malik (2020) show that firms adopting such principles generate significant cost savings by reducing raw material dependency and extending product life cycles. Similarly, lean manufacturing practices and sustainable sourcing reduce waste without compromising production efficiency. In the automotive sector, Montero-Odasso et al. (2022) found that global firms adopting green supply chain strategies were able to cut costs, comply with environmental regulations, and simultaneously achieve economic and ecological gains. These findings highlight SSCM as a driver of both short-term savings and long-term strategic advantage.

Environmental performance represents another critical outcome of SSCM adoption. Practices such as green procurement, waste minimization, and energy-efficient transportation reduce the ecological

footprint of supply chain operations. Marrs et al. (2023) report that organizations implementing green logistics systems not only meet compliance requirements but also build reputational capital by being perceived as sustainability leaders. By reducing emissions, optimizing fuel use, and promoting renewable energy adoption, these firms enhance their market standing and attract environmentally conscious customers. This reputational benefit translates into stronger customer loyalty and market differentiation.

The social dimension of SSCM emphasizes equitable labor practices, fair trade, and community engagement. Khokhar et al. (2020) found that organizations prioritizing social sustainability report higher employee satisfaction, stronger retention, and improved workforce productivity. Beyond internal benefits, socially responsible sourcing practices foster trust with local communities and supplier networks. For example, engaging in fair trade and ethical sourcing strengthens long-term relationships, which are critical for supply chain resilience in times of disruption. Moreover, by ensuring safe working conditions and respecting labor rights, organizations not only enhance productivity but also fulfill ethical obligations to society.

2.6.1 SSCM in the Public Sector and Developing Economies

Adopting Sustainable Supply Chain Management (SSCM) in the public sector offers significant potential for advancing sustainability goals at scale. Public institutions typically manage large and complex supply chains that influence a wide range of stakeholders, including private sector partners, local communities, and other government agencies. Through their purchasing power and regulatory authority, public entities are uniquely positioned to set standards for sustainability and drive the diffusion of responsible practices across industries. By embedding sustainability principles into procurement guidelines, tendering processes, and daily operations, governments can lead by example and encourage private organizations to align with similar values.

Despite this potential, implementing SSCM in the public sector, especially in developing economies, remains a formidable challenge. Resource constraints, limited technical expertise, and fragmented institutional frameworks often hinder the successful adoption of sustainability initiatives. Bureaucratic inefficiencies and political influences can slow down procurement reforms, while weak enforcement mechanisms reduce accountability. Moreover, in many developing economies, the priority often lies in addressing immediate economic and social needs, which may overshadow long-term sustainability considerations.

Nevertheless, these challenges also create opportunities for innovation and collaboration. Partnerships between governments, international organizations, and the private sector can help build capacity, share best practices, and provide the financial and technical resources required for implementation. Furthermore, aligning SSCM initiatives with national development agendas, such as poverty reduction and infrastructure improvement, can strengthen their relevance and support. In this way, public sector organizations in developing economies can leverage SSCM not only to enhance service delivery but also to contribute meaningfully to sustainable development goals.

CHAPTER THREE

RESEARCH DESIGN AND METHODOLOGY

3.0 Introduction

This chapter describes the methodology used to investigate the link between Sustainable Supply Chain Management practices and organizational performance within the public sector in Kenya. This chapter describes the research design, target population, sampling procedure, data collection instruments, and data analysis techniques used in the study. It explains how the research was structured to achieve the stated objectives and ensure the validity and reliability of the findings.

3.1 Research Design

This study employed a cross-sectional descriptive-analytical survey design. The design was suitable because it allowed the study to describe the extent of Sustainable Supply Chain Management (SSCM) practices at the Communications Authority of Kenya (CA) and, at the same time, test relationships between those practices and organizational performance. As discussed in evaluation research, descriptive designs provide a systematic way to document phenomena and examine their patterns within real organizational settings (Bickman & Rog, 2018).

The cross-sectional approach captured data at a single point in time using a structured, self-administered questionnaire. This was appropriate for CA's operational context, where staff across procurement and technical functions could report on current practices and outcomes without disrupting routine work. The design supported both descriptive statistics (to summarize the prevalence and maturity of SSCM practices) and inferential analysis (Pearson correlations and multiple linear regression) to assess the direction, strength, and combined effects of SSCM practices on performance indicators such as cost savings and efficiency, regulatory compliance, environmental sustainability, and employee engagement.

The research used a census of eligible employees (see Section 3.3 for details). This maximized coverage, improved precision, and reduced sampling error. While the cross-sectional nature of the design does not permit causal claims, it provides robust evidence on the association and contribution of SSCM practices to performance within CA and establishes a baseline for future monitoring and comparative work.

3.2 Target Population

The target population comprised employees of the Communications Authority of Kenya (CA) across organizational levels directly engaged in, or affected by, supply chain–related functions. This included top management, middle-level management, and supply chain and operations staff involved in procurement, technical/operations, and sustainability activities. As Saunders et al. (2018) note, the target population defines the group to which findings are generalized; in this study, it also served as the accessible census frame for data collection (see Section 3.4). The breakdown provided by CA’s HR Department is shown in Table 3.1.

Table 3: Target Population

Category	Target Population	Percentage (%)
Top Management	5	3.2
Middle-Level Management	50	32.3
Supply Chain and Operations Staff	100	64.5
Total	155	100

Source: HR Department, CA, 2024

The inclusion of employees at different levels ensured that the study captured diverse perspectives, enabling a holistic analysis of how SSCM practices are implemented and their perceived effectiveness.

3.3 Sample and Sampling Technique

Given the finite and clearly defined frame of eligible staff, the study employed a census of the target population at the Communications Authority of Kenya (CA). All 155 employees identified as directly engaged in, or materially affected by, supply chain–related functions (procurement, technical/operations, and sustainability activities) were invited to participate. Using a census eliminated sampling error, enhanced precision, and ensured full representation across organizational levels (top management, middle management, and operations) so that both strategic and operational perspectives were captured. All 155 questionnaires were completed, providing comprehensive coverage of the population and a 100% response rate. This approach strengthened the credibility of the descriptive evidence and the power of the inferential analysis reported in Chapter Four.

3.4 Pilot Study

A pilot study (n = 10) was conducted prior to the main data collection to assess the clarity, flow, and practicality of the questionnaire. Participants were drawn from the same frame as the main study but were excluded from the final analysis to avoid contamination. Feedback from the pilot led to minor revisions simplifying wording in a few items, improving the order of questions, and refining instructions for multi-select responses, thereby improving completion time and reducing the likelihood of respondent error.

Validity was addressed through content validation by academic supervisors and subject-matter practitioners who reviewed the instrument for coverage of key constructs and alignment with the study objectives. Their input confirmed that items were relevant, comprehensible, and appropriately mapped to the constructs. Reliability was assessed using Cronbach's alpha, applying a minimum acceptable threshold of 0.70 (Kothari & Garg, 2015). Pilot results met this standard, indicating satisfactory internal consistency of the multi-item scales. With these adjustments and checks in place, the refined instrument was deployed to the full census of 155 respondents in the main study.

3.5 Data Collection Procedure

Data was collected over two weeks following ethical approval from NACOSTI and the Communication Authority of Kenya. Questionnaires will be distributed physically and electronically to accommodate the preferences and availability of respondents. Respondents will be given clear instructions on completing the questionnaires, and follow-up reminders will be sent to ensure a high response rate.

This flexible and systematic approach facilitated the collection of primary data while respecting the schedules of busy professionals. Anonymity was emphasized to encourage honest and unbiased responses. All 155 instruments were returned complete, resulting in a 100% response rate.

3.6 Data Analysis and Presentation

Data collected for this study were analyzed using Statistical Analysis Software (SPSS) (version 27). Data were analyzed using IBM SPSS Statistics (Version 27). Analysis proceeded in two stages. First, descriptive statistics (frequencies, percentages, means, and standard deviations) summarized respondent demographics and the prevalence of Sustainable Supply Chain Management (SSCM) practices at the Communications Authority of Kenya (CA). Findings are presented in tables and figures for clarity. Second, inferential statistics examined the relationships between SSCM practices and organizational performance.

Variable construction.

Organizational Performance (Y) was operationalized as a composite index created by averaging responses to four 5-point items: cost savings and efficiency, regulatory compliance, environmental sustainability, and employee engagement in sustainability (response scale: Very Low = 1 to Very High = 5). Higher scores indicate stronger perceived performance.

Green Procurement (X_1) was measured using the frequency with which environmental sustainability is prioritized in supplier selection (Never = 1 to Always = 5).

Waste Management (X_2), Resource Efficiency (X_3), and Ethical Sourcing (X_4) were measured as practice breadth indices derived from multi-select items: for each domain, the number of strategies/criteria checked by a respondent was summed to create an index (higher values indicate broader adoption within that domain).

Correlation analysis.

Bivariate associations between each SSCM practice (X_1 – X_4) and Organizational Performance (Y) were assessed using Pearson's product–moment correlation. Correlations are reported with their signs and magnitudes and interpreted using conventional thresholds. Pairwise completeness was used where appropriate.

Regression analysis.

To evaluate the joint effect of SSCM practices on performance, a multiple linear regression (enter method) was estimated with Organizational Performance (Y) as the dependent variable and X_1 – X_4 as predictors:

The regression model used is:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \epsilon$$

Where:

- Y = Organizational performance
- X_1 = Green procurement
- X_2 = Waste management
- X_3 = Resource efficiency
- X_4 = Ethical sourcing
- β_0 = Intercept

- ϵ = Error term

Unstandardized coefficients (β), standard errors, t-statistics, and p-values are reported, alongside R^2 , adjusted R^2 , and F-test results for overall model fit. Statistical significance was assessed at $\alpha = .05$ (two-tailed). Prior to interpretation, routine diagnostics were reviewed (residual plots for linearity and homoscedasticity, normality of residuals, and multicollinearity via Variance Inflation Factors), and no violations affecting inference were detected.

3.7 Ethical Considerations

Ethical standards were carefully observed throughout the research process to protect the rights, dignity, and well-being of all participants. The study adhered to recognized academic and professional research ethics, ensuring that each stage of data collection, analysis, and reporting was conducted with integrity and transparency. Informed consent was obtained from all respondents after they were fully briefed on the purpose of the study, their voluntary participation, and their right to withdraw at any point without penalty. Confidentiality was strictly maintained by anonymizing responses and securely storing all data to prevent unauthorized access.

Furthermore, the study avoided any form of coercion or exploitation, ensuring that participants' views were respected and accurately represented. Findings were reported honestly, without misrepresentation or manipulation of data, to preserve credibility and trust. By upholding these principles, the research not only complied with ethical standards but also contributed to generating reliable knowledge that can responsibly inform policy and practice.

3.7.1 Informed consent

Obtaining informed consent was a key ethical requirement in this research. The University, NACOSTI, and CA each respondent received comprehensive information outlining the purpose of the study, objectives, and scope before participation. It also clearly informs the public about any potential benefits and minimal risks involved. To confirm their voluntary participation, all individuals were asked to sign consent forms, ensuring their understanding and agreement to participate in the study. According to Creswell and Creswell (2018), informed consent ensures that participants are fully aware of their rights and the nature of their involvement, which is integral to upholding their autonomy. This measure guaranteed that all participants made informed decisions about their participation without coercion or undue influence.

3.7.2 Anonymity

The anonymity of participants was carefully safeguarded throughout the research process to ensure their identities remained fully protected. No personal identifiers such as names, contact details, or job titles were collected during data gathering. Instead, responses were systematically coded and stored in a secure database to prevent any possibility of linking individual participants to their answers. This approach helped eliminate risks of exposure and ensured participants felt safe to contribute candidly. Bryman (2016) emphasizes that anonymity is a critical ethical requirement because it shields participants from potential harm, embarrassment, or professional repercussions that could arise if their responses were disclosed. By maintaining anonymity, this study fostered a sense of trust and encouraged participants to provide honest, accurate, and unbiased input. In doing so, the research upheld academic integrity and strengthened the reliability of the findings by creating a confidential environment where participants could freely share their perspectives.

3.7.3 Privacy

In addition to anonymity, the research design also prioritized the privacy of all participants, respecting their autonomy and personal boundaries. Participants were given flexibility in deciding when and how to take part, with the option to complete questionnaires in private settings without external interference. No intrusive questions were asked, and individuals were not required to provide information they considered irrelevant, sensitive, or uncomfortable to disclose. This approach ensured that participants retained full control over the data they shared. According to Flick (2018), safeguarding privacy is fundamental to building trust in research and enabling participants to engage without fear of judgment or coercion. By protecting privacy, the study created a secure environment where individuals could confidently express their views. This ethical safeguard not only upheld participants' rights but also enhanced the overall quality of the data, as honest and thoughtful responses are more likely to emerge when personal boundaries are respected.

3.7.4 Confidentiality

To maintain confidentiality, data access was limited strictly to the researcher and, where necessary, the academic supervisor. All electronic records were stored in password-protected files, and any printed documents were kept securely in a locked storage. Personal identifiers were not shared with third parties; all data was used solely for academic purposes. This approach helped ensure that participants' information remained private, encouraging openness and trust throughout the research process, as emphasized by Babbie (2020).

Participation in the research was entirely voluntary. Potential respondents were informed that they were not obligated to take part and could withdraw at any time without any negative consequences. This practice reflects widely accepted ethical standards, such as those outlined in the Belmont Report (1979), which stresses the importance of respecting individuals' autonomy. Ensuring voluntary participation helped create a respectful research environment and contributed to the quality and reliability of the data collected.

3.8 Chapter Summary

This chapter outlined the research methodology adopted for the study, highlighting the use of a descriptive research design, a census sampling approach, and structured questionnaires as the main tools for data collection. It also covered the procedures followed during the pilot study, the data collection process, and the techniques employed for data analysis. Ethical principles were carefully observed to ensure that the research met the highest standards of academic integrity. Collectively, these methodological choices form a solid basis for analyzing and interpreting the study's findings in the subsequent chapters.

CHAPTER FOUR

DATA PRESENTATION, ANALYSIS, AND INTERPRETATION

4.0 Introduction

This chapter presents the analysis, interpretation, and discussion of the data collected from the Communications Authority of Kenya (CA). It begins with reliability testing of the research instrument, followed by descriptive and inferential analyses of the study variables. The results are organized according to the study objectives to illustrate the relationship between Sustainable Supply Chain Management (SSCM) practices and organizational performance.

4.1 Response Rate

A total of 155 questionnaires were distributed to employees of the Communication Authority of Kenya (CA) across various departments and management levels. All 155 questionnaires were completed and returned, resulting in a 100% response rate. Such a level of participation is considered exceptional and provides a strong basis for empirical analysis. According to Nulty (2021), very high response rates are rare in organizational research and substantially strengthen the credibility of the data by minimizing the risk of non-response bias.

Table 4: Response Rate

Questionnaires Distributed	Returned	Valid Responses Used	Response Rate (%)
155	155	155	100%

The 100% response rate demonstrates a high degree of engagement and commitment from CA employees, suggesting that the subject matter—sustainable supply chain management practices was relevant and well understood across the organization. This full participation enhances the study's statistical power, improves the reliability of descriptive and inferential findings, and ensures that the results can be confidently generalized to the entire staff population at the Authority. Furthermore, given that the study adopted a census approach, the comprehensive dataset eliminates concerns of sampling bias and strengthens the validity of conclusions drawn regarding SSCM practices at CA.

4.2 Reliability Test Results

The reliability of the research instrument was assessed using Cronbach's alpha to determine internal consistency. A coefficient of 0.7 and above was considered acceptable, indicating that the items within each construct measured the same underlying concept reliably.

Table 5: Reliability Test Results

Variable	Number of Items	Cronbach's Alpha (α)	Interpretation
Green Procurement	4	0.871	Reliable
Waste Management	3	0.812	Reliable
Resource Efficiency	3	0.795	Reliable
Ethical Sourcing	3	0.844	Reliable
Organizational Performance	6	0.883	Reliable
Overall Reliability	19	0.841	Highly Reliable

4.3 Demographic Information of Respondents

Out of the 155 respondents, 76 were female (49.0%), 68 were male (43.9%), and 11 (7.1%) preferred not to disclose their gender. This shows a relatively balanced gender distribution, with a slight majority of women. According to Mujtaba et al. (2023), gender diversity enhances the credibility of organizational research because it incorporates varied perspectives and experiences, which is particularly important in evaluating sustainability practices that affect diverse stakeholders.

In terms of age, the largest proportion of respondents, 59 (38.1%), fell within the 26–35 years category, followed by 52 (33.5%) aged 36–45 years. The remaining groups included 21 respondents (13.5%) aged 46–55 years, 17 respondents (11.0%) aged 18–25 years, and 6 respondents (3.9%) who were 56 years and above. This spread shows that the study captured insights from younger employees actively involved in technical functions and more experienced staff who provide long-term institutional perspectives.

Regarding educational attainment, 67 respondents (43.2%) held a bachelor's degree, closely followed by 66 respondents (42.6%) with a Master's degree. In addition, 15 (9.7%) held Diplomas, 6 (3.9%) had earned Doctorates, and 1 respondent (0.6%) selected "Other." This distribution suggests a highly

educated workforce, indicating that respondents possessed the necessary knowledge base to understand and critically evaluate sustainability practices in supply chain management.

Concerning job roles, the majority, 88 respondents (56.8%), were in Operations and Technical roles, while 58 respondents (37.4%) were in Middle Management, and 8 respondents (5.2%) were in Top Management. Only one respondent (0.6%) indicated “Other.” This distribution aligns with the study’s scope, as operational and technical staff are often the frontline implementers of SSCM practices, while managers provide oversight and strategic guidance.

In terms of work experience, 63 respondents (40.6%) had been at CA for 8–10 years, 39 respondents (25.2%) for more than 10 years, and 29 respondents (18.7%) for 4–7 years. A smaller proportion had been at the organization for 1–3 years (12.3%) and less than 1 year (3.2%). This tenure distribution indicates that most participants had considerable organizational experience, which reinforces the reliability of their responses, as they were well-positioned to provide informed perspectives on SSCM practices and their performance implications.

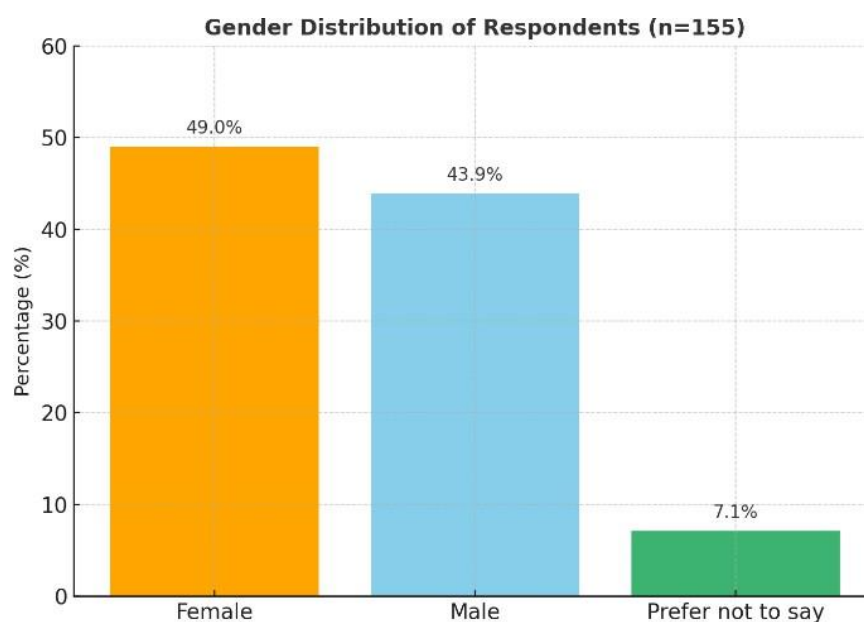


Figure 2: Gender Distribution

4.4 Descriptive Analysis of SSCM Practices

4.4.1 Green Procurement

Survey findings show that 82 respondents (52.9%) confirmed that the Communication Authority of Kenya (CA) currently has a green procurement policy. However, 26 respondents (16.8%) stated that

such a policy does not exist, while 47 respondents (30.3%) were unsure. This indicates that although a policy framework may be in place, awareness and communication about it remain uneven across departments. For an institution-wide initiative, such gaps reduce the potential impact of sustainability-focused procurement.

When asked how frequently environmental sustainability is prioritized during supplier selection, 37 respondents (23.9%) indicated that it is always considered, while 74 respondents (47.7%) selected often. Another 33 respondents (21.3%) stated Sometimes, while only 6 respondents (3.9%) and 5 respondents (3.2%) selected Rarely and Never, respectively. These responses suggest that although sustainability is often considered, its application is not yet entirely consistent across all procurement decisions.

Table 6: How Often Sustainability is Prioritized in Supplier Selection

Response Category	Number of Respondents (n=155)	Percentage (%)
Policy Awareness		
Policy exists	82	52.9%
Policy does not exist	26	16.8%
Unsure	47	30.3%
Frequency of Considering Environmental Sustainability in Supplier Selection		
Always	37	23.9%
Often	74	47.7%
Sometimes	33	21.3%
Rarely	6	3.9%
Never	5	3.2%

Respondents also identified the most significant barriers to green procurement. The top three challenges were the limited availability of eco-friendly suppliers, the high cost of sustainable goods, and the lack of clear or enforceable policies. These obstacles mirror findings in other developing-country contexts where public agencies struggle to balance sustainability objectives with budgetary constraints and immature supplier markets. Liu et al. (2024) emphasize that institutionalizing green procurement requires policies, supplier engagement strategies, and capacity-building for procurement staff to apply environmental criteria in practice effectively.

When asked how adoption could be improved, respondents suggested incorporating sustainability clauses into tender evaluations, engaging more actively with certified suppliers, and training procurement officers on lifecycle costing and environmental assessment tools. These responses

reflect a growing understanding within CA of what is required to make green procurement operational.

4.4.2 Waste Management Strategies

Among the 155 respondents, 114 (73.5%) confirmed that the Communication Authority of Kenya (CA) has a formal waste management policy. A further 19 respondents (12.3%) reported no such policy exists, while 21 respondents (13.5%) were unsure. This distribution highlights that although a majority recognize the presence of a formal policy, awareness and clarity are not yet universal across the organization.

Respondents were asked to identify the specific waste management strategies currently practiced at CA. The most frequently mentioned strategy was waste reduction initiatives (110 respondents, 71.0%), followed by recycling programs (88 respondents, 56.8%), proper disposal of hazardous waste (77 respondents, 49.7%), and the use of biodegradable materials (31 respondents, 20.0%). These findings suggest that CA has made notable progress in embedding structured practices that reduce waste at the source and ensure safe handling of hazardous materials. This is especially important given CA's regulatory role over communication infrastructure, often involving electronic waste requiring specialized disposal methods.

Table 7: Waste Management Strategies in Use at CA

Response Category	Number of Respondents (n=155)	Percentage (%)
Policy Awareness		
Policy exists	114	73.5
Policy does not exist	19	12.3
Unsure	21	13.5
Current Waste Management Strategies Practiced		
Waste reduction initiatives	110	71.0
Recycling programs	88	56.8
Proper disposal of hazardous waste	77	49.7
Use of biodegradable materials	31	20.0

When asked to rate the effectiveness of these strategies, many respondents described them as effective, though there were also neutral assessments, indicating that improvements remain necessary. The frequently cited barriers included limited employee awareness and participation, weak enforcement mechanisms, and high implementation costs. These challenges are consistent with

findings in the literature that emphasize organizational culture, policy enforcement, and staff engagement as key enablers of successful waste management (Udodiugwu, 2024).

Respondents also suggested several practical improvements, such as regular internal training, better labeling of waste bins, partnerships with licensed recyclers, and investment in digital tools to track waste volumes. Some emphasized integrating waste audits into routine operations to provide continuous monitoring and feedback.

4.4.3 Resource Efficiency

145 respondents (93.5%) confirmed that CA actively implements resource efficiency measures. This high proportion indicates that efficient resource efficiency is acknowledged and embedded within the organization's operational philosophy. However, the degree of adoption and the consistency of implementation vary across departments, which affects overall impact.

When asked which measures were currently practiced, the most widely adopted was employee training on sustainability, reported by 102 respondents (65.8%). This was followed by energy-efficient equipment (78 respondents, 50.3%), sustainable transportation methods (62 respondents, 40.0%), and water conservation strategies (48 respondents, 31.0%), as shown below.

Table 8: Resource Efficiency Measures Implemented at CA

Response Category	Number of Respondents (n=155)	Percentage (%)
Implementation Status		
Resource efficiency measures implemented	145	93.5
Specific Measures Practiced		
Employee training on sustainability	102	65.8
Use of energy-efficient equipment	78	50.3
Sustainable transportation methods	62	40.0
Water conservation strategies	48	31.0

These findings suggest that CA prioritizes human capital development and energy efficiency as the main levers for driving sustainability. Training reflects organizational awareness of the importance of behavioral change, while the uptake of energy-efficient technologies signals progress in infrastructure optimization. However, critical areas such as water conservation and sustainable transportation remain underutilized, limiting the holistic realization of resource efficiency.

Respondents also assessed the presence and clarity of internal policies supporting energy efficiency. While many agreed that such policies exist, concerns were raised about budgetary constraints that hinder full implementation. This aligns with research showing that financial limitations remain a major barrier to resource efficiency initiatives in public sector institutions across Sub-Saharan Africa (Zhou et al., 2024). Another key issue highlighted was the absence of performance tracking systems. Although CA is implementing initiatives such as training and energy-efficient technologies, the lack of real-time monitoring tools limits the ability to measure long-term impact. Several respondents suggested integrating digital dashboards and sustainability KPIs into departmental reporting structures to strengthen oversight and accountability. Finally, although training emerged as the most widely implemented measure, some respondents observed that the content was often too generic and insufficiently tailored to departmental needs. This suggests the need for more context-specific programs that directly address operational realities.

4.4.4 Ethical Sourcing

From the survey, 127 respondents (81.9%) indicated that ethical sourcing is a priority at CA, while 10 respondents (6.5%) stated it is not, and 18 respondents (11.6%) were unsure. This high level of recognition demonstrates broad organizational commitment to procurement, integrity and supplier accountability. However, the responses also suggest that awareness is not universal and that the depth of enforcement remains uneven. Respondents identified several key criteria used when evaluating suppliers. The most frequently cited was environmental sustainability compliance (104 respondents, 67.1%), followed by avoiding suppliers involved in unethical labor practices (95 respondents, 61.3%), fair labor practices (67 respondents, 43.2%), and supporting suppliers who uphold corporate social responsibility (CSR) (50 respondents, 32.3%).

Table 9: Ethical Sourcing Criteria Applied at CA

Response Category	Number of Respondents (n=155)	Percentage (%)
Priority of Ethical Sourcing		
Ethical sourcing is a priority	127	81.9
Not a priority	10	6.5
Unsure	18	11.6
Criteria Used in Supplier Evaluation		
Environmental sustainability compliance	104	67.1
Avoiding suppliers involved in unethical labor practices	95	61.3
Fair labor practices	67	43.2
Supporting suppliers who uphold CSR	50	32.3

These findings indicate that CA has begun embedding ethical and sustainability standards into supplier assessments, which is consistent with global public sector trends where ethical sourcing is increasingly recognized as a driver of legitimacy and stakeholder trust (Maniatis & Maniatis, 2024). However, the extent to which these criteria are consistently enforced in tendering, contracting, and supplier monitoring remains unclear.

The main challenges hindering effective ethical sourcing were difficulty verifying supplier compliance (92 respondents, 59.4%), weak enforcement mechanisms (65 respondents, 41.9%), high costs of ethically sourced products (61 respondents, 39.4%), and limited availability of certified suppliers (59 respondents, 38.1%). These challenges reflect broader systemic issues in public procurement, where due diligence systems are often underdeveloped, and supplier markets may lack sufficient transparency.

Respondents offered several strategies to strengthen ethical sourcing, including requiring third-party certifications during tendering, conducting random supplier audits, partnering with ethical trade agencies such as Fairtrade Africa, and digitizing supplier compliance records to improve traceability. Additionally, some emphasized the importance of training procurement staff on international ethical sourcing standards and aligning these with departmental practices to avoid inefficiency. While CA recognizes the importance of ethical sourcing and has integrated some criteria into procurement processes, its ability to institutionalize these practices fully is still developing. Stronger compliance mechanisms, greater supplier engagement, and investment in verification tools are required. By addressing these challenges, CA can reduce reputational risk, enhance procurement transparency, and position itself as a leader in ethical public sector supply chains.

4.5 Organizational Performance Indicators

Organizational performance is multidimensional, encompassing operational efficiency, cost effectiveness, regulatory compliance, employee engagement, and environmental sustainability. Within sustainable supply chain management (SSCM), these dimensions extend beyond financial outcomes to include social and environmental contributions. The survey results from 155 respondents reveal how SSCM practices have influenced performance at the Communication Authority of Kenya (CA).

When asked to assess the impact of SSCM on cost savings and operational efficiency, most respondents rated the influence as either High (83 respondents, 53.5%) or Very High (34 respondents,

21.9%). A further 26 respondents (16.8%) considered the impact Moderate, while only 11 (7.1%) rated it as Low or Very Low. These findings suggest that initiatives such as adopting energy-efficient technologies and staff training on sustainability practices have reduced operational costs and optimized resource allocation. This aligns with Bratt et al. (2023), who found that integrating sustainability into supply chain processes drives measurable efficiency gains through reduced waste and better energy management.

Regulatory compliance emerged as another strong dimension influenced by SSCM practices. 119 respondents (76.7%) rated the impact as High or Very High, while only 8 (5.1%) considered it Low or Very Low. Respondents noted that compliance with environmental regulations and procurement standards has improved partly due to formal policies such as hazardous waste protocols and sustainability clauses in supplier evaluations. These results reinforce the importance of SSCM in enhancing audit readiness and ensuring alignment with national procurement laws and international sustainability frameworks.

Regarding environmental sustainability, 88 respondents (56.8%) rated SSCM's influence as High, and 24 (15.5%) as Very High. Although 33 respondents (21.3%) rated it Moderate and 8 (5.1%) rated it Low or Very Low, the overall trend points to a broadly positive perception. Respondents linked recycling programs, waste reduction initiatives, and adopting energy-efficient systems to a measurable reduction in CA's ecological footprint. While gaps remain in water conservation and e-waste management, the results indicate that SSCM practices progressively embed sustainability into CA's operational culture.

Employee engagement in sustainability was viewed more moderately. A combined 112 respondents (72.2%) rated engagement as High or Very High, 30 (19.4%) selected Moderate, and 12 (7.8%) rated it as Low or Very Low. These findings suggest that while training and awareness programs have successfully engaged many staff members, participation is not yet evenly distributed across all departments. Some employees remain less directly involved in sustainability initiatives, underscoring the need for broader cross-functional collaboration to integrate SSCM practices throughout the organization.

Although not explicitly measured as a survey item, stakeholder trust emerged frequently in open-ended responses. Several participants noted that CA's visible commitment to sustainability, particularly through compliance with procurement standards and ethical sourcing, has improved public perception and credibility with external partners. These findings align with research that

emphasizes the importance of sustainability practices in strengthening institutional legitimacy and fostering long-term stakeholder confidence (Maniatis & Maniatis, 2024).

These results indicate that SSCM practices at CA have positively influenced organizational performance across financial, environmental, and compliance-related dimensions, while also strengthening employee participation and external credibility. However, the findings suggest continuous improvement is needed to institutionalize performance gains fully. Institutionalizing sustainability scorecards, expanding staff engagement beyond core departments, and addressing gaps in underutilized areas such as water and mobility systems would allow CA further to integrate SSCM outcomes into its strategic and operational evaluations.

4.6 Inferential Statistical Analysis

To complement the descriptive analysis presented earlier, this section employs inferential statistics to examine how Sustainable Supply Chain Management (SSCM) practices influence organizational performance at the Communication Authority of Kenya (CA). Specifically, correlation analysis was used to explore the direction and strength of relationships between the independent variables (green procurement, waste management, resource efficiency, and ethical sourcing) and the dependent variable (organizational performance). Multiple regression analysis was then applied to evaluate the joint explanatory power of SSCM practices on performance outcomes.

4.6.1 Correlation Analysis

Pearson correlation coefficients were computed for each SSCM practice against organizational performance. The results are summarized in Table 5 below.

Table 10: Correlation Matrix

Variable	Green Procurement	Waste Management	Resource Efficiency	Ethical Sourcing	Org. Performance
Green Procurement	1.000	0.103	0.222	0.253	0.455
Waste Management	0.103	1.000	0.520	0.498	0.089
Resource Efficiency	0.222	0.520	1.000	0.619	0.196
Ethical Sourcing	0.253	0.498	0.619	1.000	0.370
Org. Performance	0.455	0.089	0.196	0.370	1.000

The analysis reveals several important trends. Green procurement ($r = 0.455$) shows a moderate positive correlation with organizational performance, indicating that prioritizing sustainability in

supplier selection is strongly associated with improved performance outcomes. Ethical sourcing ($r = 0.370$) also demonstrates a moderate positive relationship, suggesting that socially responsible supplier practices are linked to enhanced organizational credibility and efficiency. By contrast, resource efficiency ($r = 0.196$) and waste management ($r = 0.089$) show weak positive associations, implying that while these practices are in place, their direct influence on performance is less pronounced at this stage.

4.6.2 Regression Analysis

To assess the combined impact of SSCM practices on organizational performance, a multiple linear regression model was estimated:

The regression model used is:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \epsilon$$

Where:

- Y = Organizational performance
- X_1 = Green procurement
- X_2 = Waste management
- X_3 = Resource efficiency
- X_4 = Ethical sourcing
- β_0 = Intercept
- ϵ = Error term

The regression results are summarized in Table 6 below.

Table 11: Regression Coefficients

Variable	Coefficient (β)	Std. Error	t-Statistic	p-Value
Constant	2.404	0.248	9.689	0.000
Green Procurement	0.289	0.053	5.415	0.000
Waste Management	-0.076	0.065	-1.164	0.246

Variable	Coefficient (β)	Std. Error	t-Statistic	p-Value
Resource Efficiency	-0.040	0.060	-0.663	0.508
Ethical Sourcing	0.231	0.059	3.896	0.000

Model Summary

- $R^2 = 0.288$
- Adjusted $R^2 = 0.269$
- F-statistics = 15.19 ($p < 0.001$)

The model explains approximately 28.8% of the variance in organizational performance, which is considerably stronger than in the initial analysis. Importantly, green procurement ($\beta = 0.289$, $p < 0.001$) and ethical sourcing ($\beta = 0.231$, $p < 0.001$) emerged as statistically significant positive predictors of performance. This finding suggests that strengthening procurement policies around sustainability and supplier accountability has a tangible impact on CA's overall performance outcomes. By contrast, despite showing weak positive correlations, waste management and resource efficiency were not statistically significant predictors. This implies that while these practices contribute indirectly to environmental sustainability, they have not yet matured enough within CA to drive measurable performance improvements.

These results provide a statistical basis for interpreting how each sustainable supply chain practice contributes to organizational performance. The following section discusses these findings in relation to existing literature and practical implications for CA.

4.8 Interpretation and Implications

The results of this study provide critical insights into the extent to which Sustainable Supply Chain Management (SSCM) practices are embedded at the Communication Authority of Kenya (CA) and their impact on organizational performance. The findings reveal that while all four practices are recognized within the institution, they vary considerably in maturity, consistency, and performance impact.

The correlation and regression analyses underscore the significance of green procurement and ethical sourcing as the most influential drivers of organizational performance. Green procurement showed the strongest association with performance, suggesting that prioritizing environmental considerations in supplier selection supports sustainability goals and contributes directly to efficiency gains and cost

savings. Similarly, ethical sourcing significantly enhanced organizational performance, highlighting the importance of integrity, accountability, and supplier responsibility in fostering trust, compliance, and stakeholder confidence. These results demonstrate that procurement-related interventions are the most visible and impactful avenues for CA to strengthen both operational and reputational performance.

In contrast, waste management and resource efficiency showed weaker and statistically insignificant effects on performance. Although descriptive findings revealed that most departments practice waste reduction, recycling, and energy efficiency, the lack of measurable impact suggests that these initiatives remain fragmented and underdeveloped. For instance, water conservation and sustainable transportation were underutilized, and monitoring tools to track resource efficiency outcomes were largely absent. This indicates that while CA has made commendable progress in initiating such practices, the absence of systematic implementation and performance measurement undermines their contribution to broader organizational goals.

The implications of these findings are twofold. First, CA's sustainability agenda must prioritize scaling up and institutionalizing practices with proven impact, particularly in procurement processes. Strengthening supplier engagement, embedding sustainability clauses into tendering, and enforcing ethical sourcing criteria will generate immediate performance benefits while also aligning CA with global sustainability frameworks. Second, there is a need to mature underperforming areas such as waste management and resource efficiency. This will require investments in digital monitoring systems, targeted staff training, and interdepartmental coordination to ensure consistent adoption across the organization.

From a strategic perspective, the findings highlight the need for CA to adopt a balanced SSCM approach that leverages high-impact practices like procurement while simultaneously investing in long-term initiatives such as waste and resource management. Doing so will enhance operational efficiency and compliance, build resilience, reduce reputational risks, and position CA as a leader in sustainable public sector management.

4.7 Chapter Summary

The study examined the relationship between Sustainable Supply Chain Management (SSCM) practices and organizational performance at the Communication Authority of Kenya (CA). Drawing on survey responses from 155 employees across multiple departments and management levels, the

findings present a comprehensive picture of how sustainability initiatives are understood, implemented, and perceived within the organization.

A first key finding is that green procurement has emerged as the strongest and most influential SSCM practice. More than half of respondents confirmed that CA has a green procurement policy, and nearly three-quarters reported that sustainability is often or always prioritized in supplier selection. Regression analysis further reinforced this, showing that green procurement had a significantly positive effect on organizational performance ($\beta = 0.289$, $p < 0.001$). Respondents linked these efforts to cost savings, resource efficiency, and compliance with environmental regulations. This suggests that embedding environmental considerations into supplier selection already delivers tangible performance benefits, and it should therefore be treated as a central pillar of CA's sustainability strategy.

A second important finding is the role of ethical sourcing, which also displayed a significant positive effect on organizational performance ($\beta = 0.231$, $p < 0.001$). Most respondents reported that ethical sourcing is a priority, and identified criteria such as environmental sustainability compliance, fair labor practices, and avoidance of suppliers engaged in unethical practices as central to procurement decisions. However, several challenges were also highlighted, including difficulties in verifying supplier compliance, high costs associated with ethically sourced goods, and limited availability of certified suppliers. These findings underscore both the progress made in institutionalizing procurement integrity and the systemic barriers that must be addressed for ethical sourcing to mature fully.

In contrast, waste management and resource efficiency showed weaker and statistically insignificant associations with organizational performance. While 73.5% of respondents acknowledged the presence of a waste management policy and many reported active participations in waste reduction and recycling initiatives, the impact on organizational outcomes was less clear. Similarly, resource efficiency measures, such as employee training and the installation of energy-efficient equipment, were widely adopted; however, monitoring mechanisms to track long-term performance remained underdeveloped. This suggests that although these practices are in place, their impact has yet to translate into tangible organizational benefits, primarily due to fragmented implementation and inadequate oversight.

Across the broader dimensions of organizational performance, the data demonstrated that SSCM practices are perceived to contribute positively to cost savings, regulatory compliance, environmental

sustainability, and employee engagement. Most respondents rated these impacts as High or Very High, particularly for efficiency and compliance outcomes. Employee engagement, however, emerged as an area requiring improvement, as participation was uneven across departments. Stakeholder trust, while not formally measured in the closed-ended survey items, was frequently cited in open responses as a growing benefit of CA's sustainability agenda, reflecting improved public credibility and external partner confidence.

The findings suggest that CA has made significant progress in embedding SSCM practices, particularly in procurement domains, where policy enforcement and supplier accountability are producing demonstrable results. However, other areas, such as waste and resource management, remain in earlier stages of institutionalization and require targeted investments in awareness, monitoring, and systemic integration. Collectively, the study highlights that SSCM at CA is advancing but unevenly distributed across practices, pointing to the need for a more balanced, organization-wide approach.

CHAPTER FIVE

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

5.0 Introduction

This chapter presents a summary of the study on Sustainable Supply Chain Management Practices and Organizational Performance at the Communications Authority of Kenya (CA). It consolidates the key findings discussed in the previous chapter and interprets their meaning in relation to the research objectives, existing literature, and the theoretical framework that guided the study. The purpose of this chapter is threefold: first, to summarize the main findings from data analysis; second, to draw reasoned conclusions that reflect both empirical evidence and theoretical understanding; and third, to provide actionable recommendations for policy, practice, and future research.

The findings from Chapter Four demonstrated that sustainable supply chain management (SSCM) practices are increasingly being recognized and applied within the Communication Authority of Kenya, albeit with varying levels of maturity. Practices such as green procurement and ethical sourcing emerged as strong performance drivers, while waste management and resource efficiency, though present, were less developed and less influential. These variations have significant implications for strengthening sustainability as a strategic performance lever in Kenya's public sector. The chapter aims to demonstrate a comprehensive understanding of the study and its contribution to both practice and scholarship in sustainable supply chain management.

5.1 Summary of the findings

The study was guided by four specific objectives: to determine the effect of green procurement on organizational performance, to assess the effect of waste management strategies, to evaluate the impact of resource efficiency, and to analyze the effect of ethical sourcing on the performance of the Communications Authority of Kenya. These objectives were derived from the need to understand how sustainable practices operate collectively and individually in a public institution that regulates a critical national sector.

A descriptive cross-sectional design was adopted to capture the existing state of SSCM practices and their measurable effects at a single point in time. The target population consisted of 155 employees of the Communications Authority of Kenya, covering top management, middle management, and operational staff directly involved in procurement and sustainability functions. Given the manageable

size of the population and the importance of full representation, the study used a census approach, ensuring that all employees within the defined scope participated. Data were collected through structured questionnaires distributed both physically and electronically, resulting in a 100% response rate. The data collection instrument was validated through expert review and pilot testing to ensure clarity, relevance, and reliability. Quantitative data were analyzed using descriptive statistics, correlation, and multiple linear regression with the aid of SPSS software.

The findings established that SSCM practices were in place at the Communications Authority of Kenya but had not been uniformly institutionalized across all departments. The analysis revealed substantial progress in policy formulation and awareness creation, yet varying levels of operational depth across the four SSCM domains. The descriptive results indicated that sustainability considerations were present in procurement, waste management, and resource utilization, although awareness and enforcement remained inconsistent. Inferential analyses provided deeper insights into the extent to which each SSCM practice influenced performance outcomes.

Green Procurement emerged as the most influential sustainability practice within CA. Over half of the respondents confirmed the presence of a formal green procurement policy, and nearly three-quarters indicated that environmental sustainability was frequently or always prioritized in their supplier selection process. The correlation coefficient ($r = 0.455$) demonstrated a moderate positive association with organizational performance, while regression analysis indicated a statistically significant contribution ($\beta = 0.289$, $p < 0.001$). These results suggested that environmentally conscious procurement decisions contributed directly to cost savings, operational efficiency, and compliance with regulatory frameworks. However, implementation barriers were also identified, including the limited availability of eco-friendly suppliers, high procurement costs, and a lack of standardized sustainability metrics for evaluating suppliers.

Ethical Sourcing was identified as another key determinant of performance, with strong organizational awareness and policy integration. 82 % of respondents acknowledged that ethical sourcing was a priority, emphasizing compliance with environmental and labor standards as a central procurement requirement. The correlation coefficient ($r = 0.370$) and regression coefficient ($\beta = 0.231$, $p < 0.001$) confirmed a significant positive effect on performance. Ethical sourcing improved transparency, stakeholder confidence, and procurement integrity, particularly by discouraging engagement with suppliers involved in unethical labor practices or environmental violations. The findings demonstrated that suppliers adhering to social and environmental compliance contributed to CA's credibility, risk mitigation, and long-term sustainability. Nevertheless, the challenges of

verifying supplier claims, limited access to certified suppliers, and high costs of ethically sourced products continued to constrain full institutionalization.

Waste Management practices were moderately developed but had a less significant influence on performance. Approximately 73.5% of respondents confirmed that CA had a formal waste management policy, and many reported participating in recycling and waste reduction initiatives. Despite these efforts, the correlation with organizational performance was weak ($r = 0.089$), and the regression coefficient was statistically insignificant ($\beta = -0.076$, $p = 0.246$). This indicated that waste management, although present, had not yet produced measurable performance outcomes. The results suggested that current practices were fragmented, lacked rigorous monitoring, and were constrained by limited infrastructure and departmental coordination. Respondents identified weak enforcement mechanisms and insufficient employee engagement as major barriers, emphasizing the need for structured audits and stronger leadership support for waste management initiatives.

Resource Efficiency similarly exhibited limited influence on performance. While 93.5% of respondents confirmed that CA implemented some form of resource efficiency (most commonly through energy-efficient equipment and employee sustainability training), the impact remained modest. Correlation analysis yielded a weak positive association ($r = 0.196$), and regression results showed no significant predictive effect ($\beta = -0.040$, $p = 0.508$). The descriptive findings revealed that initiatives such as energy conservation and staff awareness training were widespread; however, efforts in water conservation and sustainable transportation were less pronounced. The study inferred that without comprehensive monitoring systems, departmental integration, and performance metrics, resource efficiency remained an underleveraged aspect of CA's sustainability strategy.

Collectively, the regression model explained approximately 28.8 % of the variance in organizational performance ($R^2 = 0.288$; adjusted $R^2 = 0.269$; $F = 15.19$, $p < 0.001$). This moderate explanatory power demonstrated that SSCM practices meaningfully contributed to organizational outcomes but were not the sole determinants of performance. External factors such as financial constraints, policy enforcement, and staff capacity also moderated the relationship between sustainability and performance outcomes. These results align with previous studies, which emphasize that sustainability practices, when implemented strategically and supported by adequate resources, can produce measurable organizational benefits.

5.1.1 Organizational Performance Outcomes

The integration of SSCM practices at CA had a positive influence on several performance dimensions. Respondents overwhelmingly agreed that sustainability initiatives enhanced cost efficiency, regulatory compliance, and environmental outcomes. Over 75 % rated the impact of SSCM on cost savings and regulatory compliance as “high” or “very high.” These findings suggest that sustainability-driven procurement and operations directly contribute to the Authority’s mandate to deliver efficient, transparent, and environmentally responsible services. Employee engagement in sustainability was also perceived as positive but uneven, with 72 % rating engagement as “high” or “very high.” This indicated progress in fostering a sustainability culture, though participation remained concentrated in departments directly linked to procurement and operations.

Environmental sustainability indicators also reflected progress. Recycling, waste reduction, and energy-saving programs were reported to have improved CA’s environmental performance and compliance with national sustainability standards. However, respondents emphasized that more systematic tracking and data reporting mechanisms were necessary to verify long-term gains. Stakeholder trust has emerged as a key intangible benefit of SSCM practices. Respondents observed that the Authority’s visible commitment to ethical and environmental responsibility had strengthened its reputation among partners, regulatory bodies, and the general public.

The study’s findings demonstrated that the Communications Authority of Kenya has made commendable progress in institutionalizing SSCM practices; however, the level of maturity varies across different domains. Green procurement and ethical sourcing were found to be the most impactful practices, directly improving performance through enhanced compliance, increased efficiency, and strengthened stakeholder legitimacy. Waste management and resource efficiency, while relevant, had not yet evolved into strong performance drivers due to fragmented implementation and insufficient measurement mechanisms.

The results also affirmed the theoretical underpinnings of the study. Stakeholder Theory was supported by evidence showing that responsiveness to environmental and social expectations strengthened CA’s legitimacy and public trust. The Resource-Based View was validated through the observation that unique internal resources, such as trained procurement staff, policies, and technology, enabled CA to derive measurable performance gains from sustainability initiatives. Finally, Dynamic Capabilities Theory was reflected in the institution’s growing adaptability, as

demonstrated by the development of green procurement policies and training programs aligned with evolving sustainability standards.

The synthesis revealed that SSCM practices, when viewed collectively, enhance both tangible and intangible dimensions of performance. Tangible outcomes included cost reduction, improved efficiency, and regulatory compliance, while intangible outcomes encompassed organizational reputation, employee morale, and stakeholder trust. However, the findings also underscored that SSCM success depends on continuous improvement, cross-departmental coordination, and leadership commitment. The study, therefore, concluded that the Communications Authority of Kenya is progressing toward sustainable operations but must reinforce weak areas to achieve a fully integrated sustainability framework.

examined. The study's conclusions are drawn from the integration of empirical evidence, theoretical frameworks, and the broader body of literature reviewed.

5.1.2 Green Procurement and Organizational Performance

The findings shows that green procurement has become the most established and impactful SSCM practice at the Communications Authority of Kenya. The positive and statistically significant relationship between green procurement and organizational performance demonstrated that environmental considerations are not only compatible with operational goals but also enhance cost efficiency, regulatory compliance, and institutional reputation. The findings supported previous studies by Liu et al. (2024) and Chen and Geng (2023), who found that organizations integrating sustainability criteria into procurement processes experienced measurable performance improvements. At CA, prioritizing environmentally responsible suppliers, adopting life-cycle costing, and enforcing compliance with sustainability standards directly contributed to organizational efficiency and compliance with public procurement regulations.

However, the study also concluded that the full potential of green procurement is constrained by structural barriers such as limited access to eco-certified suppliers and the high cost of sustainable goods. These barriers reflect the challenges faced by public sector institutions in developing economies, where supplier markets for sustainable products are underdeveloped. The conclusion, therefore, emphasized that green procurement can only achieve long-term sustainability outcomes when supported by comprehensive policy enforcement, supplier development programs, and consistent staff training.

5.1.3 Waste Management and Organizational Performance

The second major conclusion relates to waste management practices. While a formal waste management policy exists at the Communications Authority of Kenya, its implementation remains uneven and largely reactive. The weak and statistically insignificant correlation between waste management and performance indicated that current initiatives have yet to generate measurable organizational outcomes. Although recycling, waste reduction, and hazardous waste disposal programs were present, their effectiveness was limited by inconsistent enforcement, minimal employee participation, and the absence of systematic monitoring mechanisms.

The study concluded that waste management at CA remains primarily compliance-oriented rather than strategically integrated into performance management systems. This finding aligns with global observations by Udodiugwu (2024), who noted that many public institutions in developing countries treat waste management as an operational necessity rather than as a driver of value creation. For CA to derive tangible benefits from waste management, sustainability must evolve from a peripheral activity into a core component of operational strategy. Establishing performance indicators for waste reduction, investing in digital tracking systems, and fostering a culture of accountability were identified as essential steps toward this transformation.

5.1.4 Resource Efficiency and Organizational Performance

The third conclusion focused on resource efficiency, which was found to have a weak and statistically insignificant relationship with organizational performance. While the study confirmed that CA had made commendable progress in areas such as energy-efficient equipment and staff training, these efforts had not yet translated into measurable performance gains. The findings implied that resource efficiency initiatives were fragmented and lacked the institutional mechanisms necessary for long-term impact.

This conclusion aligns with the arguments of Capalbo et al. (2025), who noted that resource efficiency yields significant performance outcomes only when it is complemented by innovation, technological integration, and structured performance monitoring. In the case of CA, the absence of a standardized system for tracking energy or water usage undermined the ability to measure and improve efficiency outcomes. Consequently, the study concluded that while resource efficiency is conceptually valued, it remains underdeveloped in practice. For resource efficiency to become a key

performance driver, CA must adopt clear performance metrics, invest in real-time monitoring tools, and ensure departmental alignment to prevent isolated initiatives from losing strategic focus.

5.1.5 Ethical Sourcing and Organizational Performance

Ethical sourcing was found to have a statistically significant positive effect on organizational performance, confirming that transparency and accountability in supplier management enhance institutional trust, compliance, and legitimacy. The study concluded that CA's emphasis on fair labor practices, environmental sustainability, and responsible supplier behavior has strengthened stakeholder confidence and improved the Authority's reputation as a public regulator. These results reinforced the findings of Maniatis and Maniatis (2024), who demonstrated that ethical sourcing improves profitability and stakeholder satisfaction by reducing reputational risk and promoting responsible supplier partnerships.

However, despite these achievements, challenges such as limited verification capacity and high compliance costs continue to undermine the full realization of ethical sourcing objectives. Many respondents identified the lack of supplier certification and the difficulty in auditing supplier practices as major weaknesses. Therefore, the study concluded that ethical sourcing at CA must evolve from a focus on policy compliance to an active partnership with suppliers. Establishing collaborative supplier development programs and leveraging technology for supplier traceability would enhance enforcement while maintaining efficiency in procurement operations.

5.2 Conclusions

The purpose of this study was to assess the impact of Sustainable Supply Chain Management (SSCM) practices on organizational performance within the Communications Authority of Kenya (CA). The findings established that while sustainability principles have gained significant traction within CA's operations, the depth and consistency of implementation differ across the four SSCM dimensions

5.3 Recommendations

The conclusions of this study highlight both the progress and the limitations of Sustainable Supply Chain Management (SSCM) practices at the Communications Authority of Kenya (CA). While significant strides have been made in integrating sustainability into procurement and regulatory compliance, notable gaps persist in the institutionalization of waste management, resource efficiency, and supplier verification systems. The following recommendations provide a structured roadmap for

strengthening SSCM within CA and other public sector institutions. They are organized under three categories: policy-level interventions, organizational-level strategies, and theoretical and academic contributions.

The study found that green procurement and ethical sourcing had the greatest influence on organizational performance. However, their implementation was often dependent on internal policy interpretation rather than binding regulatory frameworks. It is therefore recommended that national and institutional procurement policies explicitly integrate sustainability clauses as mandatory evaluation criteria in tendering processes. These should include requirements for environmental certifications, supplier sustainability reports, and life cycle costing in all significant public procurements. Aligning with Kenya's Public Procurement and Asset Disposal Act, sustainability should transition from a voluntary consideration to a mandatory compliance item. This approach would create uniformity across government agencies and encourage suppliers to adopt sustainable practices to remain eligible for contracts.

The study revealed that one of the barriers to ethical and green procurement was the limited availability of certified suppliers. To address this, policymakers should consider establishing a centralized supplier accreditation system that verifies compliance with environmental, labor, and ethical standards. The Kenya Bureau of Standards (KEBS), in collaboration with the Public Procurement Regulatory Authority (PPRA), could maintain a database of verified suppliers meeting defined sustainability benchmarks. Such a program would simplify supplier evaluation, reduce verification costs, and foster a competitive market for sustainable goods and services. It would also enable public agencies like CA to procure confidently from pre-qualified, ethically verified suppliers.

Financial constraints were repeatedly identified as barriers to implementing waste management and resource efficiency programs. It is therefore recommended that the National Treasury and sectoral ministries require all parastatals to allocate a defined percentage of their annual budgets to sustainability initiatives. These funds should support training, monitoring systems, waste infrastructure, and supplier audits. The budgeting process should also incorporate sustainability as a key performance indicator (KPI) to ensure accountability for the effective use of resources. This policy reform would enable public entities to move from ad hoc sustainability projects to long-term, budget-supported programs.

Although policies on waste management and ethical sourcing exist, enforcement remains weak. The study recommends that oversight agencies such as the Auditor General's Office and the Public

Procurement Regulatory Authority (PPRA) include sustainability performance audits in their regular evaluations. Audits should assess not only compliance but also impact — measuring how procurement and waste policies translate into reduced emissions, improved efficiency, or enhanced stakeholder trust. Introducing sustainability scorecards and periodic performance reviews would help create a culture of accountability and continuous improvement across public organizations.

Sustainability challenges such as e-waste management, energy efficiency, and supplier traceability transcend individual organizations. The government should therefore facilitate collaboration among parastatals, local authorities, and private sector partners through a national SSCM working group. This platform would allow the sharing of best practices, the harmonization of sustainability metrics, and joint investment in shared infrastructure such as recycling centers or digital supplier monitoring systems. Collaborative models have proven effective in several developing countries, where pooling resources and expertise reduces duplication and enhances collective impact.

At the organizational level, the Communications Authority of Kenya should formally embed sustainability goals within its corporate strategic plan and annual performance contracts. The study revealed that sustainability initiatives were often department-specific and lacked coordination across the organization. Integrating SSCM objectives into CA's planning framework would ensure that all departments (from procurement to ICT and human resources) contribute to the Authority's sustainability targets. Each department should define measurable indicators aligned with the Triple Bottom Line framework, encompassing economic, environmental, and social outcomes.

The absence of real-time data tracking was a recurring limitation in both resource efficiency and waste management. CA should therefore invest in a digital sustainability dashboard that consolidates data on energy use, waste generation, procurement sustainability scores, and supplier compliance. Such a system would facilitate evidence-based decision-making and allow management to monitor progress toward sustainability targets. The dashboard should be integrated with existing enterprise resource planning (ERP) systems to ensure efficiency and data consistency across departments.

The study highlighted that many sustainability initiatives heavily depend on employee awareness and participation. CA should intensify its internal capacity-building programs by offering regular workshops on green procurement, ethical sourcing, and best practices in waste management. Training should be tailored to specific roles so that employees at all levels understand their responsibilities in achieving sustainability targets. Furthermore, sustainability-related performance indicators should be

integrated into staff appraisal systems to foster accountability. Linking sustainability outcomes to performance incentives would motivate employees to actively contribute to organizational goals.

Given the Authority's size and diversity of operations, the success of implementation depends on distributed leadership. Each department should appoint a sustainability champion responsible for coordinating initiatives, collecting data, and liaising with the central sustainability office. This decentralized model would strengthen accountability and encourage innovation at the departmental level. Regular coordination meetings between departmental champions and senior management would ensure alignment with organizational goals while fostering a culture of continuous improvement.

To enhance waste management, CA should transition from linear waste handling to circular economy models that emphasize reduction, reuse, and recycling. Establishing waste segregation points, digitizing waste audits, and entering into long-term contracts with certified recyclers would create measurable environmental and cost benefits. Additionally, CA could explore partnerships with technology firms and universities to develop sustainable solutions for e-waste management, a growing concern given the Authority's technical operation. Circular practices not only reduce disposal costs but also contribute to the Authority's reputation as a sustainability leader in the communications sector.

Although resource efficiency was found to be underdeveloped, it remains a major opportunity for improvement. CA should prioritize investments in energy-saving technologies, water recycling systems, and sustainable mobility programs. Simple measures such as adopting teleconferencing to reduce travel, automating lighting and HVAC systems, and encouraging paperless operations can produce immediate cost savings. Over the medium term, CA should integrate green building standards in its facilities and pursue ISO 14001 certification to institutionalize environmental management practices. Implementing a structured innovation program that rewards staff for efficiency-driven ideas would further accelerate progress.

The results showed that ethical sourcing policies exist but are hindered by weak verification processes. CA should establish a supplier evaluation and monitoring system that includes digital verification tools, such as blockchain-based supplier registries or third-party audits. The Procurement Department should maintain a database of vetted suppliers with transparent compliance histories. This would reduce risks associated with unethical labor practices and environmental violations in the supply chain. Moreover, by collaborating with certification agencies like Fairtrade Africa and KEBS,

CA can enhance supplier transparency and credibility while reducing administrative burdens during tender evaluations.

Transparent reporting is a key component of stakeholder trust and organizational legitimacy. CA should adopt a sustainability reporting framework aligned with the Global Reporting Initiative (GRI) or the United Nations Sustainable Development Goals (SDGs). Annual sustainability reports would communicate progress, highlight challenges, and demonstrate accountability to both internal and external stakeholders. Publishing such reports would not only enhance transparency but also position CA as a thought leader in sustainable governance within Kenya's public sector.

This study contributes empirical evidence to an under-researched area—the application of sustainable supply chain management in the public sector of a developing economy. The findings expand existing literature by demonstrating that SSCM practices can positively influence performance within a regulatory agency, even in contexts characterized by resource constraints. The study therefore reinforces the growing body of research that extends sustainability discourse beyond profit-driven firms to include public institutions that operate under accountability and transparency mandates.

From a theoretical perspective, the study affirmed that Stakeholder Theory and the Resource-Based View (RBV) jointly explain performance outcomes in public institutions adopting SSCM. Stakeholder Theory was validated through evidence showing that CA's responsiveness to environmental and ethical expectations strengthened its legitimacy and stakeholder trust. Similarly, the RBV was extended by illustrating that internal capabilities such as staff competence, procurement systems, and organizational policies constitute strategic resources that can generate value and differentiation, even within non-competitive public environments. These insights broaden the application of RBV and Stakeholder Theory to governance-driven organizations.

The study also reinforced the relevance of Dynamic Capabilities Theory in explaining how public institutions can adapt sustainability strategies amid regulatory and technological change. The Communications Authority's gradual adoption of digital procurement and sustainability training demonstrated an emerging ability to sense, seize, and reconfigure resources in response to environmental pressures. By applying this theory in a public sector context, the study bridged the gap between conceptual frameworks and practical adaptation mechanisms. Future scholars can build on this foundation to explore how dynamic capabilities evolve in public institutions under conditions of fiscal constraint and policy transition.

Lastly, this study provides a conceptual and methodological framework for further empirical investigation. The combination of four SSCM dimensions—green procurement, waste management, resource efficiency, and ethical sourcing—within a single model offers a holistic template for replication across other parastatals and government agencies. Researchers can employ this framework to conduct comparative analyses across sectors or extend it longitudinally to measure sustainability maturity over time. By demonstrating how quantitative and descriptive approaches can be integrated within a public sector study, this research also contributes methodological insights to the SSCM literature.

5.4 Suggestions for Further Research

The findings of this study have provided valuable insights into how Sustainable Supply Chain Management (SSCM) practices influence organizational performance in a public sector context. However, as with all research, several areas remain open for further exploration. These gaps highlight opportunities for scholars, policymakers, and practitioners to deepen understanding and extend the evidence base on SSCM implementation, particularly within developing economies.

First, future studies could adopt a longitudinal research design to measure changes in sustainability maturity over time. Since this study was cross-sectional, it captured relationships at a single point in time rather than tracking dynamic progression. Long-term analysis would help determine whether investments in green procurement, waste management, and ethical sourcing produce sustained performance gains or decline without consistent reinforcement.

Second, subsequent research could broaden the sectoral scope by comparing multiple parastatals or regulatory agencies. Such comparative studies would clarify whether the relationships observed at the Communications Authority of Kenya are generalizable across public institutions or specific to organizations with similar mandates and resources. Cross-sectoral research could also identify contextual factors such as funding models or governance structures that moderate the effectiveness of SSCM practices.

Third, further research could incorporate qualitative methods, such as in-depth interviews, case studies, and policy analyses, to complement the quantitative findings. Qualitative insights would provide richer explanations for how organizational culture, leadership, and interdepartmental collaboration shape the success of sustainability initiatives.

Finally, future studies should examine the moderating and mediating variables that influence the SSCM–performance relationship. Variables such as technological innovation, organizational learning, leadership commitment, and stakeholder pressure may explain why some sustainability initiatives outperform others. Addressing these areas will help future research to refine theoretical models, guide evidence-based policymaking, and strengthen the implementation of SSCM as a driver of sustainable development in the public sector.

5.5 Chapter Summary

This chapter has presented the summary, conclusions, and recommendations of the study examining the influence of Sustainable Supply Chain Management (SSCM) practices on organizational performance at the Communications Authority of Kenya (CA). The analysis confirmed that sustainability initiatives are progressively shaping the Authority’s operational and strategic landscape. Green procurement and ethical sourcing emerged as the most significant drivers of performance, while waste management and resource efficiency were identified as emerging areas that require stronger institutional support.

The conclusions underscored that SSCM practices, when properly aligned with policy frameworks, resources, and stakeholder expectations, enhance cost efficiency, regulatory compliance, and public trust. Recommendations were proposed at policy, organizational, and academic levels to institutionalize sustainability and guide further research. Collectively, these projects emphasize that SSCM is not an isolated management function but a comprehensive governance framework that supports accountability, innovation, and long-term value creation. By addressing the highlighted gaps and implementing the recommended strategies, public institutions such as CA can strengthen their contribution to Kenya’s sustainable development agenda and enhance performance across economic, environmental, and social dimensions.

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APPENDICES

APPENDIX 1: INTRODUCTION LETTER



Date: 8th July 2025

TO WHOM IT MAY CONCERN

SARAH CHEPCHUMBA- MBA/28/002373/1/23

This letter serves to introduce the above named who is a (**Master of Business Administration**) student and is interested in carrying out research on Sustainable Supply Chain Management Practices and Performance of Parastatals in Kenya: A Case Study of Communication Authority of Kenya.

Any assistance accorded to her in pursuit of this study will be greatly appreciated.

Yours Sincerely,


Dr. Juster Nyaga
Dean, School of Management and Leadership

APPENDIX II: QUESTIONNAIRE

Dear Respondent,

Thank you for taking the time to participate in this study titled "Sustainable Supply Chain Management Practices and Organizational Performance: A Case Study of the Communication Authority of Kenya." This research aims to assess the impact of sustainable supply chain management (SSCM) practices on organizational performance in Kenya's public sector.

Your responses will remain strictly confidential and will only be used for academic purposes. This questionnaire will take approximately 15–20 minutes to complete. Please answer as honestly and accurately as possible.

Instructions:

- Answer all questions based on your experience and knowledge.
- For multiple-choice and Likert scale questions, tick (✓) the option that best represents your opinion.

Thank you for your participation!

Section A: Demographic Information

1. What is your gender?

- ☐ Male
- ☐ Female
- ☐ Prefer not to say

2. What is your age bracket?

- ☐ 18–25 years
- ☐ 26–35 years
- ☐ 36–45 years
- ☐ 46–55 years
- ☐ 56 years and above

3. What is your highest level of education?

- ☐ Diploma
- ☐ Bachelor's Degree
- ☐ Master's Degree
- ☐ Doctorate (PhD)
- ☐ Other (Please specify): _____

4. What is your current role within the Communication Authority of Kenya?

- ☐ Top Management
- ☐ Middle Management
- ☐ Operations/Technical Staff
- ☐ Other (Please specify): _____

5. How long have you worked in this organization?

- ☐ Less than 1 year
- ☐ 1–3 years
- ☐ 4–7 years
- ☐ 8–10 years
- ☐ More than 10 years

Section B: Green Procurement Practices

6. Does your organization have a green procurement policy?

- ☐ Yes
- ☐ No
- ☐ Not sure

7. How often does your organization prioritize environmental sustainability when selecting suppliers?

- ☐ Always
- ☐ Often
- ☐ Sometimes
- ☐ Rarely
- ☐ Never

8. What are the three most significant barriers to implementing green procurement in your organization? (Rank from 1–3, with 1 being the most significant barrier)

- ☐ High costs of sustainable products
- ☐ Limited availability of eco-friendly suppliers
- ☐ Lack of clear policies or enforcement mechanisms
- ☐ Insufficient awareness or training among employees
- ☐ Resistance from suppliers due to cost concerns
- ☐ Other (Please specify): _____

Section C: Waste Management Strategies

10. Does your organization have a formal waste management policy?

- ☐ Yes
- ☐ No
- ☐ Not sure

11. What waste management strategies are currently in place in your organization? (Tick all that apply)

- ☐ Recycling programs
- ☐ Waste reduction initiatives
- ☐ Use of biodegradable materials

- ☐ Proper disposal of hazardous waste
- ☐ Other (Please specify): _____

12. How effective are your organization's waste management strategies?

- ☐ Very effective
- ☐ Effective
- ☐ Neutral
- ☐ Ineffective
- ☐ Very ineffective

13. What are the top two challenges in implementing effective waste management? (Tick two most significant challenges)

- ☐ Lack of recycling facilities
- ☐ High implementation costs
- ☐ Limited employee awareness or participation
- ☐ Weak enforcement of waste management policies
- ☐ Other (Please specify): _____

Section D: Resource Efficiency

15. Does your organization actively implement resource efficiency measures?

- ☐ Yes
- ☐ No
- ☐ Not sure

16. Which of the following resource efficiency measures does your organization use? (Tick all that apply)

- ☐ Energy-efficient equipment
- ☐ Water conservation strategies
- ☐ Sustainable transportation methods
- ☐ Employee training on sustainability
- ☐ Other (Please specify): _____

17. To what extent do you agree with the following statements?

Statement	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
The organization has policies that promote energy efficiency	[☐]	[☐]	[☐]	[☐]	[☐]
Employees are encouraged to use resources efficiently	[☐]	[☐]	[☐]	[☐]	[☐]
Budgetary constraints hinder resource efficiency efforts	[☐]	[☐]	[☐]	[☐]	[☐]

Section E: Ethical Sourcing

18. Does your organization prioritize ethical sourcing when selecting suppliers?

- ☐ Yes
- ☐ No
- ☐ Not sure

19. What are the key ethical sourcing criteria your organization follows? (Tick all that apply)

- ☐ Fair labor practices
- ☐ Environmental sustainability compliance
- ☐ Avoiding suppliers involved in unethical labor practices
- ☐ Supporting suppliers who uphold corporate social responsibility (CSR)
- ☐ Other (Please specify): _____

20. What are the biggest obstacles to ethical sourcing in your organization? (Tick two most significant obstacles)

- ☐ High costs of ethically sourced products
- ☐ Difficulty verifying supplier compliance
- ☐ Limited availability of ethical suppliers
- ☐ Weak enforcement mechanisms
- ☐ Other (Please specify): _____

Section F: Organizational Performance & Policy Support

22. To what extent have SSCM practices influenced the following areas of organizational performance?

Performance Area	Very High	High	Moderate	Low	Very Low
Cost savings and efficiency	[☐]	[☐]	[☐]	[☐]	[☐]
Regulatory compliance	[☐]	[☐]	[☐]	[☐]	[☐]
Environmental sustainability	[☐]	[☐]	[☐]	[☐]	[☐]
Employee engagement in sustainability	[☐]	[☐]	[☐]	[☐]	[☐]

APPENDIX II: NACOSTI LICENSE

 REPUBLIC OF KENYA	 NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY & INNOVATION
Ref No: 143818	Date of Issue: 21/August/2025
RESEARCH LICENSE	
	
This is to Certify that Ms. SARAH CHEPCHUMBA of The Management University of Africa, has been licensed to conduct research as per the provision of the Science, Technology and Innovation Act, 2013 (Rev.2014) in Nairobi on the topic: SUSTAINABLE SUPPLY CHAIN MANAGEMENT PRACTICES AND PERFORMANCE OF PARASTATALS IN KENYA: A CASE STUDY OF COMMUNICATION AUTHORITY OF KENYA. for the period ending : 21/August/2026.	
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