ENABLERS OF THE ADOPTION OF SUSTAINABLE PROCUREMENT PRACTICES IN THE KENYAN WATER SERVICE SECTOR IN THE WESTERN REGION.

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A Thesis Submitted to the School of Business and Economics for the award of a Masters of Business Administration, Procurement and Supply Chain Management option of Masinde Muliro University of Science and Technology.

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DECLARATION

I declare that thesis is my original work prepared with no other than the indicated sources and support and has not been presented elsewhere for a degree or any other award.

Signature…….Date……..……

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CERTIFICATION

We, the undersigned supervisors, certify that we have read and hereby recommend for acceptance by Masinde Muliro University of Science and Technology a thesis entitled ***"Enablers of the Adoption of Sustainable Procurement Practices in the Kenyan Water Service Sector in the Western Region."***

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DEDICATION

I dedicate this thesis to my mother, whose unwavering love, support and encouragement have been the foundation of my journey. Her strength and dedication have always inspired me and this achievement is a testament to her enduring belief in me.

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ABSTRACT

Amid growing environmental concerns, sustainable procurement is vital for integrating environmental, economic, and social considerations in the water sector, where efficient resource management is critical. Regional Water Service Providers in Western Kenya face challenges such as high non-revenue water (43% losses), substandard materials, inaccurate metering, inefficient revenue collection, rising costs, governance issues, funding shortages, and inadequate infrastructure (WASREB, 2023). to evaluate the influence of top management support practices, organizational resource capacity, supplier collaboration, legal and regulatory frameworks on the adoption of sustainable procurement practices in Kenya's water service sector in the Western Region as well as to evaluate the moderating influence of organizational culture on the relationship between the enablers of the adoption of sustainable procurement practices and the adoption of sustainable procurement practices in Kenya's water service sector in the Western Region. The study was guided by Triple bottom line theory, resource-based view theory, institutional theory, stakeholder theory and Denison Model. The study applied descriptive cross sectional design. The study targeted 72 management and procurement staff. Data were collected through closed-ended questionnaires piloted in Siaya County, with validity ensured via content and construct checks and reliability confirmed by Cronbach's Alpha (0.7–0.893). Descriptive (means, standard deviations) and inferential analyses (Pearson correlation, regression) were performed. This study examines the enablers of sustainable procurement adoption by these providers. Specific objectives assess the influence of top management support (R^2=0.504, $p<0.001$), organizational resource capacity (R^2=0.320, $p<0.001$), supplier collaboration (R^2=0.330, $p<0.001$), legal and regulatory frameworks (R^2=0.509, $p<0.001$), and the moderating role of organizational culture (R^2 change=0.002, p=0.003). Findings reveal that top management support (r=0.708, p=0.001), organizational resource capacity (r=0.565, p=0.000), supplier collaboration (r=0.574, p=0.000), and legal and regulatory frameworks (r=0.715, p=0.000) significantly influence sustainable procurement adoption. Organizational culture moderately strengthens these relationships (adjusted R^2=0.601, $p<0.001$). Recommendations include enhancing leadership commitment, resource allocation, supplier partnerships, legal compliance, and cultural alignment to improve sustainable procurement and service delivery.

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ABBREVIATIONS AND ACRONYMS

AU	African Union
CIPS	Chartered Institute of Procurement and Supply
CSR	Corporate Social Responsibility
EPP	Electronic Procurement Practices
ESG	Environmental, Social and Governance
EU	European Union
GDP	Gross domestic product
GoK	Government of Kenya
GPP	Green Public Procurement
ICT	Information and Communication Technology
ICLEI	Local Governments for Sustainability
ISO	International Organization for Standardization
LVNWWDA	Lake Victoria North Water Works Development Agency
NBR	Nitrile Butadiene Rubber
OECD	Organization for Economic Co-operation and Development
PPDA	Public Procurement and Disposal Act
PPRA	Public Procurement Regulatory Authority
RBV	Resource Based View
TMS	Top Management Support

SDGs	Sustainable Development Goals
SPP	Sustainable public procurement.
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
WASREB	Water Services Regulatory Board
WCED	World Commission on Environment and Development
WSPs	Water Service Providers

OPERATIONAL DEFINITION OF TERMS

Legal and Regulatory Framework	The composite body of laws, regulations, policies and guidelines that govern the operations within a specific jurisdiction or industry. It sets the legal parameters and standards that organizations must adhere to, covering various aspects such as procurement laws, which govern the processes and standards for acquiring goods and services and environmental laws, which set regulations to protect the environment and ensure sustainable practices within procurement activities
Organizational Culture	The collective values beliefs, behaviors and norms that shape the internal environment of the agency. It focuses on the mission, which defines the organization's purpose and direction; adaptability, which reflects the ability to respond to changes and innovate; consistency, which ensures uniformity in values and behaviors across the organization; and involvement, which emphasizes employee engagement and participation in decision-making processes
Organizational Resource Capacity	The necessary resources include financial assets, which ensure the availability of funds for operations and investments; human capital, which encompasses the skills, knowledge and expertise of the workforce; and technology infrastructure, which includes the tools and systems that enhance efficiency and innovation within the organization
Supplier Collaboration	The active engagement and partnership between the Agency and its suppliers. This encompasses co- innovation, which involves joint

	development of new products and processes; joint problem solving, where both parties work together to address and resolve issues; capacity building, which enhances supplier capabilities through training and resource sharing; and effective communication, ensuring regular updates and transparent information sharing to keep both parties aligned and informed
Sustainability	The integration of environmental, social and economic considerations into procurement processes, aligning with national and international standards. This involves transforming abstract sustainability concepts into measurable variables to evaluate their impact on adoption. Specific practices include procuring water-saving devices, selecting low carbon footprint suppliers, ensuring fair labor practices and collaborating on innovative solutions, all while adhering to relevant laws
Sustainable Procurement Practices	They are actions that focus on green procurement, which involves purchasing products and services that have a reduced environmental impact; value of procurement, electronic procurement, which utilizes digital tools to streamline and make procurement processes more efficient and supplier diversity, which ensures the inclusion of diverse suppliers to promote equity and innovation within the supply chain.
Top Management Support	The person or group of people who direct and control the agency at the highest level. They are responsible for strategic direction, which involves setting long-term goals and vision; leadership commitment,

which ensures active involvement and endorsement from senior leaders; and policy development, which includes creating and implementing policies that support organizational objectives and initiatives

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Sustainable procurement is a critical strategy for addressing global environmental challenges by integrating environmentally sound, socially responsible and economically viable practices into the acquisition of goods and services. It balances economic efficiency, environmental stewardship and social responsibility, contributing to sustainable development goals (Alibasic, 2023). Key practices include evaluating suppliers based on sustainability, promoting eco-friendly products and ensuring ethical labor standards (Oliveira & de Souza, 2023).

Sustainable development, a broader concept, aims to meet present needs without compromising future generations' ability to meet theirs, encompassing economic growth, environmental protection and social equity (World Bank, 2023). Sustainable procurement, a specific practice within this framework, focuses on purchasing decisions that achieve value for money while minimizing environmental damage and generating benefits for society and the economy (World Bank, 2023).

The distinction between sustainable development and sustainable procurement lies in scope, implementation and focus. Sustainable development requires coordinated efforts across sectors to address goals like poverty reduction and climate action, while sustainable procurement integrates sustainability criteria into the purchasing process (International Organization for Standardization, 2017). The World Bank's Environmental and Social

Framework and Sustainable Procurement Guidance provide practical tools to support these efforts (World Bank, 2023).

Globally, sustainable procurement addresses environmental degradation, resource depletion and social disparities through compliance with environmental standards, elimination of toxic substances and equitable labor practices. International frameworks like the United Nations Global Compact and the Paris Agreement emphasize its role in achieving broader sustainability goals (United Nations, 2015). Countries like Brazil, France, the UK, the US and Costa Rica have integrated sustainable procurement practices into public policy, leveraging it for environmental and social reform through innovative methods, legislation and strategic policies (Villac & dos Santos, 2020; Martor, 2022; Local Government Association, 2021; Dimand, 2022; OECD, 2022).

In Africa, sustainable procurement aligns with Agenda 2063 and the African Union's 2030 Agenda, addressing socio-economic and environmental challenges (Suleiman, 2022). Uganda promotes green procurement through low-carbon technologies and environmental taxes (Pastor, Nabeta & Wanyama, 2022), while South Africa, Namibia and Botswana incorporate social equity into public procurement (Stoffel, 2019). Studies in Kenya's oil and gas sector highlight resource capacity, legal frameworks, supplier participation and management commitment as key drivers of sustainable procurement (Murungi & Senelwa, 2020). In South Africa, organizational culture, regulatory compliance and market pressures influence sustainable practices in manufacturing (Nkosi & Mokoena, 2023).

In Kenya, sustainable procurement supports Vision 2030's goals of economic progress, environmental preservation and social inclusivity (Government of Kenya, 2007). Case

studies, such as Buzeki Logistics Ltd and Kerra, demonstrate its positive impact on business sustainability and cost reduction in road construction (Getenga, 2022; Machira, Ajwang & Kabubo, 2024). Research on state corporations shows that top management support, supply sourcing and perceived costs significantly influence sustainable procurement (Kirui & Paul, 2018).

This study investigates the enablers of the adoption of sustainable procurement practices among regional water service providers in Western Kenya, focusing on top management support, organizational resource capacity, supplier collaboration, and legal and regulatory frameworks, while evaluating the moderating role of organizational culture. It aims to address gaps in existing literature, providing insights to enhance public sector procurement in developing economies and promote strategies that balance environmental stewardship, economic efficiency, and social equity.

1.1.1 Water Services Sector in Kenya

The Water Services Regulatory Board (WASREB), established under the Water Act 2016, regulates Kenya's water sector to protect consumer and stakeholder interests. WASREB sets service standards, enforces compliance and promotes affordable, efficient water services. It also ensures the financial sustainability of Water Service Providers (WSPs) through tariff evaluations, accreditation and infrastructure oversight (Water Services Regulatory Board, 2016).

Enacted in April 2017, the Water Act 2016 aligns with the Constitution of Kenya 2010, devolving water and sanitation responsibilities to county governments. This reform

transferred WSP ownership and management to counties, reshaping governance and service delivery nationwide.

The Lake Victoria North Water Works Development Agency (LVNWWDA), one of eight regional agencies, enhances water governance and service delivery across six counties in Western and North Rift regions, serving approximately 6.5 million people. LVNWWDA manages regional water infrastructure and ensures compliance with the Water Act 2016, emphasizing sustainable procurement to optimize resource management (Lake Victoria North Water Works Development Agency, 2016). The Water Works Development Agencies draw their powers and functions under section 68 of the Water Act 2016.

This study examines the roles of WSPs in advancing Kenya's water sector. WSPs, primarily county-owned entities licensed by WASREB, deliver water and sanitation services, develop and maintain infrastructure and ensure efficient, affordable and sustainable service delivery within their jurisdictions (Lake Victoria North Water Works Development Agency, 2019).

Despite these efforts, challenges persist, particularly in achieving sustainable procurement and expanding water coverage. Rural-urban disparities in water access highlight the need for strategic improvements. In the Western region, infrastructure expansion and maintenance are hindered by limited procurement expertise, resource constraints and supplier resistance. High costs, lack of government incentives and technological barriers, especially for smaller organizations, further impede sustainable water service delivery (Water Services Regulatory Board, 2022; Kakamega County Water and Sanitation Company, 2022).

1.2 Statement of the Problem

Sustainable procurement plays a vital role in improving organizational performance and reducing costs. However, its adoption in Kenya's water sector remains inconsistent, particularly in the Western Region. The top management inefficiency in embracing sustainable procurement has become a key challenge, especially on its inability to allocate adequate organization resource for the cause. The court and legal battles as well as weak regulatory frameworks on sustainable procurement equally pose a threat (Ngubane, 2024). This further calls for a collaborative supplier team and flexible culture to embrace sustainable procurement.

Despite mandates requiring public entities to embrace sustainable procurement to achieve social and environmental goals, its implementation and impact on service delivery remain insufficiently explored (Kenya Markets Trust, 2019; Auditor-General, 2020; WASREB, 2023). Water Service Providers (WSPs) in Western Kenya face significant challenges, including resource constraints and supplier resistance. These issues contribute to inadequate infrastructure and result in unaccounted-for water losses, currently estimated at 43%. These issues undermine service delivery and pose risks to public health (Arnold, 2018). Furthermore, a lack of research on capacity-building strategies to improve procurement practices in regional water agencies hampers efforts to align with national water access goals (Auditor-General, 2020; WASREB, 2023).

Existing studies on sustainable procurement in Kenya's water sector primarily focus on state-owned enterprises in Nairobi and manufacturing firms (Muraguri, 2023; Amina, 2023; Shale & Nyile, 2016). These studies identify challenges such as budgetary

constraints and limited internal expertise but fail to address enablers specific to regional water service providers. Moreover, the role of organizational culture in moderating the relationship between enablers and procurement outcomes remains unexplored. International studies (Barbanti *et al*., 2022; Nangpiire *et al*., 2024; Oyewobi & Jimoh, 2022; Ngubane, 2024) provide insights into sustainable procurement but offer limited information on the influence of organizational culture. Global examples from Brazil and Uganda highlight the need for tailored solutions to address unique challenges. This study aims to bridge these gaps by investigating the enablers of the adoption of sustainable procurement practices and examining the moderating role of organizational culture in shaping procurement outcomes among regional water service providers in Western Kenya.

1.3 Objectives of the Study

1.3.1 General Objective

To investigate the enablers of the adoption of sustainable procurement practices in Kenya's water service sector in the Western Region.

1.3.2 Specific Objectives of the Study

i. To evaluate the influence of top management support practices on the adoption of sustainable procurement practices in Kenya's water service sector in the Western Region.

ii. To establish the influence of organizational resource capacity on the adoption of sustainable procurement practices in Kenya's water service sector in the Western Region.

iii. To investigate the influence of supplier collaboration on the adoption of sustainable procurement practices in Kenya's water service sector in the Western Region.

iv. To examine the influence of legal and regulatory frameworks on the adoption of sustainable procurement practices in Kenya's water service sector in the Western Region.

v. To evaluate the moderating influence of organizational culture on the relationship between the enablers of the adoption of sustainable procurement practices and the adoption of sustainable procurement practices in Kenya's water service sector in the Western Region.

1.4 Hypotheses of the Study

H01: Top management support practices have no statistically significant influence on the adoption of sustainable procurement practices in Kenya's water service sector in the Western Region.

H02: Organizational resource capacity has no statistically significant influence on the adoption of sustainable procurement practices in Kenya's water service sector in the Western Region.

H03: Supplier collaboration has no statistically significant influence on the adoption of sustainable procurement practices in Kenya's water service sector in the Western Region.

H04: Legal and regulatory frameworks have no statistically significant influence on the adoption of sustainable procurement practices in Kenya's water service sector in the Western Region.

H05: Organizational culture does not significantly moderate the relationship between enabling factors and the adoption of sustainable procurement practices in Kenya's water service sector in the Western Region.

1.5 Significance of the Study

The study holds substantial theoretical, practical and policy-making significance, addressing critical challenges in Kenya's water sector, particularly in the Western Region. Theoretically, it contributes to the academic understanding of sustainable procurement by empirically examining the influence of top management support, organizational resource capacity, supplier collaboration and legal and regulatory frameworks on its adoption. It also explores the moderating role of organizational culture, offering a nuanced framework for sustainable procurement in the context of water works agencies in developing economies. This fills gaps in existing literature, which often overlooks regional agencies and cultural influences (Muraguri, 2023; Amina, 2023).

This study's practical outcomes are intended to inform decision-making among regional water service providers in Western Kenya and comparable organizations by offering evidence-based recommendations to enhance procurement practices. By addressing operational challenges like the 43% water loss rate in Kakamega County due to illegal

connections and wastage, the study aims to improve efficiency, transparency and sustainability in water service delivery (Arnold, 2018). It also identifies areas for strategic capacity-building and investment, strengthening organizational resilience in response to market and regulatory shifts.

For policy-making, the study aligns with Kenya's Vision 2030 and the Water Act 2016, which emphasize sustainable development and efficient water management (Government of Kenya, 2007; Water Services Regulatory Board, 2016). Its findings can inform national policies to promote sustainable procurement, supporting broader sustainable development goals (SDGs), such as SDG 12 on Sustainable Consumption and Production (UNEP on Sustainable Public Procurement).

For the academic community, the study augments theoretical knowledge by delving into the interplay of management support, resource capacity, supplier collaboration and legal frameworks, with a focus on organizational culture's moderating role. This provides a comprehensive understanding of sustainable procurement drivers, particularly in public sector contexts in developing countries.

The study will benefit a diverse group of stakeholders, each gaining specific advantages from its findings. The beneficiaries include regional water service providers, policy-makers, academics, students, industry professionals, shareholders, the general public and international organizations.

1.6 Scope of the Study

This study investigates enablers of the adoption of sustainable procurement practices among Water Service Providers (WSPs) in Western Kenya, specifically within the

jurisdiction of the Lake Victoria North Water Works Development Agency (LVNWWDA). It examines the roles of top management support, organizational resource capacity, supplier collaboration, legal and regulatory frameworks, and organizational culture. The research targets WSPs serving approximately 6.5 million people across six counties in the Western and North Rift regions. Three WSPs were selected for this study: Kakamega County Water and Sanitation Company, Busia Water and Sewerage Services Company, and Amatsi Water Services Company. These entities were chosen for their extensive service coverage across multiple towns, diverse management and procurement staff structures, and significant regional representation within the LVNWWDA jurisdiction, as documented by LVNWWDA (2022) and WASREB (2022). The study population comprises 72 individuals, including 53 management staff and 19 procurement staff, representing a comprehensive cross-section of the workforce. Conducted between February and June 2025, the study provides an in-depth analysis of the interplay between the identified enablers and sustainable procurement practices within these key regional WSPs.

1.7 Limitations of the Study

The researcher anticipated challenges that could arise during the study. Some respondents were reluctant to share company-specific information due to confidentiality concerns, potentially limiting the completeness of data from the Water Service Providers (WSPs). To address this, the researcher built strong relationships with WSP stakeholders, fostering trust and transparency to ensure data access. Additionally, the researcher implemented strict confidentiality protocols to safeguard sensitive information while reassuring stakeholders of the academic intent and confidentiality of company data.

Furthermore, the researcher recognized the potential for delays in questionnaire

submissions by some top-level managers. To mitigate this, the researcher conducted repeated visits and followed up with respondents to encourage timely completion of the questionnaires. While numerous enablers affect sustainable procurement, the researcher focused on four key enablers: top management support, organizational resource capacity, supplier collaboration, and legal and regulatory frameworks. This study concentrated on the water service sector, leaving opportunities for future research in other service sectors.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

Chapter two provides a comprehensive review of the conceptual, theoretical, and empirical literature relevant to the enablers of the adoption of sustainable procurement practices. It outlines the definitions of key variables, explores associated theories, and presents empirical findings from other researchers.

2.2 Theoretical Review

Theory is the cornerstone of scholarly disciplines, providing structured concepts and principles that illuminate various phenomena (Yahaya, 2019). It is through theory that researchers can forge links between abstract ideas and empirical evidence, laying the groundwork for scientific predictions and explanations (Creswell, 2020). This research adopts the Resource-Based View as the leading theoretical foundation (Kraaijenbrink, Spender, & Groen, 2010).

2.2.1 Resource-Based View (RBV) Theory

The Resource-Based View (RBV) theory posits that an organization's sustainable procurement practices are underpinned by its unique internal resources and capabilities. Originally introduced by Wernerfelt (1984) and further developed by Barney (1991), RBV suggests that a firm's competitive advantage stems from resources that are valuable, rare, inimitable and non-substitutable (VRIN). These resources encompass both tangible assets, such as technology and capital and intangible assets, including brand reputation, organizational culture and proprietary knowledge (Wernerfelt, 1984; Barney, 1991).

In the context of sustainable procurement, RBV explains the significance of leveraging these internal resources to not only achieve competitive advantage but also to procure sustainably. Top management support, as acknowledged by Hawkins (2014), plays a pivotal role in steering the firm's strategic direction toward sustainable practices. The organizational resource capacity, which includes human, financial and physical resources, is essential for the effective implementation of sustainable strategies (Agyekum, 2021). Furthermore, supplier collaboration expands the firm's resource base and fosters innovation, aligning with RBV's emphasis on unique resources for competitive advantage (Seriki, 2020).

The legal and regulatory framework also influences the value of a firm's resources and, consequently, its sustainable procurement practices (Ampe-N'Da *et al.,* 2020). Organizational culture acts as a moderating variable, shaping the development and utilization of resources, thereby affecting the efficacy of RBV in sustainable procurement. A culture that prioritizes continuous improvement, ethical practices and robust supplier relationships can significantly enhance the application of RBV to sustainable procurement (Akushie & Yornu, 2024). While critiques of RBV highlight its static nature and challenges in measuring intangible resources (Etse, McMurray, & Muenjohn, 2023), the theory remains a valuable framework for understanding how internal resources contribute to sustainable procurement, emphasizing environmental, social and economic considerations.

2.2.2 Triple Bottom Line (TBL) Theory

The Triple Bottom Line (TBL) theory, pioneered by John Elkington in 1998, advocates for a sustainable approach to business that equally values social, environmental and economic outcomes (Elkington, 1998). This framework encourages organizations to extend their accountability beyond financial profits to include their impact on people and the planet. In the context of sustainable procurement, TBL emphasizes the value of top management support, organizational resource capacity, supplier collaboration and adherence to legal and regulatory frameworks (Slaper & Hall, 2011). Organizational culture plays a moderating role, influencing the extent to which TBL principles are embedded within procurement practices (Pettersen, 2020).

Critiques of the TBL theory highlight challenges in measuring and comparing non-financial outcomes, which can be subjective and lack standardized metrics (Norman & MacDonald, 2004). Despite these challenges, the theory remains influential in guiding organizations toward sustainable practices. By integrating TBL into procurement strategies, organizations can ensure that their operations contribute positively to environmental conservation, social equity and economic stability (Walker & Brammer, 2009). This alignment with TBL principles helps organizations navigate the complexities of sustainable procurement, fostering a culture of ethical purchasing and long-term sustainability (Hart & Milstein, 2003). The relationship between TBL and sustainable procurement is evident in the way the theory shapes organizational strategies and decision-making. It provides a comprehensive framework for considering the full spectrum of impacts that procurement decisions can have (Seuring & Müller, 2008). As organizations strive to align their practices with TBL principles, they contribute to a more sustainable future, ensuring that their operations benefit not just the bottom line but also

the broader community and the environment (Russo & Fouts, 1997). This close connection between TBL and sustainable procurement explains the theory's relevance and utility in addressing contemporary challenges in organizational sustainability.

2.2.3 Institutional Theory

Institutional Theory, as developed by DiMaggio (1983), examines the profound impact of the institutional environment on organizations, particularly how legal and regulatory frameworks influence sustainable procurement practices. Proponents of Institutional Theory, such as DiMaggio (1983) and Meyer and Rowan (1977), argue that organizations are shaped by their institutional environments, which include legal and regulatory frameworks. These frameworks are not just external pressures but are integral to the structure and functioning of organizations (DiMaggio, 1983; Meyer & Rowan, 1977). Institutional Theory suggests that organizations conform to these frameworks to gain legitimacy and stability, which in turn affects their sustainable procurement practices. The theory posits that the legal and regulatory framework is a critical independent variable that organizations must navigate to ensure successful procurement practices (DiMaggio, 1983).

Institutional Theory posits that organizations' sustainable procurement practices are shaped by the need to conform to the expectations and norms of the institutional environment in which they operate. This theory, as articulated by Meyer and Rowan (1977), suggests that adherence to laws, regulations and societal norms is essential for organizations to maintain legitimacy. However, scholars like Greenwood (2008) and Suddaby (2010) have critiqued Institutional Theory for not adequately accounting for the

dynamic nature of organizational change and the influence of individual actors on established norms. The relationship between Institutional Theory and sustainable procurement is significant, as it provides a framework for understanding how organizations institutionalize sustainable procurement practices. According to DiMaggio (1983), organizations adopt these practices in response to institutional pressures, which can lead to improved sustainability outcomes. The theory explains the value of aligning procurement practices with institutional norms and expectations to satisfy stakeholder demands, including those from customers, suppliers and regulatory bodies (Qazi & Appolloni, 2022; Haddadi et al., 2021).

Institutional Theory is particularly pertinent in explaining why organizations may adopt eco-friendly procurement strategies. The drive to maintain legitimacy, comply with regulations and meet stakeholder expectations compels organizations to implement sustainable procurement practices (DiMaggio, 1983; Meyer & Rowan, 1977; Qazi & Appolloni, 2022; Haddadi et al., 2021).

2.2.4 Stakeholder Theory

Stakeholder Theory, introduced by Freeman in 1984, suggests that organizations are part of a complex network involving various parties with distinct interests and influences. In his seminal work, Strategic Management: A Stakeholder Approach, Freeman (1984) expanded the concept of stakeholders to include any group or individual who can affect or is affected by the achievement of an organization's objectives. This theory underscores the necessity of acknowledging and integrating the perspectives of all stakeholders to ensure procurement practices are not only financially sound but also ethically considerate and environmentally conscious. This holistic approach is vital for achieving a balance

between economic efficiency and the broader imperatives of social responsibility and environmental sustainability.

Stakeholder Theory postulates that organizations should manage their operations in a way that accounts for the interests and influences of all stakeholders, not just shareholders. This includes recognizing the power, legitimacy and urgency of stakeholders' claims (Mitchell, Agle, & Wood, 1997). In sustainable procurement, the theory emphasizes the value of considering the interests and influences of all stakeholders in the procurement process. This approach ensures that procurement practices are not only economically efficient but also socially responsible and environmentally sustainable. Stakeholder Theory highlights several critical variables essential for sustainable procurement. Organizational resource capacity is also vital, as the effective allocation of resources among stakeholders is necessary for achieving sustainable procurement. Additionally, engaging suppliers as stakeholders fosters cooperation and shared value creation, leading to more sustainable procurement practices (Siems, Seuring, & Schilling, 2023).

Critics argue that Stakeholder Theory may lack scientific rigor and can be ideologically driven, potentially leading to contradictions between the ideology of social good and the ideology of control (Antonacopoulou & Méric, 2005). Additionally, the theory's broad inclusiveness of stakeholders may dilute the focus on specific transactional or capability requirements. Some critics point to its lack of precision in defining who qualifies as a stakeholder and the challenge of balancing the competing interests of different stakeholder groups, arguing that the theory may be too idealistic and not sufficiently grounded in economic realities. Stakeholder Theory directly addresses the complexities of sustainable procurement by emphasizing the need for an integrated approach that considers the

lifecycle of products and services and the diverse objectives of various stakeholders (Freeman, 1984; Gray et al., 1996). By encouraging organizations to collaborate with suppliers and other stakeholders, the theory supports improved sustainability in procurement practices (Siems, Seuring, & Schilling, 2023).

Stakeholder Theory is pivotal in this research as it underscores the significance of engaging with and addressing the interests of various stakeholders in the procurement process. In this context, Stakeholder Theory helps to identify the key stakeholders involved, such as suppliers, customers, employees, regulatory bodies and the community. It highlights the necessity of collaboration and communication with these stakeholders to ensure their needs and expectations are considered in sustainable procurement decisions. This approach can lead to more effective and inclusive sustainability practices, as stakeholders can offer valuable insights, support and resources. By applying Stakeholder Theory, the research can examine how stakeholder engagement influences the adoption of sustainable procurement practices and identifies the factors that enhance or hinder this engagement within Kenya's water service sector in the Western Region.

2.2.5 Denison Model

The Denison Organizational Culture Model, conceptualized by Daniel Denison in the early 1990s, serves as a pivotal framework for assessing organizational culture and its impact on sustainable procurement. Denison's model emphasizes four key cultural traits—Mission, Adaptability, Involvement and Consistency—which are believed to be integral to an organization's success (Denison, 1990). Proponents of the theory, including Denison and his colleagues, assert that these traits are essential for effective organizational functioning and can be directly linked to sustainable procurement outcomes (Denison &

Neale, 1996). The model postulates that a clear sense of mission, the ability to adapt to market changes, high levels of involvement among members and consistency in values and processes are all critical for sustainable procurement practices (Denison & Mishra, 1995).

2.3 Conceptual Review

2.3.1 Top Management Support

Mandal (2021) defines top management support as the active involvement and commitment of senior executives in providing necessary resources, strategic guidance and encouragement to ensure the success of organizational initiatives. This support is crucial for fostering an environment that promotes innovation, resilience and effective strategic sourcing within supply chains. According to the NBR ISO 9000:2015 standard, top management support refers to the actions and commitment of senior executives who lead and control an organization at the highest level, involving strategic direction, resource allocation and adherence to quality management principles.

Top management support is essential for fostering an environment that promotes innovation, resilience and effective strategic sourcing within supply chains (Mandal, 2021). It includes actions such as resource allocation, strategic decision-making and active participation in key projects, enabling organizations to better withstand disruptions and achieve their strategic goals. Kirui and Paul (2018) emphasize the need for a robust top management system (TMS) to enhance the effectiveness of sustainable procurement practices, encompassing a commitment to financial and human resources, maintaining policies that promote sustainability and guiding practices toward the procurement of sustainable products and services. Vorodam (2023) asserts that the commitment of top

management is essential for the effective integration of sustainable practices, which can lead to both cost savings and reputational benefits.

Research by Nyabuto and Nyakwara (2024) has established a positive correlation between a strong TMS and the success of sustainable procurement. The diversity and heterogeneity within TMS have been identified as key factors in improving firm sustainable procurement and the successful implementation of sustainable procurement strategies (Hulland, 2020; Aboramadan, 2021). TMS plays an indispensable role in setting policies that integrate environmental, social and governance (ESG) criteria into procurement decisions and overcoming barriers to sustainable procurement through strong leadership and strategic alignment with sustainability goals (Grandia et al., 2014; Alibašić, 2022).

In this study, top management support was measured by assessing the level of strategic direction provided by senior executives, the degree of leadership commitment to sustainability objectives and policy development.

2.3.2 Organizational Resource Capacity

Organizational resource capacity is defined as the ability of an organization to effectively utilize its available resources, including human, financial and technological assets, to achieve its strategic objectives (Ćwiklicki, Pawełek, & Pilch, 2020). This capacity encompasses the availability and allocation of resources necessary to support the implementation of new technologies and processes, emphasizing the value of specific resources such as human skills, financial resources and organizational structure (Ćwiklicki et al., 2020). Similarly, Cox, Jolly, van der Staaij and van Stolk (2019) describe it as the

multidimensional ability to utilize resources effectively, influenced by factors such as leadership, strategy, structure, skills and accountability.

Organizational resource capacity is crucial for strategic development and operational efficiency, allowing organizations to adapt to environmental changes and pursue sustainability goals (Rueda et al., 2006). Financial resources are essential for investing in human and technological advancements that drive sustainable procurement initiatives (Darnall, 2020). Human capital, representing the collective skills, knowledge and abilities of the workforce, is vital for innovation and value creation in procurement processes (Seuring & Gold, 2019; Deloitte, 2024). Technological capabilities are equally important, enabling organizations to optimize suppliers' sustainability and enhance sustainable procurement (United Nations Technology Bank, 2022; Sarkis *et al*., 2022).

In the public sector, organizational resource capacity includes the government's ability to manage financial, human, physical and information resources effectively (Ingraham, Joyce, & Donahue, 2003). In contrast, the non-profit sector views organizational capacity as the processes, management practices, or attributes that enable an organization to fulfill its mission (Eisinger, 2002). Studies have measured this capacity by evaluating the availability and allocation of resources, leadership effectiveness and the integration of technological advancements (Ćwiklicki *et al*., 2020; Cox *et al*., 2019).

In this study, organizational resource capacity was measured by assessing the availability and allocation of financial resources, the skills and expertise of human capital and the technological infrastructure in place.

2.3.3 Supplier Collaboration

Supplier collaboration is defined as a strategic and long-term partnership between a company and its suppliers, aimed at achieving mutual objectives such as cost reduction, risk mitigation, quality enhancement, and sustainability performance improvement (Osei & Asante-Darko, 2022). It goes beyond transactional relationships by fostering strategic alignment and mutual dependency, where both the company and its suppliers jointly pursue shared goals that contribute to overall competitiveness and supply chain resilience. In this regard, supplier collaboration entails the integration of suppliers into the company's core operational and strategic processes through mechanisms such as joint planning, coordinated problem-solving, and continuous improvement initiatives that benefit both parties.

According to Chopra, Meindl, and Kalra (2019), supplier collaboration represents strategic and coordinated efforts between a company and its suppliers designed to enhance the sustainability of procurement and supply chain performance. This is achieved through information sharing, goal alignment, and process integration, which together build transparency, trust, and responsiveness across the supply chain. Similarly, Thi Ho, Kumar, and Shiwakoti (2020) conceptualize supplier collaboration as a strategic partnership aimed at enhancing sustainable procurement through coordinated activities, consistent information flow, and joint problem-solving. These elements collectively strengthen inter-organizational relationships and improve adaptability in the face of market uncertainties.

Effective supplier collaboration leverages the complementary strengths and capabilities of both partners, enabling the co-creation of value and the enhancement of market competitiveness. Such collaboration ensures the seamless flow of materials, information, and knowledge throughout the supply chain, thereby supporting efficiency and innovation

(Osei & Asante-Darko, 2022). Strong communication channels, mutual trust, and a shared commitment to continuous improvement are central features of successful collaborations. These attributes contribute to competitive advantage and operational excellence by minimizing redundancy, improving product quality, and reducing lead times (Chopra et al., 2019). Moreover, supplier collaboration aligns with the principles of sustainable procurement, emphasizing long-term viability, resource efficiency, and social responsibility within supplier relationships.

Engaging suppliers directly in sustainable practices has been shown to improve production processes, optimize material use, and enhance overall sustainability performance (Tarigan & Siagian, 2021; Tanuwijaya et al., 2021). By participating in collaborative sustainability initiatives, suppliers become more attuned to the environmental and ethical expectations of the buying organization. This cooperation not only reduces environmental impact but also contributes to economic and operational efficiencies, reinforcing the firm's competitive edge. Cheng et al. (2012) and Tarigan (2019) further note that continuous improvement programs involving suppliers enhance technological capabilities, process innovation, and product development, making the entire supply chain more resilient and adaptive.

However, while proactive supplier relationships promote innovation and competitiveness, they can also introduce new forms of risk related to dependency, information sensitivity, and performance variability. Trkman and McCormack (2009) highlight that such risks necessitate the adoption of structured collaboration strategies, including transparent information sharing, supplier development practices, and joint decision-making frameworks. These strategies help in balancing cooperation and control, ensuring that

collaboration delivers value without compromising organizational integrity or supply chain stability.

Modern supplier collaboration also entails a multi-dimensional evaluation of suppliers, incorporating social, environmental, and economic criteria to promote sustainability (Silva & Schaltegger, 2019; Paybarjay et al., 2023). By assessing suppliers through sustainability lenses, organizations can establish appropriate relationships and tailor their development strategies accordingly. For instance, socially responsible suppliers are encouraged to adhere to ethical labor practices, while environmentally conscious suppliers may focus on resource efficiency and waste reduction. This approach creates a mutually reinforcing ecosystem, where suppliers are motivated to align with the buyer's sustainability agenda, leading to stronger and more transparent partnerships.

Risk management is a critical aspect of supplier collaboration. It involves identifying the scope, context, and criteria of risks that may arise from interdependence, followed by systematic risk assessment, treatment, monitoring, and review (Medina-Serrano et al., 2021). Continuous documentation and performance monitoring are essential to ensure compliance with agreed standards and expectations. Joint problem-solving with suppliers serves as a proactive mechanism for addressing potential disruptions and ensuring that challenges are managed collaboratively rather than competitively.

Joint activities in supplier collaboration include product development partnerships, training and capacity-building programs, financial or technical support initiatives, compliance monitoring, and long-term contractual agreements (Trapp & Sarkis, 2016). These activities foster a culture of trust, commitment, and shared accountability, which

strengthens the overall relationship. Long-term contracts, for example, provide stability and predictability, encouraging suppliers to invest in innovation and quality improvements that benefit both parties. Regular training and knowledge-sharing sessions enhance the supplier's technical and managerial competencies, aligning them with the buyer's performance expectations and sustainability objectives.

Furthermore, supplier collaboration facilitates co-innovation, where suppliers actively contribute to product and process innovations through shared expertise and resource pooling. Co-innovation enhances the agility of the supply chain, enabling faster adaptation to technological shifts and market demands. Capacity building ensures that suppliers possess the necessary skills, tools, and technologies to meet evolving standards, while effective communication channels guarantee that relevant information flows seamlessly between partners, minimizing errors and delays.

In today's competitive and sustainability-oriented business environment, supplier collaboration is not merely a best practice but a strategic imperative. Companies that nurture collaborative supplier relationships tend to achieve higher levels of supply chain integration, innovation, and sustainability performance. Collaboration enables organizations to transition from reactive procurement practices to strategic partnerships that drive continuous improvement and shared growth. By aligning the interests of both parties and fostering transparency, organizations can create more resilient supply chains capable of withstanding global disruptions.

In this study, supplier collaboration was operationalized by measuring the extent of co-innovation, joint problem-solving, capacity building, and communication between the company and its suppliers. These indicators capture the multidimensional nature of supplier collaboration, reflecting both the strategic and operational aspects that contribute to sustainable procurement and competitive advantage. Through these collaborative mechanisms, organizations can enhance trust, drive innovation, and ensure long-term success across the supply chain.

2.3.4 Legal and Regulatory Framework Practices

Legal and regulatory framework practices refer to the structured set of laws, policies, and institutional mechanisms that guide and control organizational behavior within a given jurisdiction. These frameworks establish the boundaries within which organizations operate, ensuring compliance with statutory requirements, promoting ethical conduct, and safeguarding the interests of various stakeholders (El Khafif & Salem, 2021). A well-designed legal and regulatory framework provides the foundation for good governance, accountability, and transparency in both public and private sector operations. It sets out the rights, responsibilities, and obligations of all actors involved in economic and administrative processes, thereby reducing ambiguity, preventing malpractice, and fostering trust in institutional systems.

In the context of procurement, the legal framework encompasses a comprehensive system of laws, regulations, and policies designed to achieve specific objectives related to the acquisition of goods, works, and services. As Lynch (2013) explains, the procurement legal framework can be categorized into guiding principles, procedural rules, and

regulatory mechanisms that define how acquisition processes are planned, executed, and monitored. It also includes the administrative and oversight bodies responsible for ensuring compliance and enforcing sanctions where necessary. These entities—often national procurement authorities, regulatory boards, and audit agencies—play a crucial role in ensuring that procurement activities are conducted in accordance with legal and ethical standards.

A robust procurement legal framework is essential for ensuring transparency, integrity, and fairness in the use of public resources. It sets clear rules for competitive bidding, evaluation, and contract award processes, thereby minimizing opportunities for corruption, favoritism, or undue influence (Murungi & Senelwa, 2019). Through transparency provisions, procurement laws promote public accountability by requiring that tender notices, evaluation reports, and contract awards be disclosed to the public. This openness enhances public confidence and ensures that procurement decisions are subject to scrutiny.

Beyond transparency, the legal and regulatory framework promotes ethical and sustainable procurement practices. By embedding sustainability clauses, such as those related to environmental protection, social responsibility, and economic inclusion, the framework encourages procuring entities to adopt practices that contribute to long-term societal and environmental well-being (Jones, 2024). For instance, some regulations require consideration of suppliers' adherence to labor standards, waste management, and carbon reduction initiatives as part of bid evaluations. This approach ensures that procurement decisions do not focus solely on cost but also on overall value and sustainability.

Adherence to established legal and regulatory frameworks directly contributes to procurement efficiency and supply chain sustainability. Mwanarafa and Osoro (2023) note that compliance with procurement laws leads to better planning, reduced transaction costs, and timely contract execution. Similarly, Wayono (2023) emphasizes that clear legal guidance minimizes disputes and delays by standardizing procedures and providing mechanisms for resolving grievances and appeals. Such predictability and consistency improve coordination between buyers and suppliers, enhancing trust and long-term collaboration.

Moreover, effective legal frameworks create an enabling environment for innovation and capacity building within the procurement function. They define professional standards, training requirements, and accountability measures for procurement officers, ensuring that practitioners possess the competencies and integrity needed to uphold public interest. When properly implemented, these frameworks foster continuous improvement, encourage responsible competition, and align procurement practices with broader national development goals.

In summary, the legal and regulatory framework in procurement serves as the backbone of governance, transparency, and sustainable performance in supply chains. By enforcing accountability, promoting ethical behavior, and ensuring compliance with established standards, it not only mitigates risks of corruption and inefficiency but also drives sustainable procurement outcomes. Consequently, organizations that operate within clear

and enforceable legal frameworks are more likely to achieve equitable, cost-effective, and sustainable procurement results that support economic growth and public confidence.

2.3.5 Organizational Culture

Organizational culture is defined as the foundational set of beliefs, values, norms and behaviors shared among members of an organization, shaped through processes of external adaptation and internal integration, influencing how employees interact, make decisions and approach their work (Bogale & Debela, 2024). It is also described as the shared values, beliefs and assumptions that shape behaviors and practices within an organization, developed through socialization processes and influenced by the organization's history, leadership and external environment (Ehrhart, Schneider, & Macey, 2023).

Organizational culture significantly impacts workplace dynamics, including employee interactions, treatment and management. Key dimensions such as innovation, teamwork, result orientation, masculinity, involvement and power distance contribute to the overall effectiveness and efficiency of the organization by aligning cultural practices with external demands and internal goals (Bogale & Debela, 2024). An effective organizational culture promotes ethical conduct, enhances employee engagement and supports the overall strategic objectives of the organization (Ehrhart *et al.,* 2023). A culture promoting teamwork, value alignment, transparency and ethical behavior significantly influences the success of sustainable procurement practices, leading to more effective procurement practices and enhanced efficiency (Gatari, 2023).

Paramita, Lumbanraja and Absah (2020) confirmed that organizational culture, when combined with organizational commitment, significantly affects employee sustainable procurement. Other studies have measured the impact of organizational culture on sustainable procurement practices, noting that cultures valuing sustainability and innovation are likely to implement successful sustainable procurement practices (Seuring & Gold, 2019; Adzimah, 2020). Contributions from Dubey *et al.* (2023), Carter and Easton (2021), Bohdanowicz *et al*. (2021) and Lambert et al. (2020) have elucidated how cultural aspects enhance procurement operations. Organizational culture was measured by assessing the presence of key dimensions such as innovation, teamwork, result orientation, involvement and ethical behavior.

2.3.6 Sustainable Procurement Practices

Sustainable procurement is defined as the strategic integration of sustainability considerations into the procurement process, encompassing environmental, social and economic dimensions (Miemczyk, Johnsen, & Macquet, 2020). It involves acquiring goods and services in a manner that considers the environmental, social and economic impacts of procurement decisions, aiming to achieve a balance between these dimensions to promote sustainability (Walker & Brammer, 2019). The Public Procurement and Asset Disposal Act (PPADA) of 2015 defines procurement as the process of acquiring works, resources and services through various contractual methods, including purchasing, leasing and licensing. The World Bank (2020) expands on this, describing public procurement as the acquisition of works, goods and services using public funds to serve the public interest. Sustainable procurement integrates sustainable development principles into procurement

processes, considering ethical and socially responsible purchasing (CIPS, 2014; Alibašić, 2022).

Sustainable procurement enhances organizational value by promoting productivity, communication and innovation. It leads to operational efficiency, cost savings and risk mitigation, positively impacting financial health and resulting in significant savings for organizations (Freitas & Villac, 2019; Shahab *et al*., 2020). These practices also reduce environmental impact, enhance reputation and improve stakeholder relationships. Current trends include leveraging state purchasing power, establishing national policies and adhering to international sustainable procurement guidelines. Lifecycle evaluations of products and services, considering recyclability and repairability, are crucial, aligning with circular economy principles (Liao, 2022; Geissdoerfer et al., 2017).

Stakeholder Theory highlights the value of engaging diverse stakeholders to support sustainable procurement (Gray *et al*., 1996; Ofori, 2021; Brammer & Walker, 2011; Adjei-Bamfo *et al.,* 2019; Grandia & Kruyen). Green procurement focuses on products and services with minimal environmental footprints, emphasizing eco-design and life-cycle analysis to minimize impact (Srivastara, 2007). Eco-design in product design and packaging aims to reduce environmental impacts through innovative solutions that promote reuse and recycling (Klevas, 2005). Electronic Procurement Platforms (EPP) use digital tools to automate procurement, improving efficiency, transparency and accountability and have been linked to better organizational sustainable procurement and sustainability outcomes, especially in developing countries (Maina, 2023; Mohungoo, Brown, & Kabanda, 2020). Sustainable procurement practices in this study were measured

by assessing the extent of green procurement, electronic procurement and supplier diversity.

2.4 Empirical Review of Literature

The empirical review of literature examines the issues that the study aims to concentrate on, with each subsection drawn precisely from the study objectives.

2.4.1 Top Management Support and Sustainable Procurement

Lee and Joo (2020) examined the impact of top management's support on collaboration among green supply chain participants and environmental sustainable procurement. Through an empirical analysis of data from 301 companies, the study employed statistical methods to interpret the findings. The results indicated that top management's support had a direct and positive effect on collaboration with green supply chain participants, which, in turn, led to improved environmentally sustainable procurement.

This research, conducted within South Korea's industrial landscape, diverges from the operational realities of Kenya's water sector institutions, suggesting a sectoral gap that necessitates customized approaches to management support and sustainable procurement. Additionally, the unique challenges and opportunities inherent in sustainable procurement within Kenya's water sector—absent in the South Korean manufacturing context—underscore the need for a contextualized understanding of sustainable procurement practices.

Basana, Siagian, Ubud and Tarigan (2022) investigated the impact of top management commitment on operational sustainable procurement, with a particular focus on green

purchasing and production within the manufacturing sector. The methodology involved a survey of 122 manufacturing firms in East Java, Indonesia, representing a substantial segment of the 578 companies in the region. The collected data were analyzed using the partial least squares method. The study found that top management's commitment had a significant positive effect on green purchasing and production practices, which, in turn, markedly improved operational sustainable procurement. Furthermore, a direct relationship was identified between operational sustainable procurement and green practices, with green purchasing exerting a notable influence on green production. However, the sectoral context presents differences. The Indonesian manufacturing sector faces distinct challenges and opportunities compared to Kenya's water works development sector, including variations in regulatory environments, stakeholder expectations and resource availability.

Asante and Boakye (2019) critically examined how top leadership affects procurement management responsiveness within Ghana's technical universities. The researchers employed a purposive-random sampling technique to select 25 respondents, ensuring focused data collection through structured questionnaires. The data were analyzed using correlation and linear regression analysis in SPSS, revealing a strong negative influence of top leadership on procurement management responsiveness, indicated by a Pearson's correlation coefficient of -0.704 and a p-value of 0.001. These results suggest that top leadership involvement could be counterproductive to procurement efficiency. However, the study identifies a conceptual gap in the differences between top leadership's impact in educational institutions versus water works development agencies, as well as a sectoral

gap due to variations in challenges and opportunities between Ghana's education sector and Kenya's water sector.

Okelo and Nyamita (2021) examined how top management's commitment influences the adoption of sustainable procurement within Kenyan organizations. Spanning various sectors—including ministries, state corporations and county governments—the study sought to determine the impact of top management support on organizational adoption of sustainable procurement practices. Data were collected from 143 procurement professionals using a descriptive and correlational design, revealing a positive correlation between top management's commitment and the effective implementation of sustainable procurement practices. The findings suggest that active involvement from top management enhances the adoption of sustainable procurement. However, a conceptual gap remains, as the study measured sustainable procurement by assessing the extent of top management commitment, whereas the current study focuses on green procurement practices, electronic procurement and supplier diversity.

Nyabuto and Nyakwara (2024), in their study titled Influence of Top Management Support on Sustainable Procurement in County Governments in Kenya: A Case Study of Kisii County Government, anchored their research in the Nortel Network External Environment Theory. Employing a descriptive research design, the study targeted employees across various departments, including IT, accounts and finance and procurement and logistics. Data collection was conducted through structured questionnaires, utilizing purposive and simple random sampling techniques to secure a representative sample. The data analysis employed both descriptive and inferential statistics. The strength and significance of the relationship were quantified using Pearson's correlation coefficient and p-values. The

results demonstrated a strong positive correlation, with a coefficient of 0.69 and a p-value of 0.00, signifying that top management support is significantly associated with enhanced sustainable procurement.

However, the study was conducted in a different sector, specifically the county government of Kisii, unlike the current study, which focuses on Kenya's water sector in the Western Region. Furthermore, the study examined sustainable procurement as the dependent variable, whereas the current study considers sustainable procurement as an independent factor, thereby highlighting a conceptual gap.

2.4.2 Organizational Resource Capacity and Sustainable Procurement

Pan, Mohammadi, Jantan and He (2023) explored how organizational resources and capabilities affect sustainable procurement in the large-scale manufacturing (LSM) sector in Jiangsu Province, China. Their research aimed to develop a conceptual framework based on the Resource-Based View (RBV) Theory, emphasizing the roles of knowledge integration and IT infrastructure. The study was theoretical, synthesizing existing literature to propose a model for future empirical validation. They hypothesized that knowledge integration and IT infrastructure are critical factors influencing organizational sustainable procurement in the LSM sector. The findings confirmed that organizational resources significantly influence sustainable procurement. However, since the study is theoretical and lacks empirical data, there is an opportunity for current research to empirically demonstrate the impact of resource capacity on sustainable procurement practices. Additionally, the LSM sector in China's industrial context does not directly correspond to Kenya's water sector. Furthermore, the study examined sustainable

procurement as the dependent variable, whereas the current study focuses solely on sustainable procurement.

Cox, Jolly, Van Der Staaij and Van Stolk (2018) conducted a study addressing the complex challenges faced by organizations worldwide. The study, a collaboration between RAND Europe and the Saatchi Institute, sought to deepen the understanding of organizational capacity, with a particular emphasis on the role of culture within organizations. Through a combination of interviews and literature review, the research examined how organizational culture and communication contribute to capacity building. The study conceptualized organizational capacity as a multidimensional construct linked to leadership, strategy, governance, skills, human capital and accountability. It highlighted the necessity of a diagnostic tool to effectively measure and harness this capacity. The findings indicated a consensus on the multidimensional nature of organizational capacity, identifying culture and communication as key factors. The study considered organizational capacity as the dependent variable, whereas the current study positions it as an independent variable, thus presenting a conceptual gap. Furthermore, the study was conducted in Europe, unlike the current study, which was conducted in Kenya, highlighting differences in cultural, economic and legal factors.

Boubakary and Moskolaï (2021) investigated sustainable procurement factors in Small and Medium-sized Enterprises (SMEs) in Cameroon, with a particular emphasis on organizational capacity. The study employed a quantitative research design and used surveys to collect data from SME employees and managers. The findings indicated that organizational capacity significantly enhances SME sustainable procurement. However, the study was conducted in a different context, focusing on SMEs in Cameroon, whereas

the current study examines Kenya's water sector. Additionally, the previous study positioned sustainable procurement as the dependent variable, while the current study examines it independently.

Robele (2021) explored the influence of organizational capacity on customer service delivery and overall sustainable procurement at Awash Bank in the North Addis Ababa region. Utilizing a descriptive survey methodology, the study collected quantitative data through questionnaires from both primary and secondary sources. The data were analyzed using descriptive statistics, multiple regression and correlation analyses, along with diagnostic tests. The findings revealed that organizational capacity influences both customer service delivery and overall sustainable procurement. However, the study was conducted in Ethiopia's banking sector, unlike the current study, which focuses on Kenya's water sector. Additionally, the previous study positioned sustainable procurement as the dependent variable, while the current study examines it independently.

Otiende, Omolo, Thuo and Wagude (2024) investigated the influence of organizational resources on sustainable procurement in public universities in Kenya. The primary objective was to assess the impact of organizational resources—human, financial and physical assets—on sustainable procurement within these universities. A mixed-method approach was employed, combining quantitative data from structured questionnaires with qualitative insights from interviews. The analysis, performed using SPSS, applied descriptive and inferential statistics. The findings indicated a positive link between organizational resources and sustainable procurement in universities, with a beta coefficient ($\beta = 0.504$), suggesting that organizational resources significantly influence sustainable procurement. However, the study examined sustainable procurement as the

dependent variable and was conducted in the higher education sector, whereas the current study focuses on the water sector.

Mulandi and Christine (2022) studied the effect of resource allocation on service delivery by Water Works Development Agencies (WWDAs) in Kenya. Methodologically, the study executed a comprehensive census involving all WWDAs in Kenya, with data collection facilitated through questionnaires completed by 80 employees. The analysis employed both descriptive and inferential statistics. The findings revealed a significant positive correlation between resource allocation and service delivery, suggesting that changes in resource allocation directly impact service delivery outcomes. However, this study positioned service delivery as the dependent variable, whereas the current study focuses on sustainable procurement.

2.4.3 Supplier Collaboration and Sustainable Procurement

Shah, Ling and Hasan (2021) provided a theoretical exploration of supplier collaboration within Malaysia's oil and gas industry. The study emphasizes the critical role of suppliers as strategic partners who contribute significantly to clients' business objectives through collaborative efforts. However, it acknowledges the need for further empirical data and practical application of the proposed framework, suggesting future research directions.

Pozzo et al. (2023) examined the effects of buyer-supplier collaboration on supply chain sustainable procurement in Brazil's electronics sector. The research assessed how collaboration impacts supply chain sustainable procurement, focusing specifically on collaborative sales planning and its effect on inventory management. Using a case study approach, the study analyzed the influence of macroeconomic factors and strategic

orientations on collaboration, emphasizing the value of trust, inventory volume, negotiation power, intent to control and perceived fairness in successful collaboration. The study concluded that buyer-supplier collaboration positively influences supply chain sustainable procurement.

Employing a quantitative approach, the study gathered data through structured questionnaires from industry professionals, revealing that practices such as supplier involvement, ethical procurement and green procurement significantly improve operational sustainable procurement. However, the study's limited scope may affect its generalizability and research gaps were not explicitly identified. Additionally, the study was conducted in Ghana's manufacturing sector, whereas the current research focuses on Kenya's water sector.

Riofiandi and Tarigan (2022) investigated the effects of supplier collaboration on company sustainable procurement within Java's manufacturing sector, examining lean manufacturing and inventory control as mediating factors. Using a survey approach, data were collected from 70 companies in the chemical and non-metallic mineral industries and structural equation modeling was employed to validate the hypothesized relationships. The findings indicated a significant positive impact of supplier collaboration on company sustainable procurement, with inventory control emerging as a notable mediator. However, lean manufacturing did not show a significant mediating effect. The current study, situated within Kenya's water sector, presents unique challenges and opportunities that were not addressed in Java's manufacturing sector.

Mwangi and Muli (2022) conducted a comprehensive study in Kiambu County on the influence of Supplier Relationship Management (SRM) on sustainable procurement within food and beverage manufacturing firms in Kenya. The study assessed the impact of SRM elements such as supplier segmentation, collaboration, information flow and development on organizational sustainable procurement. Utilizing a cross-sectional survey design, the researchers gathered data from 189 officers across 63 organizations. Their findings revealed a positive correlation between SRM elements and improved firm sustainable procurement, underscoring the strategic value of supplier relationships. The current study is tailored to address the unique challenges and opportunities within Kenya's water sector.

Mejooli and Senelwa (2022) examined the effect of supplier relationships on sustainable procurement in public universities within Nairobi County. Guided by Social Exchange Theory and Transaction Cost Theory, the research employed a cross-sectional design. Data were collected from 73 employees across the supply and procurement departments of three universities using questionnaires. The analysis, involving descriptive and inferential statistics, revealed that information sharing and management cooperation significantly enhanced sustainable procurement. The current research is tailored to Kenya's water sector, addressing challenges and opportunities distinct from those in the public university context. Moreover, while the previous study examined sustainable procurement as a dependent variable within procurement, the current study focuses solely on sustainable procurement.

Arusei and Musau (2020) assessed the impact of supplier collaboration on sustainable procurement within the county government of Elgeyo Marakwet, Kenya. They employed

a descriptive research design involving 140 county government staff members, with a sample size of 104. Data were collected through structured questionnaires and analytical methods included descriptive and inferential statistics, with regression analysis used to identify causal relationships. The study found that supplier collaboration has a statistically significant positive influence on sustainable procurement. While this study was confined to the county government sector, the current research extends to the water works development sector, which may face distinct challenges and opportunities in implementing sustainable procurement practices.

Gatobu (2018) explored the influence of Supplier Relationship Management (SRM) on sustainable procurement in the Fast-Moving Consumer Goods (FMCG) manufacturing sector in Nairobi City County, Kenya. The study examined the impact of SRM practices—including supplier collaboration, contracting and relationship management—on sustainable procurement. Engaging 225 supply chain officers from FMCG firms, the research employed a descriptive design and collected data through questionnaires. The analysis, utilizing both descriptive and inferential statistics with SPSS, revealed a strong correlation (0.833) between SRM practices and sustainable procurement, with these practices accounting for 69.40% of the variation in sustainable procurement. The study recommends enhancing supplier collaboration, strategic alliances and partnerships to improve procurement quality and efficiency. While this study analyzed the combined effect of SRM, including supplier collaboration as a measure, the current study focuses on supplier collaboration as an independent variable, with sustainable procurement as the dependent variable.

2.4.4 Legal and Regulatory Framework and Sustainable Procurement

Cantera (2021) underscored the critical need for legal reform within Spain's urban transport public service sector. The research aimed to evaluate the alignment of current management models with public procurement laws, specifically analyzing the management models outlined by Law 7/1985 and their influence on the application of Law 9/2017 on Public Sector Contracts. Through a comprehensive legal analysis, Cantera scrutinized the relationship between urban public transport management models and the application of public procurement rules, revealing a discriminatory application of contractual legislation that violated the principle of equality and led to unequal treatment. The study's findings exposed inconsistencies in the current application of contractual legislation, disrupting the uniformity of public procurement rules. While this study focused on the legal analysis of contract law in the public sector, the current research examines procurement law, environmental law and contract law, incorporating quantitative data analysis.

Giosa (2020) examined the vulnerabilities of framework agreements to bid-rigging within European public markets. The research aimed to identify elements within these agreements that facilitate supplier coordination and make bid-rigging attractive, thus compromising public procurement objectives such as value for money and operational efficiency. The findings revealed that framework agreements are inherently susceptible to collusion, with specific features predisposing them to bid-rigging. The study highlights the urgent need for legal reform to ensure the integrity of public procurement and maintain fair competition.

Mishra and Kumar (2021) conducted a systematic review of empirical literature on how regulatory frameworks impact sectoral sustainable procurement. Their study provided a

detailed examination of the influence of regulatory frameworks across various industry sectors. The findings indicated that a regulatory framework characterized by formality, expertise, transparency, independence and pervasiveness significantly contributes to market efficiency. However, a sectoral gap exists, as Mishra and Kumar's research spans multiple industry sectors, whereas the current study focuses on the water works development sector in Kenya. Additionally, while Mishra and Kumar's study was a systematic review of literature, the current research collected and analyzed primary data.

Mwanarafa and Osoro (2023) explored the interplay between the public procurement legal framework and sustainable procurement within Kenya's National Transport and Safety Authority (NTSA). Employing a descriptive research design, the study analyzed procurement records and interviews with personnel, revealing a direct link between the implementation of the legal framework and NTSA's efficiency and effectiveness. While their research concentrated on the transport sector, the current study focuses on the water works development sector. Furthermore, while the previous study focused solely on procurement law, the current research examines both procurement and environmental law.

Murungi and Nyang'au (2020) examined the critical factors influencing the adoption of sustainable procurement within Kenya's oil and gas sector, specifically Kenya Pipeline. Utilizing a descriptive research design, data were gathered from 45 employees in the procurement department through questionnaires. The analysis, performed using multiple regression techniques, demonstrated that resource capacity, legal and regulatory frameworks, supplier participation and management commitment all significantly and positively affect sustainable procurement implementation. While Murungi and Nyang'au's research was tailored to the oil and gas sector, the current study concerns the

water works development sector in Kenya. Furthermore, the previous study analyzed the combined effect of all sustainable procurement drivers—including the legal and regulatory framework—whereas the current study examines the individual effect of the legal and regulatory framework and considers organizational culture as a moderator.

Mutangili (2021) critically assessed the impact of public procurement law on sustainable procurement within Kenya's energy sector. The study evaluated the soundness and hierarchical structure of the legal framework in public procurement, measuring its thoroughness and clarity—key factors for engaging with qualified suppliers. The findings indicated that Kenya has a robust legal framework for public procurement, which plays a crucial role in sustainable procurement within the energy sector. The study concluded that a comprehensive legal framework is vital for sector-wide sustainable procurement. However, a sectoral gap exists, as Mutangili's research focused on the energy sector, whereas the current study pertains to the water works development sector.

2.4.5 The Moderating Role of Organizational Culture in the Relationship Between the Enablers and the Adoption of Sustainable Procurement Practices.

Rizal, Hartanto, Muthofa and Suharmanto (2020) conducted a study titled the effect of Moderation of Organizational Culture on the Relationships Between Job Satisfaction and Work Motivation Towards Employee Sustainable Procurement, focusing on the National Search and Rescue Agency in Semarang City, Central Java, Indonesia. Employing a quantitative approach, the study utilized regression analysis to analyze data from 124 agency employees. The findings underscored the significant and positive influence of

work motivation and job satisfaction on employee sustainable procurement, with organizational culture serving as a strengthening factor in this relationship. However, the findings of this study may not be generalized, as it was conducted in a different context—specifically Indonesia. Furthermore, it focused on employee motivation and job satisfaction in relation to sustainable procurement, unlike the current study, which examines the impact of organizational culture on sustainable procurement practices in Kenya's water sector.

Aćimović, Mijušković and Spasenić (2021) investigated the influence of organizational culture on supply chain integration (SCI) within companies in the Republic of Serbia, measuring the moderating effect of organizational culture on SCI by examining the relationship between different cultural dimensions and aspects of SCI, such as flexibility and financial sustainable procurement. The findings reveal that a rational culture is most conducive to SCI, being fully associated with all aspects of SCI, while hierarchical and developmental cultures are significantly related only to internal and customer integration. However, the study's Serbian context differs from the Kenyan water sector setting, necessitating research tailored to the unique challenges of the Kenyan water sector. The study does not directly address sustainable procurement practices, leading to a conceptual gap in understanding how organizational culture specifically affects these practices. Additionally, there is a sectoral gap since the study does not explore the water sector or its distinct challenges. The current study addresses these gaps by focusing on the impact of organizational culture on sustainable procurement practices within Kenya's water sector.

Aryani, Sapta and Sujana (2021) examined the influence of organizational culture and competence on employee sustainable procurement, mediated by organizational commitment, within the procurement sector of the Karangasem Regency Government. Employing Structural Equation Modeling (SEM) with SmartPLS 3.0, the researchers analyzed responses from 76 government personnel to understand these interconnections. The study found that a strong organizational culture positively influences both commitment and sustainable procurement, underscoring the importance of a robust cultural framework in enhancing employee output. However, the context of Kenya's water sector differs from that of the Karangasem Regency Government's procurement sector, particularly in terms of environmental and social challenges unique to the Kenyan water sector. Moreover, the study does not focus on the water sector, which is critical for understanding the impact of organizational culture on sustainable procurement within water works development.

Shuaib and He (2023) explored the role of organizational culture in reinforcing Total Quality Management (TQM) practices to foster innovation, focusing on manufacturing SMEs in Nigeria. The study found that organizational culture moderates the relationship between TQM and organizational innovation. However, the study's primary setting within Nigeria's manufacturing sector introduces contextual differences from the water works development environment in Kenya, which may limit the direct applicability of the findings. Additionally, the focus on manufacturing SMEs calls for a tailored approach within the water sector, considering the unique dynamics of a water works development agency. The study does not explicitly address sustainable procurement practices, creating

a conceptual gap in understanding the specific impact of organizational culture on sustainable procurement in Kenya's water sector.

Adzimah and Ishawu (2020) confirmed that organizational culture moderated the relationship between Corporate Social Responsibility (CSR) and sustainable procurement within Ghana's service sector. The study utilized multiple regression and mediation analysis to analyze data from 526 service industry employees. The research highlights that CSR initiatives targeting internal stakeholders exert a more pronounced influence on sustainable procurement than those aimed at external stakeholders. However, as the study was conducted in a different context Ghana its findings cannot be generalized to Kenya. Additionally, the study focused on the mediating effect of organizational culture, whereas the current study examines its moderating effect.

Lowalan, Mutiiria and Gichunge (2023) investigated the influence of organizational culture on the sustainable procurement of supply chain functions within Turkana County Government in Kenya. Employing a descriptive research design, the authors collected quantitative data and utilized both descriptive and inferential statistics, including regression and correlation analysis. The research targeted 137 respondents, ranging from Chief Officers to Directors within Turkana County Government offices, with a sample size of 102 respondents. A structured questionnaire was administered to departmental heads overseeing supply chain functions. Key cultural elements identified as critical to effective supply chain operations included customer satisfaction, collaboration, continuous improvement, ethical behavior and innovation. The study concluded that a positive organizational culture significantly enhances sustainable procurement in supply chain functions. The current study's emphasis on organizational culture as a crucial factor

in sustainable procurement practices aligns with the value of collaboration and continuous improvement. However, there is a sectoral gap, as the study focused on county government, whereas the current study pertains to the water works development sector. Furthermore, while the previous study measured organizational culture using aspects such as customer satisfaction, collaboration, continuous improvement, ethical behavior and innovation, the current study assesses organizational culture using mission, adaptability, consistency and involvement. Additionally, the previous study examined the direct effect of organizational culture, while the current study focuses on its moderating effect on sustainable procurement practices.

Chebichii, Namusonge and Makokha (2021) explored the moderating effects of organizational culture on the relationship between supplier development and organizational sustainable procurement in Kenya's food and beverage manufacturing sector. The study employed a mixed-methods approach, grounded in resource dependency theory and utilized both descriptive and regression analyses. Data from 651 procurement managers and officers across 217 companies were analyzed using SPSS software, ensuring the reliability and validity of the instruments used. The findings underscore the pivotal role of organizational culture in moderating the relationship between supplier development and organizational sustainable procurement. The study suggests potential for further research on the moderating effects of organizational culture across different sectors or using varied measures, indicating a conceptual gap that the current research aims to address. Additionally, the study reveals a sectoral gap, as it focuses on the food and beverage manufacturing industry, while the current research pertains to the water works sector.

Table 2. 1: Summary of Synthesis of Research Gap

Author & Year	Title	Methodology	Findings	Gaps and Focus of Current Study
Lee & Joo (2020)	The Impact of Top Management's Support on the Collaboration of Green Supply Chain Participants and Environmental Sustainable procurement	The study conducted an empirical analysis of 301 companies that are establishing a green supply chain.	Top management's support positively affects the level of collaboration with suppliers and customers in the green supply chain	Understanding the theoretical mechanisms by which top management's support leads to improved environmentally sustainable procurement. The focus of the study is on analyzing these mechanisms and drawing implications for better environmental collaboration and sustainable procurement
Vorodam (2023)	Sustainable Procurement Practices and Organizational Sustainable procurement: A Study of the Ghanaian Manufacturing Sector	Empirical investigation approach, surveying 150 manufacturing firms in Greater Accra	Top management commitment as a significant moderator in the relationship between sustainable procurement practices and organizational sustainable procurement	Empirical evidence and theoretical understanding of the mechanisms linking sustainable procurement practices to organizational sustainable procurement
Obiri, Machuki & Nyamita (2021).	The Effects of Top Management in Adoption of Sustainable Procurement Practices in Kenya	Descriptive and correlation research designs, collecting data from 143 respondents usingstructured questionnaires. The data were analyzed using descriptive and inferential statistics.	Most procurement departments have adopted sustainability in procurement and that there is a positive correlation between top management commitment and the adoption of sustainable procurement practices in Kenya	Understanding the broader impact of top management's commitment on sustainable procurement beyond the correlation, such as the specific actions and policies that lead to successful implementation

Author & Year	Title	Methodology	Findings	Gaps and Focus of Current Study
Pan, Mohammadi, Jantan & He (2023)	The Effect of Organizational Resources and Capabilities on Organizational Sustainable procurement of Large-Scale Manufacturing Sector in Jiangsu Province, China	A conceptual framework based on the Resource-Based View (RBV) Theory, focusing on knowledge integration and information technology infrastructure as key influences on organizational sustainable procurement	Knowledge integration and information technology infrastructure have significant potential impacts on the organizational sustainable procurement of the large-scale manufacturing sector in China	The study identifies a gap in empirical research regarding the factors influencing the adoption of sustainable procurement practices in China's Large-Scale Manufacturing (LSM) sector. Future research is recommended to empirically test the proposed conceptual framework and its applicability in the context of large-scale manufacturing firms
Boubakary & Moskolaï (2021)	Organizational Capacity and Sustainable procurement of SMEs: An Explanation in the Cameroonian Context	Quantitative research approach to analyze data collected from various SMEs within the country	Capacity to acquire external knowledge and innovation significantly and positively influences the organizational sustainable procurement of SMEs	A gap in the literature regarding the specific elements of organizational capacity that contributes to SME sustainable procurement, particularly in the African context. Providing empirical evidence from Cameroon and highlighting the need for SMEs to enhance their capacity
Otiende, Omolo, Thuo & Wagude (2024).	Influence of Organizational Resources on the Sustainable procurement of Public Universities in Kenya	Employed a quantitative research approach, analyzing data from public universities in Kenya to assess the impact of organizational resources on sustainable procurement.	Found a significant relationship between the availability and management of organizational resources and the sustainable procurement outcomes of public universities.	The understanding of how specific organizational resources contribute to the sustainable procurement of public universities in Kenya. Providing empirical evidence to fill these gaps and offering recommendations for resource optimization
Author & Year	**Title**	**Methodology**	**Findings**	**Gaps and Focus of Current Study**

Shah, Ling & Hasan (2021)	Raising Sustainable procurement through Supplier Collaboration: Framework for Supplier-Client Service.	Analyzed the concept of supplier collaboration, supply chain management, procurement and the inter- relationship between supplier collaboration and the oil and gas industry	Suppliers play a crucial role not just in providing products or services but also in helping buyers meet their business objectives	It notes the intention to expand the research with case study analysis in future work, indicating a gap in empirical data and a focus on practical applications of the framework in real- world scenarios.
Riofiandi & Tarigan (2022)	The Effect of Supplier Collaboration on Company Sustainable procurement through Lean Manufacture and Inventory Control	Utilized a survey methodology among 70 manufacturing companies. It employed validity and reliability analysis and structural equation modeling to test hypotheses using smartPLS software	Supplier collaboration practices positively and significantly affect company sustainable procurement. Inventory control positively and significantly mediate the relationship between supplier collaboration practices and company sustainable procurement	Understanding of the mediation effect of inventory control and lean manufacturing on the relationship between supplier collaboration and company sustainable procurement.
Mwangi & Muli (2022)	Influence of Supplier Relationship Management on the Sustainable procurement of Food and Beverage Manufacturing Firms in Kenya: A Survey of Kiambu County	Cross-sectional survey design using both qualitative and quantitative approaches, targeting officers working in procurement, warehousing and logistics departments in 63 food and beverage organizations	Supplier relationship management, influenced by elements such as supplier segmentation, information flow, supplier collaboration and supplier development, has a positive influence on the sustainable procurement of food and beverage manufacturing firms in Kiambu County.	The study suggests a gap in understanding the broader impact of these supplier relationship management elements on sustainable procurement, indicating potential areas for further investigation

Author & Year	Title	Methodology	Findings	Gaps and Focus of Current Study
Giosa, (2020)	Preventing Collusive Tendering in Public Markets–The Case of Framework Agreements	It utilizes a qualitative approach to identify elements of framework agreements that facilitate coordination and make bid-rigging attractive to suppliers.	Framework agreements, especially popular in Northern Europe, are vulnerable to collusion and the article suggests design features to reduce the scope for collusive outcomes within the procurement function	Identifies a gap in the current understanding of how framework agreements can be designed to prevent collusion. It focuses on making suggestions for preventing collusion in framework agreements and introduces new design features to mitigate the risk of collusive tendering
Mwanarafa & Osoro (2023)	Public Procurement Legal Framework and Sustainable procurement of National Transport and Safety Authority, Kenya	The methodology involved an empirical analysis of the National Transport and Safety Authority's procurement activities within the context of Kenya's legal framework.	Found a correlation between the effectiveness of the public procurement legal framework and the sustainable procurement outcomes of the National Transport and Safety Authority in Kenya.	Identified gaps in the application and impact of the public procurement legal framework on organizational sustainable procurement. The focus of the study was on understanding these gaps and providing recommendations for improvement
Mutangili (2021)	The Impact of Public Procurement Law on the Sustainable procurement of Energy Sector in Kenya	The study assessed the impact of public procurement law on the sustainable procurement of the energy sector in Kenya, focusing on the legislative and regulatory framework.	It found that Kenya has a sound legal framework for public procurement, which has been beneficial following the enactment of the PPDA and Regulations	A establish supplier appraisal audit policies and adopt ethical policies and guidelines established by the PPRA and KISM. It suggests a need for policies on the ethical use of information technology to enhance transparency and accountability in supply chain sustainable procurement

Author & Year	Title	Methodology	Findings	Gaps and Focus of Current Study
Adzimah and Ishawu (2020)	Organizational culture influences on corporate social responsibility and sustainable procurement in a service sector industry.	Quantitative research design. Analyzed responses from 526 employees of service organizations.	Internal CSR initiatives have a more significant impact on sustainable procurement than external CSR efforts. Organizational culture acts as a partial mediator in this relationship.	The study didn't consider external factors or individual differences and may have biases from self-reporting. Future research should expand its scope and methodology to better understand organizational culture's impact on sustainable procurement.
Lowalan, Mutiiria and Gichunge (2023)	Effects of organizational culture on sustainable procurement of supply chain functions in Turkana County Government.	Descriptive quantitative study. Surveyed 137 officials in Turkana County.	A significant positive correlation between a strong, aligned organizational culture and supply chain success.	The study's focus was narrow, potentially causing bias. It didn't account for wider influences on supply chain sustainable procurement. Expanding research scope and methods is needed for a comprehensive analysis.
Aryani, Sapta and Sujana (2021)	The influence of organizational culture and competence on employee sustainable procurement mediated by organizational commitments in the procurement of goods and services Secretariat Regency of Karangasem	Quantitative approach using Structural Equation Modeling(SEM) via SmartPLS 3.0. Data collected from 76 certified procurement officials through surveys.	Organizational culture and competence positively affect organizational commitment and employee sustainable procurement. Organizational commitment serves as an intermediary in this relationship	No account for external variables or individual employee diversity. It focused solely on certified government procurement staff, limiting the scope. These could be addressed by: Including external variables. Considering the diversity among individual employees. Expanding the research to include a wider range of participants

Source: Literature Review (2024)

2.5 Conceptual Framework

A conceptual framework comprises broad ideas and principles drawn from relevant fields of inquiry, used to structure a subsequent presentation (Reichel & Ramey, 1969). It serves as a tool to help researchers develop awareness and understanding of the situation under examination. This framework aids in explaining the relationships among interlinked concepts, such as dependent and independent variables (Kombo, 2006). In this study, the dependent variable is conceptualized within the context of dependent-independent variable components and their indicators. The figure below provides a diagrammatic representation of the relationship between the dependent variable and the independent variables.

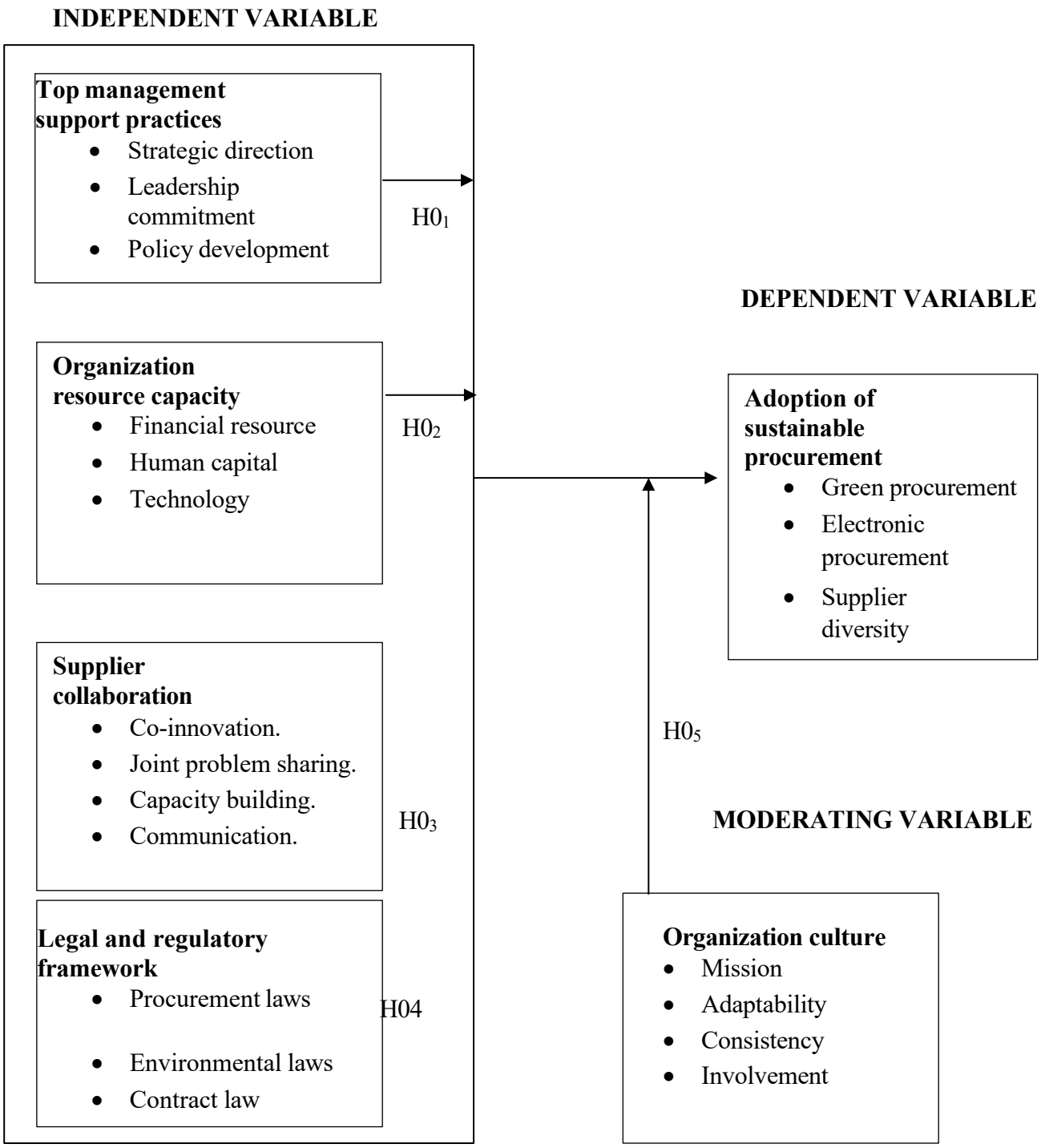

Figure 2.1: Conceptual Framework
Source: adapted from others studies (Nyabuto and Nyakwara 2024, Murungi and Paul 2021, Denison model 1990)

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter outlines the research methodology, which serves as the overarching strategy for collecting and analyzing data to address the research questions effectively (Saunders *et al.,* 2009). It details the research design, target population, sampling frame, data collection methods, research procedures, data analysis, presentation techniques and ethical considerations observed throughout the study.

3.2 Study Area

The study was conducted in four counties: Bungoma, Kakamega, Busia and Vihiga. These counties were selected due to their coverage by various Water Service Providers under the Lake Victoria North Water Works Development Agency (LVNWWDA), which aims to achieve universal water access by 2030 (Impact, 2022). The Water Service Providers include: Bungoma water and sanitation company; Serving Chwele, Webuye, Kimilili and Bungoma towns. Kakamega County Water and Sanitation Company: Operating in Kakamega, Lumakanda, Khayega, Mumias and Butere towns. Amatsi Water Services Company: Covering Luanda, Majengo, Chavakali, Kaimosi, Maseno and Mbale towns. Busia Water and Sewerage Services Company: Serving Busia Town, Malaba, Nambale, Funyula, Port Victoria, Bumala, Butula,and Budalang'i areas. These providers are pivotal in ensuring sustainable procurement practices within the region.

3.3 Research Design

The research design serves as a navigational guide to uncover truths with authenticity, precision and accuracy (Kumar, 2020). It encompasses qualitative and quantitative inquiry frameworks, each prescribing specific procedural steps (Dawadi, 2021). An effective research design logically orchestrates study elements to address the research problem cohesively (Lopes, 2020). This study adopted a mixed-methods research design, combining descriptive and correlational approaches.

The descriptive cross sectional design was used to gather information on the current state of variables and circumstances (Creswell & Creswell, 2022). The correlational design aimed to establish relationships between variables, specifically to determine connections among the independent variables (top management support, organizational resource capacity, supplier collaboration and legal regulatory framework) and the dependent variable (adoption of sustainable procurement). Regression analysis quantified the strength and direction of these relationships, with the model's robustness assessed to ensure reliability and validity (Creswell, 2020).

3.4 Target Population

The study focused on a specific subset of the population that accurately reflects the intended characteristics, as outlined by Casteele (2021). The target population comprised 72 individuals from the Water Service Providers, including 53 management staff and 19 procurement staff, who were key contributors to the research.

3.5 Sample Size and Sampling Technique

The study utilized a census method, involving a complete evaluation of all 72 individuals in the target population, as the population size was small and manageable (Rahman, 2022). This approach eliminated sampling bias, ensured high precision and provided a

comprehensive representation of the population. The sampling frame comprised employees from five water service companies in Western Kenya

Table 3.1: Population sample

Water Company	Categories	Population
Busia Water and Sewerage Services Company	Management Staff	**9**
	Procurement Staff	**3**
Kakamega County Water and Sanitation Company	Management Staff	**19**
	Procurement Staff	**8**
Amatsi Water Services Company	Management Staff	**11**
	Procurement staff	**4**
Bungoma water and sanitation company	Management Staff	**14**
	Procurement Staff	**4**

Source: Lake Victoria North Water Works Development Agency (2024)

3.6 Data Collection Instruments

Data encompasses all information collected, observed, or generated to support research findings (Kumar, 2020). Primary data were gathered using structured questionnaires tailored to the study's objectives. The questionnaires were distributed to senior management and procurement staff and divided into four sections: Section A: Demographic and background information; Sections B, C, and D: Enablers of the adoption

of sustainable procurement practices, assessed using a five-point Likert scale (1 = Strongly Disagree, 5 = Strongly Agree). The Likert scale minimized misinterpretation and standardized responses, as recommended by Serrat (2020).

3.7 Data Collection Procedure

The researcher obtained an introductory letter from Masinde Muliro University of Science and Technology and a research permit from the National Commission for Science, Technology and Innovation (NACOSTI) to facilitate data collection. Questionnaires were distributed using the drop-off and pick-up method, supported by three research assistants. This self-administered approach allowed respondents time to provide thoughtful answers, enhancing response quality (Cooper, 2020). A preliminary study tested the instruments' validity and reliability before full-scale data collection.

3.7.1 Pilot Testing

Pilot testing was conducted at SIBO Water and Sanitation Company Limited (SIBOWASCO) in Siaya County, under the Lake Victoria South Water Works Development Agency, to avoid homogeneity with regional water service providers in Western Kenya under LVNWWDA. The pilot involved nine management and procurement staff, aligning with Mugenda and Mugenda's (2008) recommendation of 1–10% for pilot testing. The pilot assessed questionnaire clarity, relevance and structure, with feedback used to refine the instruments (Saunders, 2020).

3.8 Reliability and Validity

3.8.1 Reliability

Reliability refers to the extent to which an instrument consistently produces the same results over time. As Cobern (2020) notes, stable survey responses indicate reliability, provided no significant changes have influenced the respondents' perspectives. In essence, a reliable instrument should yield comparable outcomes across different timeframes.

This study assessed internal consistency reliability using the Cronbach's Alpha test. According to Bryman and Bell (2022), the variable ranges between 1, denoting perfect internal reliability and 0, indicating no reliability. A value of 0.80 is typically considered an acceptable (satisfactory) level of internal reliability. Jackson (2015) established that a value of 0.7 and above signifies strong reliability, 0.3 to 0.69 indicates moderate reliability and 0 to 0.29 represents weak or no reliability.

3.8.2 Validity of Instrument

Validity ensures that a research instrument accurately measures the intended constructs (Saunders, 2020). An instrument's effectiveness is determined by its ability to capture the relevant behavior or quality and by the appropriate interpretation of the data obtained after analysis. To ensure reliability, this study rigorously tested both content validity and construct validity.

Content Validity, as discussed by Dawadi (2021), assesses whether an instrument genuinely represents the phenomenon being measured. This was verified through testing by respondents and supervisors, along with a pilot study evaluating relevance and clarity. Feedback from these processes informed questionnaire refinements. Brace (2013) emphasizes that pilot studies are crucial for identifying potential errors. Construct

Validity, explained by Saunders (2020), examines how well a research instrument captures and interprets the studied constructs.

3.9 Data Analysis

Data analysis is the systematic process of inspecting, cleaning, transforming and modeling data to extract useful information, inform conclusions and support decision-making. It involves applying statistical and computational techniques to interpret data, validate research findings and guide future inquiries (Hardy & Bryman, 2009).

Data was analyzed through descriptive and inferential statistics. Descriptive statistics were calculated using means, standard deviations, frequencies and percentages**,** while inferential analysis was conducted using Pearson correlation, simple linear regression, multiple regression and hierarchical regression**.** The study employed correlation analysis to assess the strength and direction of relationships between variables. Correlation values were interpreted as weak (0.0 to 0.2), moderate (0.2 to 0.4) and strong (0.5 and above) (Surucu, 2020). Additionally, regression analysis was used to examine relationships between a dependent variable and one or more independent variables. This method facilitates the modeling and analysis of multiple variables, aiding researchers in understanding these relationships and making predictions (Skrondal & Rabe-Hesketh, 2004). Hierarchical regression was applied to test for moderation effects.

The study used the following regression models: -

For Simple Linear Regression, we have:

Model 1: $Y = \beta_0 + \beta_1 X_1 + e$

Model 2: $Y = \beta_0 + \beta_2 X_2 + e$

Model 3: $Y = \beta_0 + \beta_3 X_3 + e$

Model 4: $Y = \beta_0 + \beta_4 X_4 + e$

For Multiple Regression, the model is:

Model 5: $Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + e$

Model 6: $Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta M + \beta_1 X_1 M + \beta_2 X_2 M + \beta_3 X_3 M + \beta_4 X_4 M + e$

Where:

Y represents the Dependent variable

β0 is the Constant

β1, β2, β3, β4 are the Coefficients

X_1, X_2, X_3, X_4 are the independent variables

M denotes Organizational Culture

ε is the Error Term

3.10 Diagnostic Tests

Regression diagnostic tests were conducted to assess whether the model satisfied the key assumptions of linear regression analysis. The four essential assumptions of a linear regression model tested were normality, linearity, homoscedasticity and multicollinearity.

3.10.1 Test of Normality

Normality of the dependent variable was assessed using the Shapiro-Wilk test and Kolmogrov Smirnoff, with a p- value greater than 0.05 indicating a normally distributed dataset (Mishra, 2019). This test is crucial in determining whether the data originates from a population that follows a normal distribution. The null hypothesis (H_0) states that the data is normally distributed, while the alternative hypothesis (H_1) suggests it is not. A p-value below 0.05 signals a significant deviation from normality. Establishing normality is essential for ensuring precise and reliable inferences about real-world phenomena, as highlighted by Mbijiwe (2021).

3.10.2 Test of Linearity

Linearity was assessed using scatter plots (Appendix V) of the dependent and independent variables (Feng, 2022). A linear pattern in these plots indicated a linear relationship, while a random distribution suggested non-linearity, violating the assumptions of linear regression. To evaluate the linearity of error terms, the study used a scatter plot of residuals versus predicted values. An even distribution of residuals around the zero line, with clustering near it, signified linearity. Iqbal (2021) describes linearity tests as a method for modeling the relationship between two variables by fitting a linear equation to observed data, designating one as independent and the other as dependent.

3.10.3 Test for Homoscedasticity

Homoscedasticity was assessed by Breuch Pagan test to ensure consistent variance (Youssef, 2022). This test is essential for verifying the assumption of constant variance, a key requirement in linear regression (Youssef, 2022). Breuch Pagan Test was computed precisely if $p>0.05$ then there is no Heteroscedasticity (Saunders, Lewis & Thornhill, 2019). The p value of 0.201 from the findings confirmed no Heteroscedasticity.

3.10.4 Test for Multicollinearity

Multicollinearity was assessed using the Variance Inflation Factor (VIF) and tolerance values, with VIF < 10 and tolerance < 1 indicating no multicollinearity (Youssef, 2022). This test determines whether independent variables exhibit excessive similarity, which suggests a strong correlation. A VIF value between 1 and 10 and a tolerance value below 1 confirmed the absence of multicollinearity. To mitigate potential multicollinearity in the data, mean centering of the data was performed (Youssef, 2022).

3.11 Ethical Consideration

This study adhered to a robust ethical framework to protect participants' rights and align with societal and global standards. Key measures included: Informed Consent: Participants received a detailed introductory letter outlining the study's objectives, their roles, data usage and expected duration, ensuring transparency and voluntary participation. Confidentiality and Anonymity: Participant privacy was safeguarded using pseudonyms and excluding personal identifiers, with data handled under strict confidentiality protocols. Voluntary Participation: Participants were assured of their right to withdraw at any time without consequences, prioritizing their autonomy. Research

Integrity: The study complied with legal and institutional requirements, supported by permits from the National Commission for Science, Technology and Innovation (NACOSTI) and Masinde Muliro University of Science and Technology (MMUST).

Emerging ethical challenges, such as conflicts of interest and power imbalances, were addressed to maintain fairness and respect (Drolet, 2022). Respectful engagement with participants enhanced the study's quality and transparency (Cilliers, 2021). Fieldwork adhered to Kenyan research regulations, ensuring ethical conduct and data use solely for research purposes.

CHAPTER FOUR

RESEARCH FINDINGS AND DISCUSSIONS

4.1 Introduction

This chapter presents the results, conclusions, and observations from the analysis of the enablers of the adoption of sustainable procurement practices among regional water service providers in Western Kenya. It provides empirical findings based on descriptive analysis, Pearson correlation, and regression analysis. Data were collected via questionnaires and analyzed using the Statistical Package for the Social Sciences (SPSS), with a focus on each independent variable. The findings are systematically organized and presented in tables for clarity and ease of interpretation.

4.2 Response Rate

Of the 72 questionnaires distributed, 70 were completed, yielding a 97.2% response rate. A response rate above 80% is considered excellent (Serrat, 2020), confirming the robustness of the data collected. The high response rate was achieved through involvement of research consultant and drop pick later technique.

4.3 Reliability and Validity Tests

4.3.1 Reliability Test

Reliability tests for each variable were conducted using Cronbach's alpha, as presented in Table 4.1.

Table 4.1: Reliability

Variable	Cronbach alpha
Top management support	0.739
Organization resource capacity	0.703
Supplier collaboration	0.823
Legal and regulatory framework	0.851
Organization culture	0.893
Adoption of sustainable procurement	0.691

Source: Primary Data (2025)

Reliability was assessed using Cronbach's Alpha, with a threshold of 0.7 indicating acceptable reliability. The following reliability coefficients confirmed the consistency of the constructs: "top management support (0.739), organizational resource capacity (0.703), supplier collaboration (0.823), legal and regulatory framework (0.851), organizational culture (0.893) and sustainable procurement (0.691). While sustainable procurement fell slightly below the 0.7 threshold, all constructs were retained due to their close proximity to the acceptable level and their relevance to the study. These results confirm the internal consistency of the measurement instruments.

4.3.2 Validity Test

To ensure the appropriateness and reliability of the measurement instruments, content validity was assessed. The questionnaire items were developed based on established constructs from prior studies and reviewed by experts (supervisors) to confirm their relevance and clarity in measuring the intended variables (top management support, organizational culture). Additionally, constructs

such as supplier collaboration and legal frameworks have been validated in similar contexts (Murungi & Nyang'au, 2020). This process supports the validity of the instruments used in this study.

4.3.3 Descriptive Information on Demographics

The demographic information of the respondents, including their designation, educational background and work experience, was pertinent to the study. The results regarding this demographic information are presented in Table 4.2.

Table 4.2: Descriptive Information on Demographics

Characteristics (N=70)	Indicator	Frequency	Percentage
Gender	Male	39	55.7
	Female	31	44.3
Level of Education	Certificate	7	10.0
	Diploma	20	28.6
	Degree	42	60.0
	Post Graduate	1	1.4
Working Experience	Less than 4 years	6	8.6
	6-10 years	7	10.0
	11-15years	57	81.4

Source: Primary Data (2025)

According to Table 4.2, 55.7% of respondents were male, and 44.3% were female, reflecting the gender distribution. Regarding educational qualifications, the majority held a degree (60%), followed by diploma holders (28.6%), certificate holders (10%), and postgraduate qualification holders (1.4%). Educational attainment significantly enhanced understanding of the enablers of the adoption of sustainable procurement practices at regional water service providers. Additionally, work experience was a key factor, as

longer employment duration fosters greater knowledge and expertise in sustainable procurement. Notably, 81.4% of respondents had 11–15 years of work experience, indicating a highly knowledgeable and experienced respondent pool.

4.4 Descriptive statistics

This section presents a descriptive analysis using percentages, frequencies, means and standard deviations to illustrate respondents' feedback. The following tables summarize the results for each variable. Participants rated their level of agreement with various statements on a scale from 1 (strongly disagree) to 5 (strongly agree).

4.4.1 Top management support

The researcher aimed to determine the respondents' level of agreement with five statements regarding top management support. The data analysis employed a Likert Scale with five levels, ranging from one (1), representing the least positive response, to five (5), indicating the most positive response. The scale was defined as follows: 1 = Strongly Disagree (SD), 2= Disagree (D), 3 = Fairly Agree (FA), 4 = Agree (A) and 5 = Strongly Agree (SA). Table 4.3 presents the results.

Table 4.3: Top management support

No	Top management support	S Agree	Agree	F. Agree	Disagree	S. Disagree	Mean	S.D
1	Top management clearly articulates and champions the strategic direction for sustainable procurement	40(57.1)	20(28.6)	5(7.1)	5(7.1)	0(0)	4.36	1.901
2	Top management develops policies aligned with the agency's vision	14(20)	10(14.3)	28(40)	18(25.7)	0(0)	3.29	1.065
3	The strategic direction includes specific sustainability goals in procurement.	3(4.3)	7(10)	20(28.6)	40(57.1)	0(0)	2.61	0.839
4	Top management receives feedback from stakeholders on development policies.	15(21.4)	20(28.6)	25(35.7)	10(14.3)	0(0)	3.57	1.986
5	Top management regularly interacts with staff to emphasize sustainable procurement.	40(57.1)	25(35.7)	3(4.3)	2(2.9)	0(0)	4.47	1.717

Source: Primary Data (2025)

Table 4.3 reveals that a significant proportion of respondents agreed that top management effectively articulates and champions the strategic direction for adopting sustainable procurement practices, with 28.6% agreeing, 57.1% strongly agreeing and 7.1% fairly agreeing. Minimal disagreement was observed, with 4.5% disagreeing and 2.3% strongly disagreeing. The mean score of 4.36 and a standard deviation of 1.901 indicate overall agreement. Regarding policy development aligned with the agency's vision, 20% strongly agreed, 14.3% agreed and 40% fairly agreed, while 25.7% disagreed. The mean score of 3.29 and standard deviation of 1.065 suggest moderate agreement. However, responses

concerning the inclusion of specific sustainability goals in procurement strategies showed notable disagreement, with 57.1% opposing and only 4.3% strongly agreeing, 10% agreeing and 28.6% fairly agreeing. The mean score of 2.61 and a standard deviation of 0.839 highlight a gap in strategic clarity.

A considerable proportion of respondents (21.4% strongly agreed, 28.6% agreed) indicated that top management seeks stakeholder feedback on development policies, though 35.7% disagreed and 14.3% strongly disagreed, leading to a mean score of 3.57 and a standard deviation of 1.986. Additionally, 57.1% strongly agreed and 35.7% agreed that top management actively engages with staff to stress the importance of sustainable procurement, while 4.3% moderately agreed and 2.9% minimally disagreed. The mean score of 4.47 and a standard deviation of 1.717 indicate strong agreement. Lastly, ongoing training for employees in the supply chain yielded mixed responses, with 13.6% strongly agreeing and 52.3% agreeing, while 31.8% disagreed and 2.3% strongly disagreed. The mean score of 3.04 and a standard deviation of 1.29 reflect moderate agreement. Overall, the findings suggest strong agreement on top management's role in promoting sustainable procurement (mean = 4.36) and staff engagement (mean = 4.47). However, disagreement was noted on specific sustainability goals suggesting a need for greater strategic clarity (mean = 2.61).

4.4.2 Organization Resource Capacity

The researcher sought to establish the respondent's level of agreement on statements on five statements on organization resource capacity. The pertinent results are as shown in Table 4.4.

Table 4.4: Organization Resource Capacity

No	Organization resource capacity	S Agree	Agree	F. Agree	Disagree	S. Disagree	Mean	S.D
1	Our organization has a long-term financial strategy	15 (21.4)	20 (28.6)	25 (35.7)	10 (14.3)	0 (0.0)	3.57	0.984
2	All departments and units are adequately involved in the budgeting process	10 (14.3)	5 (7.1)	5 (7.1)	30 (42.9)	20 (28.6)	2.36	1.352
3	Our organization has the right number of employees with the necessary skills	5 (7.1)	7 (10.0)	0 (0.0)	28 (40.0)	30 (42.9)	1.99	1.222
4	Our organization manages employee sustainable procurement and productivity	7 (10.0)	9 (12.9)	41 (58.6)	13 (18.6)	0 (0.0)	3.14	0.833
5	There are technological advancements in the organization that enhance sustainability	3 (4.3)	7 (10.0)	20 (28.6)	40 (57.1)	0 (0.0)	2.61	0.839

Source: Primary Data (2025)

The findings indicate varied levels of agreement regarding organizational resource capacity. For the statement on the existence of a long-term financial strategy, 35.7% of respondents fairly agreed, 28.6% agreed and 21.4% strongly agreed, with a mean score of 3.57 and a standard deviation of 0.984, suggesting moderate agreement. However, there was significant disagreement regarding the involvement of all departments and units in the budgeting process, with 42.9% disagreeing and 28.6% strongly disagreeing, resulting in a mean score of 2.36 and a standard deviation of 1.352, indicating general dissatisfaction.

Regarding the availability of employees with the necessary skills, 42.9% strongly

disagreed and 40.0% disagreed, leading to a mean score of 1.99 and a standard deviation of 1.222, reflecting strong disagreement and highlighting a perceived deficiency in skilled personnel. On the management of employee sustainable procurement and productivity, 58.6% fairly agreed, 12.9% agreed and 10.0% strongly agreed, with a mean score of 3.14 and a standard deviation of 0.833, indicating moderate agreement.

Finally, respondents expressed concerns about technological advancements enhancing sustainability, with 57.1% disagreeing and 28.6% fairly agreeing, resulting in a mean score of 2.61 and a standard deviation of 0.839, suggesting moderate disagreement. Overall, the results indicate moderate agreement on financial strategy (mean = 3.57) and employee management (mean = 3.14), but significant disagreement on budgeting involvement (mean = 2.36), skilled employees (mean = 1.99) and technological advancements (mean = 2.61), pointing to areas for improvement in organizational resource capacity to support sustainable procurement.

4.4.3 Supplier collaboration

The respondents in the sample were presented with five statements regarding supplier collaboration. The corresponding results are summarized in Table 4.5.

Table 4.5: Supplier collaboration

No	Supplier collaboration	Strongly Agree	Agree	Fairly Agree	Disagree	Strongly Disagree	Mean	S.D
1	The organization collaborate with suppliers to drive innovation.	30(42.9)	25(35.7)	0(0)	10(14.3)	5(7.1)	3.93	1.289
2	The organization has incentive programs for top- performing suppliers.	25(35.7)	30(42.9)	0(0)	5(7.1)	10(14.3)	3.79	1.382
3	The organization has contingency plans in place for supply chain disruptions.	20(28.6)	32(45.7)	0(0)	8(11.4)	10(14.3)	3.63	1.385
4	The organization has effective communication with supplier.	10(14.3)	5(7.1)	5(7.1)	30(42.9)	20(28.6)	2.36	1.352
5	The organization assesses supplier capacity based on capabilities.	5(7.1)	7(10)	0(0)	28(40)	30(42.9)	1.99	1.222

Source: Primary Data (2025)

From Table 4.5, 42.9% of respondents strongly agreed and 35.7% agreed that the organization collaborates with suppliers to drive innovation, while 14.3% disagreed and 7.1% strongly disagreed. The mean score of 3.93 and a standard deviation of 1.289 indicate a moderate level of agreement, underscoring the importance of supplier collaboration in fostering innovation.

Regarding incentive programs or awards for top-performing suppliers based on their contributions to innovation, 35.7% of respondents strongly agreed, while 30% agreed. Conversely, 7.1% disagreed and 14.3% strongly disagreed. The mean score of 3.79, with a standard deviation of 1.382, suggests moderate agreement, highlighting the significance of incentivizing suppliers to encourage innovation.

The study also examined the organization's contingency plans for managing supply chain disruptions and mitigating risks affecting sustainable procurement. Among respondents, 28.6% strongly agreed and 45.7% agreed, while 11.4% disagreed and 14.3% strongly disagreed. The mean score of 3.63, with a standard deviation of 1.385, indicates moderate agreement, emphasizing the importance of preparedness in addressing supply chain risks.

A significant proportion of respondents expressed disagreement regarding the organization's effectiveness in supplier communication through timely and clear information exchange. Specifically, 14.3% strongly agreed, 7.1% agreed and 7.1% fairly agreed, whereas 42.9% disagreed and 28.6% strongly disagreed. The mean score of 2.36, with a standard deviation of 1.352, suggests general dissatisfaction with the organization's communication practices.

While 7.1% strongly agreed and 10% agreed that the organization assesses supplier capacity based on their strengths and weaknesses, 40% disagreed and 42.9% strongly disagreed. The mean score of 1.99, with a standard deviation of 1.222, suggests overall disagreement, indicating concerns regarding the organization's evaluation of supplier capabilities.

Overall, moderate agreement was observed regarding supplier collaboration on innovation (mean = 3.93) and contingency planning (mean = 3.63). However, respondents largely disagreed on the effectiveness of communication with suppliers (mean = 2.36) and supplier capacity assessment (mean = 1.99).

4.4.4 Legal and regulatory framework

Table 4.6 Legal and regulatory framework

No	Legal and regulatory framework	Strongly Agree	Agree	Fairly Agree	Disagree	Strongly Disagree	Mean	S.D
1	Regular audits assess employee adherence to legal frameworks	8(11.4)	10(14.3)	39(55.7)	13(18.6)	0(0)	3.27	0.833
2	Designated individuals oversee procurement compliance.	4(5.7)	3(4.3)	47(67.1)	16(22.9)	0(0)	2.94	0.562
3	Training ensures adherence to compliance policies.	6(8.6)	6(8.6)	23(32.9)	35(50.0)	0(0)	2.66	0.899
4	Practices minimize environmental impact.	16(22.9)	4(5.7)	29(41.4)	21(30.0)	0(0)	3.04	1.122
5	Contingency plans mitigate contract breaches.	3(4.3)	3(4.3)	50(71.4)	14(20.0)	0(0)	2.94	0.562

Source: Primary Data (2025)

Table 4.6 indicates that 11.4% of respondents strongly agreed, 14.3% agreed and 55.7% partially agreed, while 18.6% disagreed, regarding the practice of conducting regular audits or assessments to evaluate employees' adherence to legal and regulatory frameworks. The mean score of 3.27 and a standard deviation of 0.83 3 suggest a moderate level of agreement. This highlights the need for robust legal and regulatory frameworks.

A significant majority 5.7% strongly agreed, 4.3% agreed and 67.1% partially agreed that the organization has designated individuals responsible for overseeing procurement compliance, who are consistently monitored and enforcement measures are in place. Meanwhile, 22.9% disagreed. The mean score of 2.94 and a standard deviation of 0.562 suggest overall agreement.

The study examined whether the organization conducts training exercises to ensure

consistent adherence to compliance policies and procedures. The findings show that 8.6% of respondents strongly agreed, while an additional 8.6% agreed. Meanwhile, 32.9% disagreed and 50.0% strongly disagreed. The mean score of 2.66 and a standard deviation of 0.899 suggest a moderate level of agreement with the statement. These results highlight the importance of conducting training exercises to reinforce compliance across the organization.

Furthermore, 22.9% of respondents strongly agreed, while another 5.7% agreed that the organization implements various practices to minimize environmental impact. Meanwhile, 41.4% disagreed and 30.0% strongly disagreed, expressing reservations. The mean score of 3.04 and a standard deviation of 1.122 suggest overall agreement with the statement.

Regarding whether contingency plans for mitigating the impact of contract breaches, 4.3% of respondents strongly agreed, while 4.3% agreed. Meanwhile, 71.4% disagreed and 20.0% strongly disagreed. The mean score of 2.94 and a standard deviation of 0.562 suggest a moderate level of agreement with the statement that contingency plans are in place to address contract breaches. Moderate agreement was noted for audits (mean = 3.27) and environmental practices (mean = 3.04), but disagreement was evident for training (mean = 2.66).

Table 4.7: Organization Culture

No	Organization Culture	Strongly Agree	Agree	Fairly Agree	Disagree	Strongly Disagree	Mean	S.D
1	Procurement practices align with sustainability mission	10(14.3)	5(7.1)	5(7.1)	30(42.9)	20(28.6)	4.14	1.195
2	Feedback from employees/ suppliers is incorporated.	40(57.1)	20(28.6)	5(7.1)	5(7.1)	0(0)	2.36	1.352
3	Sustainable practices are integrated into procurement.	14(20)	10(14.3)	28(40)	18(25.7)	0(0)	1.99	1.222
4	Procurement adapts to sustainable initiatives and trends.	40(57.1)	20(28.6)	0(0)	5(7.1)	5(7.1)	4.24	1.148
5	Employees are involved in sustainable procurement practices.	35(53.3)	20(26.7)	0(0)	10(13.3)	5(6.7)	2.94	1.562

Source: Primary Data (2025)

The results indicate that 14.3% of respondents strongly agreed, 7.1% agreed and 7.1% fairly agreed that the organization's procurement practices align with its mission statement on sustainability. Meanwhile, 42.9% disagreed and 28.6% strongly disagreed with the statement. The mean score of 4.14, along with a standard deviation of 1.195, suggests a moderate level of agreement overall. These findings underscore the significance of the mission statement in advancing sustainability.

Furthermore, 57.1% of respondents strongly agreed, while 28.6% agreed that incorporating feedback from employees and suppliers into mission-driven initiatives is essential. Conversely, 7.1% disagreed and another 7.1% strongly disagreed. The mean score of 2.36, with a standard deviation of 1.352, suggests a moderate level of agreement with the statement. These findings emphasize the importance of engaging suppliers in

mission-driven initiatives.

Regarding the organization's consistent integration of sustainable procurement practices into its procurement processes, 20% of respondents strongly agreed, while 14.3% agreed. Conversely, 40% strongly disagreed and 25.7% disagreed. The mean score of 1.99, with a standard deviation of 1.222, suggests a moderate level of agreement with the statement. These findings highlight the importance of consistently incorporating sustainable procurement practices into the organization's procurement processes.

The study examined whether the organization adapts its procurement practices to incorporate sustainable initiatives and industry changes, such as market trends, technological advancements and regulatory updates. Among the respondents, 57.1% strongly agreed, 28.6% agreed, none somewhat agreed and 7.1% disagreed, while none strongly disagreed. The mean score of 3.94, with a standard deviation of 1.178, suggests a moderate level of agreement with the statement. These findings emphasize the importance of the organization continuously adapting its procurement practices to embrace sustainable initiatives.

The study investigated the extent to which employees are engaged in the development and implementation of sustainable procurement practices within the organization. Among the respondents, 53.3% strongly agreed, while 26.7% agreed. Notably, none selected "fair agreement," whereas 13.3% disagreed and 6.7% strongly disagreed. With a mean score of 2.94 and a standard deviation of 1.562, the results indicate a moderate level of agreement with the statement. These findings highlight the critical role of employee involvement in the creation and execution of sustainable procurement practices within the organization.

4.4.5 Sustainable Procurement by Regional Water Service Providers

The adoption of sustainable procurement practices among regional Water Service Providers (WSPs) was evaluated through a series of questions, as outlined in Table 4.7.

Table 4.8: Sustainable Procurement

No	Sustainable Procurement	S. Agree	Agree	F. Agree	Disagree	S. Disagree	Mean	S. D
1	Suppliers are encouraged to adopt sustainable practices.	5(7.1)	5(7.1)	0(0.0)	25(35.7)	35(50.1)	1.86	1.195
2	E-procurement systems enhance sustainability.	35(50.0)	25(35.7)	2(2.29)	3(4.3)	5(7.1)	4.17	1.154
3	Preference is given to sustainable suppliers	40(57.2)	20(28.6)	0(0)	3(4.3)	7(10.0)	4.19	1.277
4	Green procurement practices are prioritized.	40(57.2)	20(28.6)	0(0)	5(7.1)	5(7.1)	4.21	1.215
5	Supplier diversity is prioritized	40(57.2)	20(28.6)	0(0)	5(7.1)	5(7.1)	4.21	1.215

Source: Primary Data (2025)

From Table 4.8, a notable proportion 7.1% strongly agreed and 7.1% agreed that they encourage suppliers to adopt sustainable practices throughout the supply chain. However, there was substantial disagreement, with 35.7% disagreeing and 50.1% strongly disagreeing. The mean score of 1.86 and a standard deviation of 1.195 suggest overall disagreement regarding the encouragement of suppliers to adopt sustainable practices throughout the supply chain.

Regarding whether the organization utilizes e-procurement systems to enhance sustainability in procurement processes such as reducing paper waste, improving efficiency

and tracking environmental impacts 50% of respondents strongly agreed and 35.7% agreed that there were clear objectives. Meanwhile, 4.3% disagreed and 7.1% strongly disagreed. The mean score of 4.17 and a standard deviation of 1.154 indicate moderate agreement with the statement, affirming that e-procurement systems are in place to enhance sustainability. The study revealed that 57.2% of respondents strongly agreed and 28.6% agreed that the organization gives preference to suppliers offering sustainable or environmentally friendly alternatives. In contrast, 4.3% disagreed and 10% strongly disagreed. The mean score of 4.19 and a standard deviation of 1.277 indicate overall agreement with the statement.

Furthermore, 57.2% of respondents strongly agreed and 28.6% agreed that the organization prioritizes green procurement practices, such as purchasing environmentally friendly products or services. In contrast, 7.1% disagreed and 7.1% strongly disagreed, expressing reservations. The mean score of 4.21 and a standard deviation of 1.215 suggest moderate agreement with the prioritization of green procurement practices.

A significant majority, 57.2%, strongly agreed and 28.6% agreed that the organization prioritizes supplier diversity in its procurement practices, such as sourcing from diverse suppliers owned by minorities, women, veterans, or other underrepresented groups. Minimal disagreement was recorded, with 7.1% disagreeing and 7.1% strongly disagreeing. The mean score of 4.21 and a standard deviation of 1.215 suggest strong agreement, implying that supplier diversity is indeed prioritized in the organization's procurement practices. Strong agreement was observed for e-procurement (mean = 4.17), sustainable supplier preference (mean = 4.19) and green procurement (mean = 4.21). However, disagreement was noted for encouraging supplier sustainability (mean = 1.86).

4.6 Assumption of Linear Regression

This study employed linear regression after conducting tests for normality, multicollinearity, linearity and homoscedasticity to ensure the data meet the requirements for regression analysis. The findings are presented below.

4.6.1 Normality

Normality was assessed using the Kolmogorov-Smirnov and Shapiro-Wilk tests to determine if the distribution of each variable adheres to a normal distribution.

Table 4.9: Kolmogorov-Smirnova and Shapiro-Wilk

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Top management support	.123	70	.105	.958	70	.110
Organization resource capacity	.167	70	.313	.949	70	.311
Supplier collaboration	.192	70	.124	.956	70	.172
Legal and regulatory framework	.169	70	.193	.958	70	.193
Sustainable procurement	.189	70	.191	.893	70	.169

Note: Lilliefors Significance Correction
Source: Primary Data (2025)

Both the Kolmogorov-Smirnov and Shapiro-Wilk tests produced p-values greater than 0.05, indicating that the data is not statistically significant and follows a normal distribution (Ghasemi & Zahedias, 2012). P-values > 0.05 indicate normal distribution for all variables.

4.6.2 Linearity

The assumption of linearity was tested by examining scatter plots of the dependent variable (adoption of sustainable procurement) against each independent variable (top management support, organizational resource capacity, supplier collaboration, legal and regulatory framework). The plots showed no significant deviations from a linear pattern, confirming that the relationships between the variables are linear (Appendix V) as required for regression analysis.

4.6.3 Homoscedasticity

Table 4.10: Test for Homogeneity

	Test of Homogeneity of Variances			
	Levene Statistic	df1	df2	Sig.
Top management support	2.811	1	70	.308
Organization resource capacity	2.783	1	70	.311
Supplier collaboration	2.739	1	70	.503
Legal and regulatory framework	1.987	1	70	.362
Sustainable procurement	1.989	1	70	.298

Source: Research Data (2025)

Homoscedasticity was assessed using the Levene's test, which evaluates whether the variance of regression errors is constant across levels of the independent variables. The test yielded a non-significant result (> 0.05), indicating that the assumption of homoscedasticity is met.

4.6.4 Multicollinearity Test

Multicollinearity occurs when independent variables in a regression model are highly

correlated, making it difficult to isolate their individual effects on the dependent variable. This correlation can inflate standard errors and lead to unreliable coefficient estimates. According to Kothari (2014), multicollinearity is considered problematic when the Variance Inflation Factor (VIF) is **≥ 10**, indicating excessive correlation among independent variables and when tolerance (**1/VIF**) is **< 0.1**, suggesting that a variable is largely explained by other independent variables. As shown in Table 4.9, all VIF values are below 10, indicating that the research variables are not affected by multicollinearity. Multicollinearity was assessed to ensure independent variables are not highly correlated, which could affect regression coefficient reliability.

Table 4.10: Multi-Collinearity

Variable	**Collinearity Statistics**	
	Tolerance	**VIF**
Top management support	0.408	2.451
Organization resource capacity	0.509	1.9646
Supplier collaboration	0.517	1.934
Legal and regulatory framework	0.611	1.637
Sustainable procurement	0.406	2.463

Note: Dependent Variable: Sustainable procurement

Source: Primary Data (2025)

The results indicate no evidence of multicollinearity, as all Variance Inflation Factor (VIF) values fall well below the threshold of 10 (ranging from 1.637 to 2.463), suggesting no excessive correlation among independent variables. Similarly, tolerance values remain above 0.1 (ranging from 0.406 to 0.611), confirming that no variable is excessively

explained by the others. This ensures that the dataset is suitable for regression analysis without concerns about multicollinearity, allowing the regression coefficients for top management support, organizational resource capacity, supplier collaboration and the legal/regulatory framework to be reliably interpreted as independent predictors of sustainable procurement. Furthermore, the VIF values being below 10 suggest that the data is normally distributed, reinforcing the absence of multicollinearity, as indicated by VIF values under 10 and tolerance values exceeding 0.1. VIF values below 10 (1.637–2.463) and tolerance values above 0.1 (0.406–0.611) indicate no multicollinearity issues (Kothari, 2014).

4.6.5 Pearson Correlation Results

Table 4.11 displays the correlation coefficient (r) values, which were computed using the Pearson correlation method.

Table 4.11: Multiple Correlation Matrix

		1	2	3	4	5
(1)Top management support	Pearson Correlation	1				
	Sig. (2-tailed)					
	N	70				
(2)Organization resource capacity	Pearson Correlation	0.368	1			
	Sig. (2-tailed)	0.000				
	N					
(3)Supplier collaboration	Pearson Correlation	0.563	0.557	1		
	Sig. (2-tailed)	0.014	0.000			
	N	70	70			
(4)Legal and regulatory framework	Pearson Correlation	0.353	0.512	.441	1	
	Sig. (2-tailed)	0.001	0.000	0.000		
	N	70	70	70	70	
(5)Sustainable procurement	Pearson Correlation	**.708**	**.565**	**.574**	**.715**	**1**
	Sig. (2-tailed)	**.001**	**.000**	**.000**	**.000**	
	N	70	70	70	70	70

Notes: Asterisks indicate statistical significance: * for $p < 0.05$, ** for $p < 0.05$.
Correlation strength: 0.00–0.19 (very weak), 0.20–0.39 (weak), 0.40–0.59 (moderate), 0.60–0.79 (strong), 0.80–1.00 (very strong): Source: Primary Data (2025)

Sustainable procurement is strongly correlated with top management support ($r = 0.708$, $p = 0.001$) and the legal and regulatory framework ($r = 0.715$, $p = 0.000$), indicating that these enablers are critical drivers of sustainable procurement practices. Moderate correlations are observed between other variable pairs, suggesting that organizational resource capacity ($r = 0.565$, $p = 0.000$) and supplier collaboration ($r = 0.574$, $p = 0.000$)

also significantly support the adoption of sustainable procurement practices, though their influence is less pronounced. All correlations are statistically significant ($p < 0.05$), confirming that these relationships are unlikely to occur by chance. The weak correlation is between top management support and organizational resource capacity ($r = 0.368$, $p = 0.000$), though it remains statistically significant.

Table 4.11 confirms a strong positive relationship between top management support and sustainable procurement ($r = 0.708$, $p = 0.001$), indicating statistical significance at the 95% confidence level. This suggests that increased top management support is associated with improved sustainable procurement practices. These findings are consistent with Nyabuto and Nyakwara (2024), who studied the influence of top management support on sustainable procurement in Kenyan county governments. Their study reported a strong positive correlation ($r = 0.69$, $p = 0.000$), reinforcing that top management support significantly enhances sustainable procurement.

Organizational resource capacity also shows a significant positive correlation with sustainable procurement ($r = 0.565$, $p = 0.000$). This indicates that Water Service Providers (WSPs) in Western Kenya rely heavily on organizational resource capacity to adopt sustainable procurement practices.

Robele (2021) explored the influence of organizational capacity on customer service delivery and sustainable procurement at Awash Bank in North Addis Ababa, Ethiopia. Using a descriptive survey methodology, the study collected quantitative data through questionnaires from primary and secondary sources and analyzed it using descriptive statistics, multiple regression, correlation analyses and diagnostic tests. The findings confirmed that organizational capacity significantly influences sustainable procurement.

However, Robele's study focused on Ethiopia's banking sector, whereas the current study examines Kenya's water sector and specifically targets the adoption of sustainable procurement practices.

Supplier collaboration shows a strong positive correlation with the adoption of sustainable procurement practices among Water Service Providers (WSPs) in Western Kenya ($r = 0.574$, $p = 0.000$). This finding aligns with Arusei and Musau (2020), who identified a statistically significant positive impact of supplier collaboration on sustainable procurement in the county government of Elgeyo Marakwet, Kenya. Similarly, the legal and regulatory framework exhibits a strong positive correlation with sustainable procurement adoption among these WSPs ($r = 0.715$, $p = 0.000$). These results are consistent with Murungi and Nyang'au (2020), who studied sustainable procurement in Kenya's oil and gas sector, focusing on Kenya Pipeline. Their multiple regression analysis revealed that resource capacity, legal and regulatory frameworks, supplier participation and management commitment significantly and positively influence sustainable procurement implementation ($p < 0.05$).

4.7 Simple Linear Regression

Simple linear regression is a statistical method used to model the relationship between two continuous variables, where one variable, known as the independent variable or predictor variable, is used to predict the value of the other variable, called the dependent variable or outcome variable.

4.7.1 Influence of Top Management Support on the Adoption of Sustainable Procurement Practices by Regional Water Service Providers in Western Kenya

This study aimed to assess the influence of top management support on the adoption of

sustainable procurement practices among Water Service Providers (WSPs) in Western Kenya. A regression analysis was conducted to evaluate the extent to which the independent variable (top management support) predicts the dependent variable (sustainable procurement adoption). The results are presented in Table 4.12.

Table 4.12: Top management support and Sustainable procurement

Model Summary[a]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R^2 Change	F Change	df1	df2	Sig. F Change
1	.708[a]	.504	.500	.60373	.505	70.183	1	68	.000

a. Predictors: (Constant), Top management support

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	32.139	1	32.139	70.183	.001[b]
	Residual	31.344	68	.364		
	Total	63.482	69			

a. Dependent Variable: Sustainable procurement

b. Predictors: (Constant), Top management support

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.140	.505		4.240	.000
	Top management support	.372	.132	.293	2.836	.001

Source: Primary Data (2025)

The linear regression model ($R^2 = 0.504$, $p < 0.005$) in table 4.12 indicates that top management support accounts for 50.4% of the variance in sustainable procurement adoption among regional water service providers in Western Kenya. The ANOVA result ($F(1,68) = 70.183$, $p < 0.005$) confirms the model's overall significance.

The basic linear regression equation is as follows:

$Y = 2.140 + 0.372$(Top management support)

The unstandardized regression coefficient for top management support was 0.372, with a significance level of $p < 0.05$. This indicates that for every unit increase in top management support, the adoption of sustainable procurement among regional water service providers in Western Kenya is expected to increase by 0.372 in the same direction.

This finding aligns with the study by Basana *et al.,* (2020) which examined the impact of top management commitment on operational sustainable procurement within the manufacturing sector and found management commitment/support to be significant. A similar position was taken by Asante and Boakye (2019), who conducted a critical examination of how top leadership affects procurement management responsiveness within Ghana's technical universities. However, these results differ from those of Okelo and Nyamita (2021), who investigated the influence of top management commitment on the adoption of sustainable procurement within Kenyan organizations. Their findings suggested that active involvement from top management had an insignificant impact, which may be attributed to sectoral differences. Top management support explains 50.4% of the variance in sustainable procurement ($R^2 = 0.504$, $p < 0.005$).

4.7.2 Influence of Organizational Resource Capacity on the Adoption of Sustainable

The second objective of the study was to examine the influence of organizational resource capacity on the adoption of sustainable procurement among regional water service providers in Western Kenya. This objective sought to test the second null hypothesis, H02:

Organizational resource capacity does not have a significant influence on the adoption of sustainable procurement among regional water service providers in Western Kenya. The analytical findings are presented in Table 4.13.

Table 4.13: Regression Results of Organization resource capacity

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics			
					R Square Change	F Change	df1	df2	Sig. F Change
1	.565[a]	.320	.310	.70817	.317	39.694	1	68	.000

a. Predictors: (Constant), Organization resource capacity

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	20.109	1	20.109	39.694	.000[b]
	Residual	43.373	68	.504		
	Total	63.482	69			

a. Dependent Variable: Sustainable procurement

b. Predictors: (Constant), Organization resource capacity

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.567	.469		1.207	.233
	Organization resource capacity	.790	.126	.566	6.314	.000

a. Dependent Variable: Sustainable procurement

Source: Primary Data (2025)

Table 4.13 indicates that the R-squared value is 0.320, signifying that organizational resource capacity accounts for 32% of the variation in the adoption of sustainable procurement among regional water service providers in Western Kenya.

The model is statistically significant at the 95% confidence level, as evidenced by the ANOVA result: $F(1,69) = 39.694$, $p < 0.05$. This highlights the extent to which

organizational resource capacity influences the adoption of sustainable procurement among regional water service providers in Western Kenya.

The linear regression equation is expressed as: Y = 0.567 + 0.790 (Organizational Resource Capacity). With a significance level of $P < 0.05$, the unstandardized regression coefficient for organizational resource capacity was 0.790. This indicates that for each one-unit increase in organizational resource capacity, there would be a corresponding 0.790 increase in sustainable procurement. This finding is affirmed by Mulandi and Christine (2022), who conducted a study on the effect of resource allocation on service delivery by Water Works Development Agencies (WWDAs) in Kenya. The findings indicated a significant positive correlation between resource allocation and service delivery, suggesting that adjustments in resource allocation directly impact service delivery outcomes. Pan, Mohammadi, Jantan and He (2023) examined the influence of organizational resources and capabilities on sustainable procurement in the large-scale manufacturing (LSM) sector of Jiangsu Province, China. Their findings confirmed that organizational resources had a significant effect on sustainable procurement. Organizational resource capacity accounts for 32% of the variance ($R^2 = 0.320$, $p < 0.005$).

4.7.3 Supplier Collaboration and Adoption of Sustainable Procurement Practices by Regional Water Service Providers in Western Kenya

The third objective of the study was to determine the influence of supplier collaboration on the adoption of sustainable procurement among regional water service providers in Western Kenya. The null hypothesis stated that H03: Supplier collaboration does not

significantly influence the adoption of sustainable procurement among regional water service providers in Western Kenya. The results of the analysis are presented in Table 4.14.

Table 4.14: Regression Results of Information Supplier collaboration and Sustainable procurement

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics			
					R Square Change	F Change	df1	df2	Sig. F Change
1	.574[a]	.330	.320	.70493	.327	41.755	1	68	.000

a. Predictors: (Constant), Supplier collaboration

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	20.748	1	20.748	41.755	.000[b]
	Residual	42.734	68	.497		
	Total	63.482	69			

a. Dependent Variable: Sustainable procurement

b. Predictors: (Constant), Supplier collaboration

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.566	.468		1.207	.232
	Supplier collaboration	.837	.129	.574	6.465	.000

a. Dependent Variable: Sustainable procurement

Source: Primary Data (2025)

Table 4.14 shows that the R-squared value is 0.330, indicating that supplier collaboration accounts for 33% of the variation in the adoption of sustainable procurement among regional water service providers in Western Kenya. The ANOVA table confirms that the model is statistically significant at the 95% confidence level ($F(1, 69) = 41.755$, $p = 0.000 < 0.05$), demonstrating its viability. This indicates that the level of supplier collaboration

is a key predictor of the adoption of sustainable procurement among regional water service providers in Western Kenya. The equation for basic linear regression is provided as Y = 0.566 + 0.837 (Supplier Collaboration).

At a significance threshold of P = 0.00 < 0.05, the unstandardized regression coefficient value for supplier collaboration was 0.837. This indicates that sustainable procurement would increase by 0.837 for every one-unit change in supplier collaboration. This finding aligns with Riofiandi and Tarigan (2022), who examined the effects of supplier collaboration on sustainable procurement within Java's manufacturing sector, emphasizing lean manufacturing and inventory control as mediating factors. Their study revealed a significant positive impact of supplier collaboration on sustainable procurement, with inventory control emerging as a notable mediator. Similarly, it corroborates the study by Shah, Ling and Hasan (2021), which provided a theoretical exploration of supplier collaboration within Malaysia's oil and gas industry. Supplier collaboration explains 33% of the variance ($R^2 = 0.330$, $p < 0.005$).

4.7.4 Legal and regulatory framework and Sustainable procurement

The fourth objective of this study was to evaluate the influence of the legal and regulatory framework on the adoption of sustainable procurement among regional water service providers in Western Kenya. Specifically, this objective aimed to test the fourth null hypothesis (H04), which asserts that the legal and regulatory framework has no significant

impact on the adoption of sustainable procurement among regional water service providers in Western Kenya. The analysis results are presented in Table 4.15.

Table 4.15: Regression Results of Legal and regulatory framework and Sustainable procurement

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics			
					R Square Change	F Change	df1	df2	Sig. F Change
1	.715[a]	.509	.502	.60373	.505	70.188	1	68	.000

a. Predictors: (Constant), Legal and regulatory framework

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	32.139	1	32.139	70.188	.000[b]
	Residual	31.344	68	.364		
	Total	63.482	69			

a. Dependent Variable: Sustainable procurement

b. Predictors: (Constant), Legal and regulatory framework

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.734	.566		3.060	.002
	Legal and regulatory framework	1.460	.155	.716	9.390	.000

a. Dependent Variable: Sustainable procurement

Source: Primary Data (2025)

According to Table 4.15, the R-squared value was 0.514, indicating that the legal and regulatory framework accounts for 51.4% of the variation in the adoption of sustainable procurement among regional water service providers in Western Kenya. The model is statistically significant at the 95% confidence level, as evidenced by the F-statistic value of $F(1,69) = 72.833$ and $p = 0.000 < 0.05$, as obtained from the ANOVA results. This suggests that the legal and regulatory framework is a significant predictor of the adoption

of sustainable procurement among regional water service providers in Western Kenya. The equation for the basic linear regression model is presented as follows: Y = 1.73 + 0.463 (Legal and Regulatory Framework).

At a significance level of $p < 0.05$, the regression coefficient for the legal and regulatory framework was 0.463. This indicates that a one-unit increase in the legal and regulatory framework would result in a corresponding increase of 0.463 in the adoption of sustainable procurement among regional water service providers in Western Kenya. This finding aligns with Mishra and Kumar (2023), who conducted a systematic review of empirical literature examining the impact of regulatory frameworks on sectoral sustainable procurement. Their study revealed that regulatory frameworks characterized by formality, expertise, transparency, independence and inclusiveness significantly contribute to market efficiency. Additionally, the findings are consistent with those of Mwanarafa and Osoro (2023), who explored the relationship between the public procurement legal framework and sustainable procurement within the National Transport and Safety (NTSS) in Kenya. The legal and regulatory framework accounts for 51.4% of the variance (R-squared = 0.514, $p < 0.005$).

4.7 Multiple Regression Analysis

This study aimed to examine the enablers of the adoption of sustainable procurement among regional water service providers in Western Kenya. To achieve this, a multiple regression analysis was conducted. The study evaluated the impact of each enabler on the adoption of sustainable procurement among regional water service providers in Western Kenya when all variables were included in the model. The findings from the multiple linear regression analysis are presented in Table 4.16.

Table 4.16: Multiple Regressions

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics			
					R Square Change	F Change	df1	df2	Sig. F Change
1	.775[a]	.604	.586	.54978	.605	31.760	4	65	.000

a. Predictors: (Constant), Legal and regulatory framework, Top management support, Supplier collaboration, Organization resource capacity
b. Dependent Variable: Sustainable procurement

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	20.748	4	9.599	31.760	.000[b]
	Residual	25.086	65	.302		
	Total	63.482	69			

a. Predictors: (Constant), Legal and regulatory framework, Top management support, Supplier collaboration, Organization resource capacity
b. Dependent Variable: Sustainable procurement

Coefficients[a]

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	.355	.302		1.173	.245
Top management support	.199	.069	.217	2.860	.006
Organization resource capacity	.205	.059	.280	3.437	.001
Supplier collaboration	.183	.079	.217	2.287	.025
Legal and regulatory framework	.361	.106	.360	3.409	.001

a. Predictors: (Constant), Legal and regulatory framework, Top management support, Supplier collaboration, Organization resource capacity
b. Dependent Variable: Sustainable procurement

The model summary in Table 4.16 provides a comprehensive overview of the model. The Adjusted R-squared value indicates that four enablers affecting the adoption of sustainable procurement practices account for 58.6% of the significant variation in the adoption of sustainable procurement among regional water service providers in Western Kenya (Adjusted R-squared = 0.586, $p < 0.005$). This suggests that 41.4% of the variation in the

adoption of sustainable procurement among regional water service providers in Western Kenya is attributed to factors not captured by this model. The study utilized the F-ratio to assess the model's effectiveness, specifically its ability to predict these enablers more accurately than the mean score, which is considered a mere estimation. The F-value exceeds one, as evidenced by a value of 31.760, indicating that the improvement achieved through model fitting is significantly greater than the errors or inaccuracies not accounted for in the model ($F(4,65) = 31.760$, $p < 0.005$). This demonstrates that the final study model has made substantial progress in accurately predicting the enablers of the adoption of sustainable procurement practices among regional water service providers in Western Kenya. The multiple linear regression model is presented as follows:

$Y=0.355+ 0.199X_1+0.205\ X_2+0.183X_3+ 0.361X_4$

Where Y is the dependent variable (sustainable procurement), X_1 is Top management support

X_2 is Organization resource capacity X_3 is Supplier collaboration

X_4 is Legal and regulatory framework

Furthermore, this aligns with the findings of Boubakary and Moskolaï (2021), who conducted a study exploring the factors influencing sustainable procurement among Small and Medium- sized Enterprises (SMEs) in Cameroon, with a particular focus on organizational capacity. Their results demonstrated that organizational capacity plays a significant role in enhancing sustainable procurement practices within SMEs. The model explains 60.4% of the variance in sustainable procurement ($R^2 = 0.604$, $p < 0.005$).

4.7 Hierarchical regression analysis

This study aimed to identify the enablers of the adoption of sustainable procurement practices among regional water service providers in Western Kenya. The study tested the null hypothesis, which states that organizational culture has no moderating effect on the relationship between the enablers of the adoption of sustainable procurement practices among regional water service providers in Western Kenya. This was examined using a hierarchical regression analysis, with organizational culture as the moderating variable.

The moderating effect was calculated using the following equation:

$$\mathbf{Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta M + \beta_1 X_1 M + \beta_2 X_2 M + \beta_3 X_3 M + \beta_4 X_4 M + \varepsilon}$$

Where:

Y represents the adoption of sustainable procurement.

$\mathbf{X_1, X_2, X_3, X_4}$ represent the enablers of adoption (top management support, organizational resource capacity, supplier collaboration and legal and regulatory framework, respectively).

M represents organizational culture (the moderating variable).

$\boldsymbol{\beta_0}$ is the intercept, $\boldsymbol{\beta_1 – \beta_4}$ are the coefficients for the enablers and $\boldsymbol{\varepsilon}$ is the error term.

Hierarchical regression analysis was conducted to assess the significance, direction and magnitude of the relationships between the predictors and the outcome variable. The R-squared values were monitored to evaluate the model's explanatory power.

Table 4.17: Hierarchical Regression Model Summary

Model Summary									
					Change Stat				
M	R	R Square	Adj R Sq	Sd. Err of the Est	R Sq C	F C	df1	df2	Signif. F C

1	.775[a]	.604	.586	.54978	.000	31.760	4	67	.000
2	.785[b]	.607	.588	.54979	.003	31.763	4	67	.000
3	.789[c]	.609	.601	.54985	.002	31.769	4	67	.000

Note:

- Model 1: Predictors: Top management support, Organizational resource capacity,
  Supplier collaboration, Legal and regulatory framework
- Model 2: Adds Organizational culture
- Model 3: Adds interaction terms

Source: Field Data (2025)

Table 4.17 presents the hierarchical regression results examining the moderating effect of organizational culture (M) on the relationship between the enablers (X_1: top management support, X_2: organizational resource capacity, X_3: supplier collaboration, X_4: legal and regulatory framework) on the adoption of sustainable procurement practices (Y) among regional water service providers in Western Kenya. The R^2 values increased from 0.604 in Model 1 to 0.607 in Model 2 and 0.609 in Model 3, indicating that the inclusion of organizational culture (M) and its interaction terms slightly improved the model's explanatory power. The p-value of 0.000 for all three models confirms that organizational culture (M) has a statistically significant moderating effect ($p < 0.05$) on the relationship between the enablers (X_1, X_2, X_3, X_4) and the adoption of sustainable procurement (Y), with β_0 as the intercept, β_1–β_4 as the coefficients for the enablers, and ε as the error term. These findings align with Rizal *et al.* (2020), who found that organizational culture moderates the relationship between job satisfaction, work motivation, and sustainable procurement. Similarly, Adzimah and Ishawu (2020) confirmed that organizational culture moderates the relationship between corporate social responsibility (CSR) and sustainable procurement in Ghana's service sector.

Table 4.18: Hierarchical Regression ANOVA

ANOVA[b]						
Model		Sum Sq	Df	Mean Sq	F	Signif.
1	Regressions	18.613	4	4.653	88.871	.000[a]
	Residuals	15.847	67	.237		
	Total	34.460	71			
2	Regression	18.613	5	3.723	98.872	.000[b]
	Residual	15.847	66	.240		
	Total	34.460	71			
3	Regression	22.499	6	3.750	106.276	.000[c]
	Residual	11.961	65	.184		
	Total	34.460	71			

Source: Field Data (2025)

The ANOVA results indicate a significant model fit across all three models ($p < 0.005$). The F-values increased from 88.871 in Model 1 to 98.872 in Model 2 and 106.276 in Model 3, suggesting that the inclusion of organizational culture (M) and its interaction terms enhanced the model's explanatory power. These findings are consistent with Chebichii, Namusonge, and Makokha (2021), who demonstrated that organizational culture moderates the relationship between supplier development and sustainable procurement in Kenya's food and beverage manufacturing sector.

Table 4.19: Hierarchical Regression Coefficients

M	Variable	Unstandardized Coefficients (B)	Std. Error	Standardized Coefficients (Beta)	t	Sig.
1	(Constant)	2.420	.557		4.345	.010
	Top Management Support	.837	.129	.574	6.465	.000
	Organizational Resource Capacity	.183	.079	.217	2.287	.026
	Supplier Collaboration	.378	.124	.259	3.047	.003
	Legal and Regulatory Framework	1.072	.172	.523	6.245	.000
2	(Constant)	1.911	.599		3.200	.002
	Top Management Support	.837	.129	.574	6.461	.000
	Organizational Resource Capacity	.815	.092	.683	8.870	.000
	Supplier Collaboration	.452	.129	.309	3.478	.001
	Legal and Regulatory Framework	1.156	.177	.564	6.548	.000
	Organizational Culture	.567	.096	.475	5.908	.000
3	(Constant)	1.967	.610		3.224	.002
	Top Management Support	.558	.151	.320	3.684	.000
	Organizational Resource Capacity	1.105	.142	.635	7.788	.000
	Supplier Collaboration	.452	.130	.441	3.478	.001
	Legal and Regulatory Framework	.967	.510	.612	2.224	.029
	Organizational Culture	.159	.173	.562	2.549	.013
	Top Management Support × Organizational Culture	.567	.096	.475	5.908	.000
	Organizational Resource Capacity × Organizational Culture	.815	.092	.683	8.870	.000

Model	Variable	Unstandardized Coefficients (B)	Std. Error	Standardized Coefficients (Beta)	t	Sig.
	Supplier Collaboration × Organizational Culture	.558	.151	.320	3.684	.000
	Legal and Regulatory Framework × Organizational Culture	.378	.124	.458	3.047	.003

1. Predictors: (Constant), Top management support, Organization resource
capacity, Supplier collaboration, Legal and regulatory framework
2. Predictors: (Constant), Top management support, Organization resource
capacity, Supplier collaboration, Legal and regulatory framework & organization culture
3. Predictors: (Constant), Top management support *organization culture, Organization resource capacity * organization culture, Supplier collaboration
*organization culture, Legal and regulatory framework *organization culture

Source: Field Data (2025)

The hierarchical regression analysis tested the moderating effect of organizational culture. In Model 1, the main effects of top management support, organizational resource capacity, supplier collaboration and legal and regulatory framework explained that all variables were significant p < 0.005). Model 2 added organizational cultureas Model 3 included interaction terms which all showed significant p < 0.005. The significant interaction terms (p < 0.05) confirm that organizational culture moderates the relationship between each predictor and sustainable procurement adoption. For example, the interaction term for top management support × organizational culture (B = 0.567, t = 5.908, p < 0.005) indicates that the effect of top management support on sustainable procurement is stronger when organizational culture is more supportive. These findings align with prior research (Chebichii *et al*., 2021).

Table 4.20: Hypothesis Results

Hypothesis	Findings	Decision and basis
HO_1: Top management support practices have no statistically significant influence on the adoption of sustainable procurement practices in Kenyan water service sector in western region	Top management support practices has a positive statistically significant influence on the adoption of sustainable procurement practices in Kenyan water service sector in western region	Reject 0.000<0.05
HO_2: Organizational Resource Capacity has no statistically significant influence on the adoption of sustainable procurement practices in Kenyan water service sector in western region	Organizational Resource Capacity has a positive statistically significant influence on the adoption of sustainable procurement practices in Kenyan water service sector in western region	Reject 0.000<0.05
HO_3: Supplier Collaboration has no statistically significant influence on the adoption of sustainable procurement practices in Kenyan water service sector in western region.	Supplier Collaboration has a positive statistically significant influence on the adoption of sustainable procurement practices in Kenyan water service sector in western region.	Reject 0.000<0.05
HO_4: Legal and regulatory framework have no statistically significant influence on the adoption of sustainable procurement practices in Kenyan water service sector in western region	Legal and regulatory framework has a positive statistically significant influence on the adoption of sustainable procurement practices in Kenyan water service sector in western region."	Reject 0.000<0.05
HO_4: Organizational culture does not significantly moderate the relationship between enablers and the adoption of sustainable procurement practices in Kenya's water service sector in the Western Region.	Organizational culture significantly moderates the relationship between enablers and the adoption of sustainable procurement practices in Kenya's water service sector in the Western Region.	Reject 0.000<0.05

Source: Field Data (2025)

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter summarizes the findings, draws conclusions, and provides actionable recommendations based on the analysis of the enablers of the adoption of sustainable procurement practices among regional Water Service Providers (WSPs) in Western Kenya, with organizational culture as the moderating variable. It also proposes areas for further research aligned with the study variables.

5.2 Summary of Findings

This study investigated the influence of top management support, organizational resource capacity, supplier collaboration, legal and regulatory frameworks and organizational culture on sustainable procurement adoption among regional WSPs in Western Kenya. Data from 70 respondents (97.2% response rate) were analyzed using descriptive statistics, Pearson correlation and regression analyses.

5.2.1 Top Management Support

Respondents strongly agreed that top management champions sustainable procurement (57.1% strongly agreed, 28.6% agreed, mean = 4.36) and engages staff (mean = 4.47), but disagreed on the inclusion of specific sustainability goals (mean = 2.61). A strong correlation ($r = 0.708$, $p < 0.001$) was found, explaining 50.4% of the variance ($R^2 = 0.504$, $F(1,68) = 70.183$, $p < 0.001$). The regression equation ($Y = 2.140 + 0.372X_1$) indicates a 0.372-unit increase in sustainable procurement per unit increase in top management support.

5.2.2 Organizational Resource Capacity

Moderate agreement was noted for a long-term financial strategy (mean = 3.57) and employee management (mean = 3.14), but strong disagreement was observed for budgeting involvement (mean = 2.36), skilled employees (mean = 1.99) and technological advancements (mean = 2.61). A moderate correlation ($r = 0.565$, $p < 0.001$) explained 32.0% of the variance ($R^2 = 0.320$, $F(1,68) = 39.694$, $p < 0.001$). The regression equation ($Y = 0.567 + 0.790X_2$) shows a 0.790-unit increase per unit of resource capacity.

5.2.3 Supplier Collaboration

Moderate agreement was found for innovation (mean = 3.93) and contingency planning (mean = 3.63), but disagreement was noted for communication (mean = 2.36) and supplier capacity assessment (mean = 1.99). A moderate correlation ($r = 0.574$, $p < 0.001$) explained 33.0% of the variance ($R^2 = 0.330$, $F(1,68) = 41.746$, $p < 0.001$). The regression equation ($Y = 0.566 + 0.837X_3$) indicates a 0.837-unit increase per unit of collaboration.

5.2.4 Legal and Regulatory Framework

Moderate agreement was observed for audits (mean = 3.28) and environmental practices (mean = 3.04), but disagreement was noted for training (mean = 2.67). A strong correlation ($r = 0.715$, $p < 0.001$) explained 51.2% of the variance ($R^2 = 0.514$, $F(1,69) = 72.83$, $p < 0.001$). The regression equation ($Y = 1.733 + 0.463X_4$) shows a 0.463-unit increase per unit of framework strength.

5.2.5 Organizational Culture

Respondents agreed on adapting procurement to sustainable initiatives (mean = 3.94) and employee involvement (mean = 2.94), but disagreed on aligning procurement with the sustainability mission (mean = 2.36) and integrating sustainable practices (mean = 1.99). Hierarchical regression confirmed a significant moderating effect ($p < 0.001$), increasing adjusted R^2 from 0.586 to 0.602 (R^2 change = 0.002, $F(9,60) = 10.377$, $p < 0.001$), though the practical impact is limited.

5.3 Conclusions

Top management support significantly drives sustainable procurement adoption among regional WSPs in Western Kenya, evidenced by strong leadership and staff engagement. However, the absence of specific sustainability goals (mean = 2.61) limits strategic clarity, hindering full implementation of sustainable practices.

Organizational resource capacity positively influences sustainable procurement, supported by financial strategies and employee management. However, inadequate budgeting involvement (mean = 2.36), insufficient skilled personnel (mean = 1.99) and limited technological advancements (mean = 2.61) restrict effectiveness, necessitating targeted improvements.

Supplier collaboration enhances sustainable procurement through innovation and contingency planning. Weak communication (mean = 2.36) and supplier capacity assessment (mean = 1.99) reduce its impact, requiring improved engagement strategies.

The legal and regulatory framework is a critical driver, supported by audits and environmental practices. Inconsistent training (mean = 2.67) and weak contingency plans undermine compliance, indicating a need for enhanced training and planning.

Organizational culture moderately strengthens the relationship between predictors and sustainable procurement, particularly through adaptability and feedback. Misalignment with sustainability missions (mean = 2.36) and poor integration of practices (mean = 1.99) limit its influence, suggesting a need for cultural realignment.

5.4 Recommendations

To address the lack of specific sustainability goals (mean = 2.61), top management of regional WSPs in Western Kenya should develop and communicate measurable sustainability objectives through policy documents and quarterly staff briefings. Implementing biannual training workshops to equip staff with relevant skills and establishing a survey-based feedback mechanism will enhance strategic clarity and engagement.

To overcome deficiencies in organizational resource capacity (mean = 1.99 for skilled employees, mean = 2.36 for budgeting, mean = 2.61 for technology), regional WSPs in Western Kenya should recruit sustainable procurement specialists and provide continuous training. Adopting an inclusive budgeting process involving all departments and investing in e-procurement software will improve resource efficiency and technological adoption.

To improve supplier collaboration, particularly in communication (mean = 2.36) and capacity assessment (mean = 1.99), regional WSPs in Western Kenya should establish digital platforms for real-time supplier interaction and develop a standardized evaluation framework. Expanding incentives for sustainable innovations and strengthening contingency plans will foster robust partnerships.

To address the training gap in the legal and regulatory framework (mean = 2.67), regional WSPs in Western Kenya should implement mandatory compliance training biannually and appoint dedicated compliance officers to oversee audits. Developing detailed contingency plans for contract breaches will reinforce adherence to legal and environmental standards.

To enhance organizational culture's moderating effect, addressing mission misalignment (mean = 2.36) and practice integration (mean = 1.99), regional WSPs in Western Kenya should align procurement with sustainability missions through strategic planning. Establishing cross-functional teams for feedback integration and a task force to monitor market trends will cultivate a sustainability-driven culture.

5.5 Suggestions for Further Research

Future studies should explore sustainable procurement in other Kenyan public sectors, such as health or education, to compare with the water sector and identify sector-specific factors. Investigating additional variables, such as leadership styles or technological adoption rates, could provide deeper insights. Examining other moderating factors, like market dynamics or organizational size, may reveal further influences on sustainable procurement strategies.

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APPENDICES

APPENDIX I: INTRODUCTION LETTER

Dear respondent,

My name is ***Benard Omondi Okello***, a student at ***Masinde Muliro University of Science and Technology***, currently conducting a study on *"**Enablers of the Adoption of Sustainable Procurement Practices in the Kenyan Water Service Sector in the Western Region**."*

Your insights and contributions will be invaluable in advancing understanding in this field. I kindly invite you to participate by providing relevant information for this study. Please be assured that any data shared will be treated with strict confidentiality and used solely for academic purposes.

Thank you in advance for your time and support. Your assistance is highly appreciated.

Bernard Omondi 0721463883.

Appendix II: Questionnaire

Kindly answer all questions by ticking [√] your responses against each question in the space provided. The information you provide will be used strictly for academic purposes only and will be treated with utmost confidentiality.

SECTION A: GENERAL INFORMATION

Please indicate the Water Company you work for: Lake Victoria North Water Works Authority [ ], Kakamega Water Service Company [ ], Nzoia Water Services Company [ ], Atmasi Water Services Company [ ]

1. Highest level of education of respondents

Certificate ☐ Diploma level ☐ Degree level ☐

Master's degree ☐ Doctor of Philosophy ☐ Other (specify)…….

2.Working experience

0-4 year ☐ 5-10- years ☐ 11-15 years ☐ above 16 years ☐

SECTION B: ENABLERS OF THE ADOPTION OF SUSTAINABLE PROCUREMENT PRACTICES.

Please rate the accuracy of the following statements in relation to your organization by using a scale from 1 to 5, where 5= Strongly Agree; 4= Agree; 3= Moderately Agree; 2= Disagree; 1= Strongly Disagree.

PART: I TOP MANAGEMENT SUPPORT

No	Statement on Top Management Support.	5	4	3	2	1
1	Top management clearly articulates and champions the strategic direction for sustainable procurement within our agency.					
2	Top management develop policies which are aligned with the institutions vision					
3	The strategic direction set by top management includes specific goals for sustainability in procurement.					
4	Top management receive feedback from stakeholder about development policies					
5	Top management regularly interacts with staff to emphasize the value of sustainable procurement practices.					

PART: II ORGANIZATION RESOURCE CAPACITY

No	Statement on Organization Resource Capacity	5	4	3	2	1
1	Our organization has a long-term financial strategy					
2	All departments and units are adequately involved in the budgeting process.					
3	Our organization has the right number of employees with the necessary skills					
4	Our organization manages employee sustainable procurement and productivity					
5	We keep pace with technological advancements in our organization to enhance sustainability.					

PART: III SUPPLIER COLLABORATION.

No	Statement on Supplier Collaboration	5	4	3	2	1
1	Our organization collaborate with suppliers to drive innovation.					
2	Our organizations have incentive programs or awards for top- performing suppliers based on innovation contributions.					
3	Our organization has contingency plans in place for supply chain disruptions or any risk that may affect supplier sustainable procurement .					
4	Our organization has effective communication with supplier through timely and clear information exchange					
5	Our organization determine supplier capacity through their strengths and weaknesses in terms of capabilities					

PART: IV ADHERENCE TO LEGAL AND REGULATORY FRAMEWORK.

No	Statement on Adherence to Legal and Regulatory Framework.	5	4	3	2	1
1	We conduct regular audits or assessments to evaluate our employee's adherence to legal and regulatory frameworks					
2	Our organization has persons responsible for overseeing procurement compliance.					
3	Our organization carries out training exercises to ensure consistent adherence to compliance policies and procedures across the organization					
4	Our organization carries out various practices to minimize environmental impact.					
5	We have contingency plans in place for mitigating the impact of contract breaches					

SECTION C: ORGANIZATION CULTURE

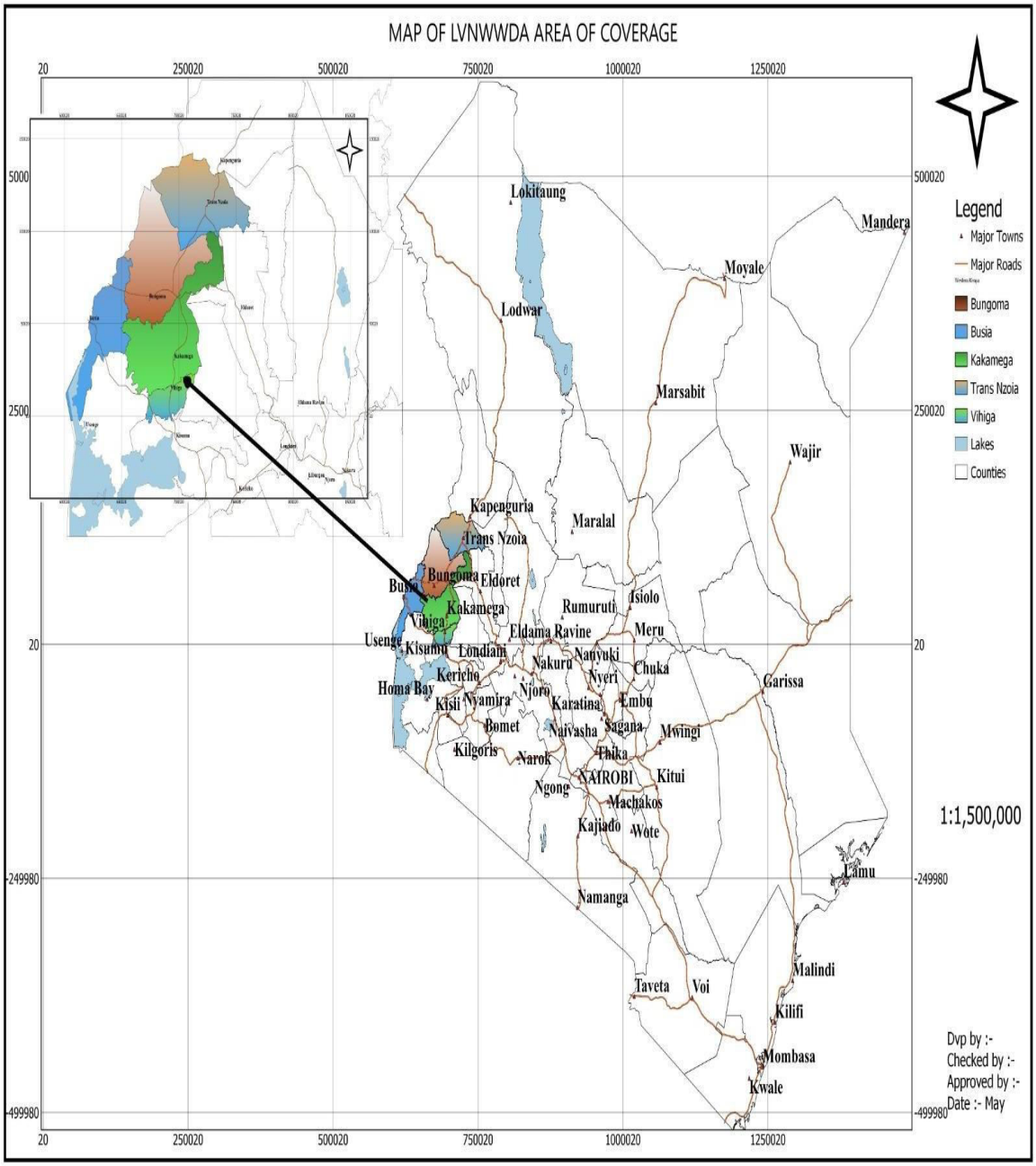
No	Statement on Organization Culture	5	4	3	2	1
1	Our organization's procurement practices align with its mission statement regarding sustainability.					
2	We incorporate feedback from employees and suppliers into our mission-driven initiatives.					
3	Our organization consistently integrates sustainable practices into its procurement processes.					
4	Our organization adapts its procurement practices to incorporate sustainable initiatives and changes in the industry (market trends, technological advancements and regulatory changes).					
5	Employees are involved in the development and implementation of sustainable procurement practices in the organization.					

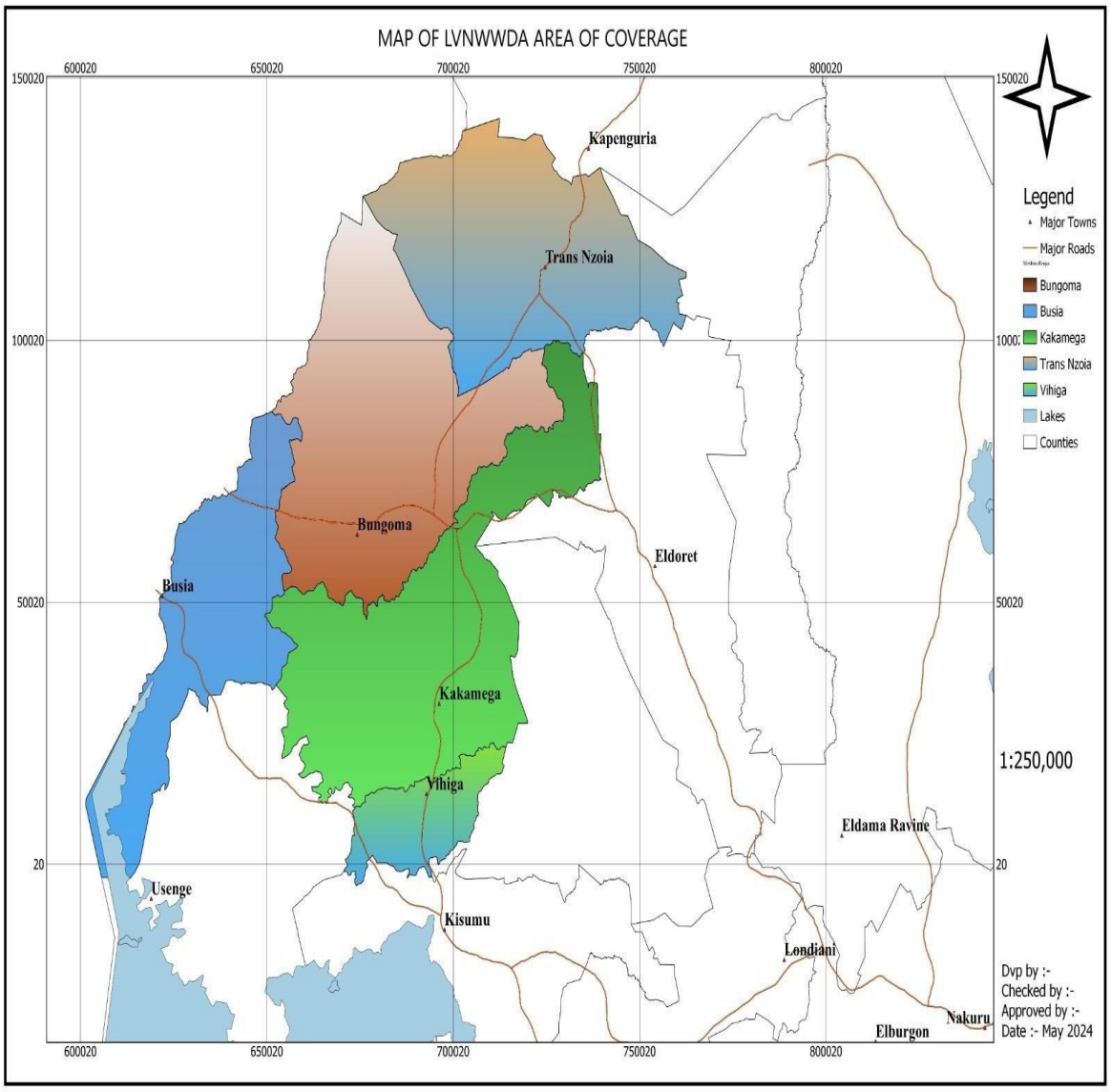
SECTION D: SUSTAINABLE PROCUREMENT

No	Statement on Sustainable Procurement	5	4	3	2	1
1	We encourage suppliers to adopt sustainable practices throughout the supply chain.					
2	We utilize e-procurement systems to enhance sustainability in our procurement processes, such as reducing paper waste, improving efficiency and tracking environmental impacts					
3	We give preference to suppliers that offer sustainable environmentally friendly alternatives					
4	We prioritize green procurement practices, such as purchasing environmentally friendly products or services					
5	Our organization prioritize supplier diversity in its procurement practices, such as sourcing from diverse suppliers owned by minorities, women, veterans, or other underrepresented groups.					

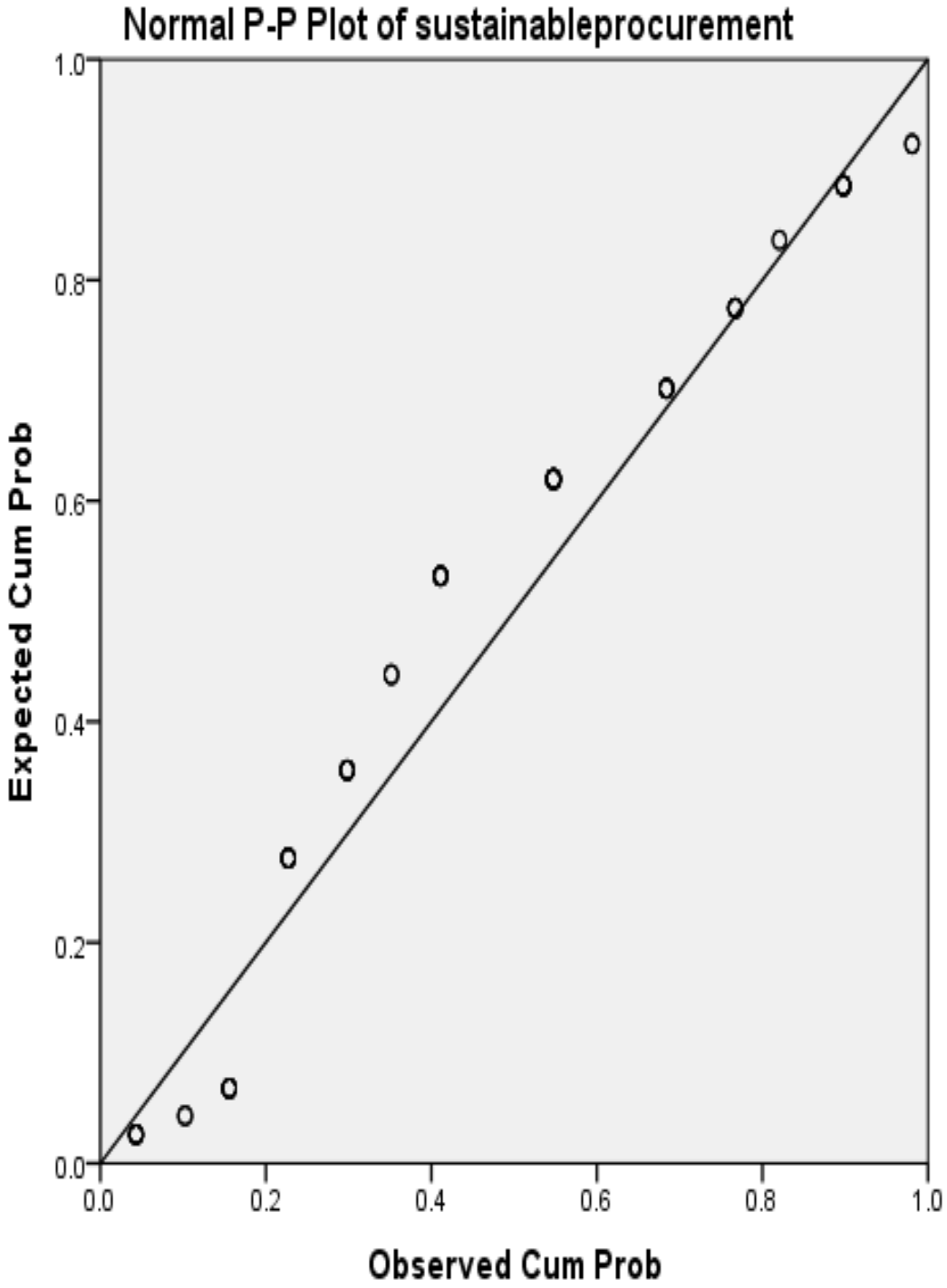
THANK YOU

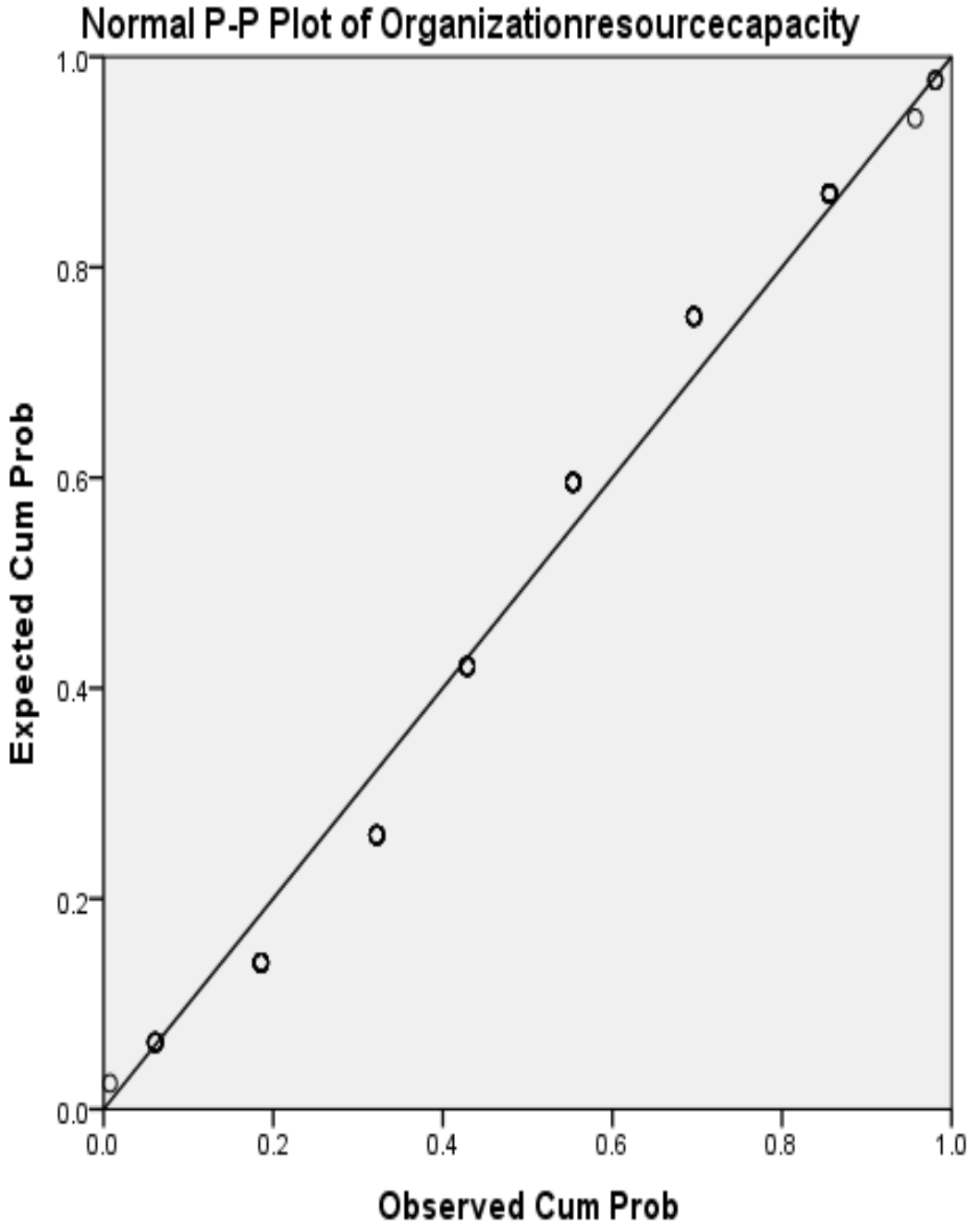
APPENDIX V: STUDY AREA MAP

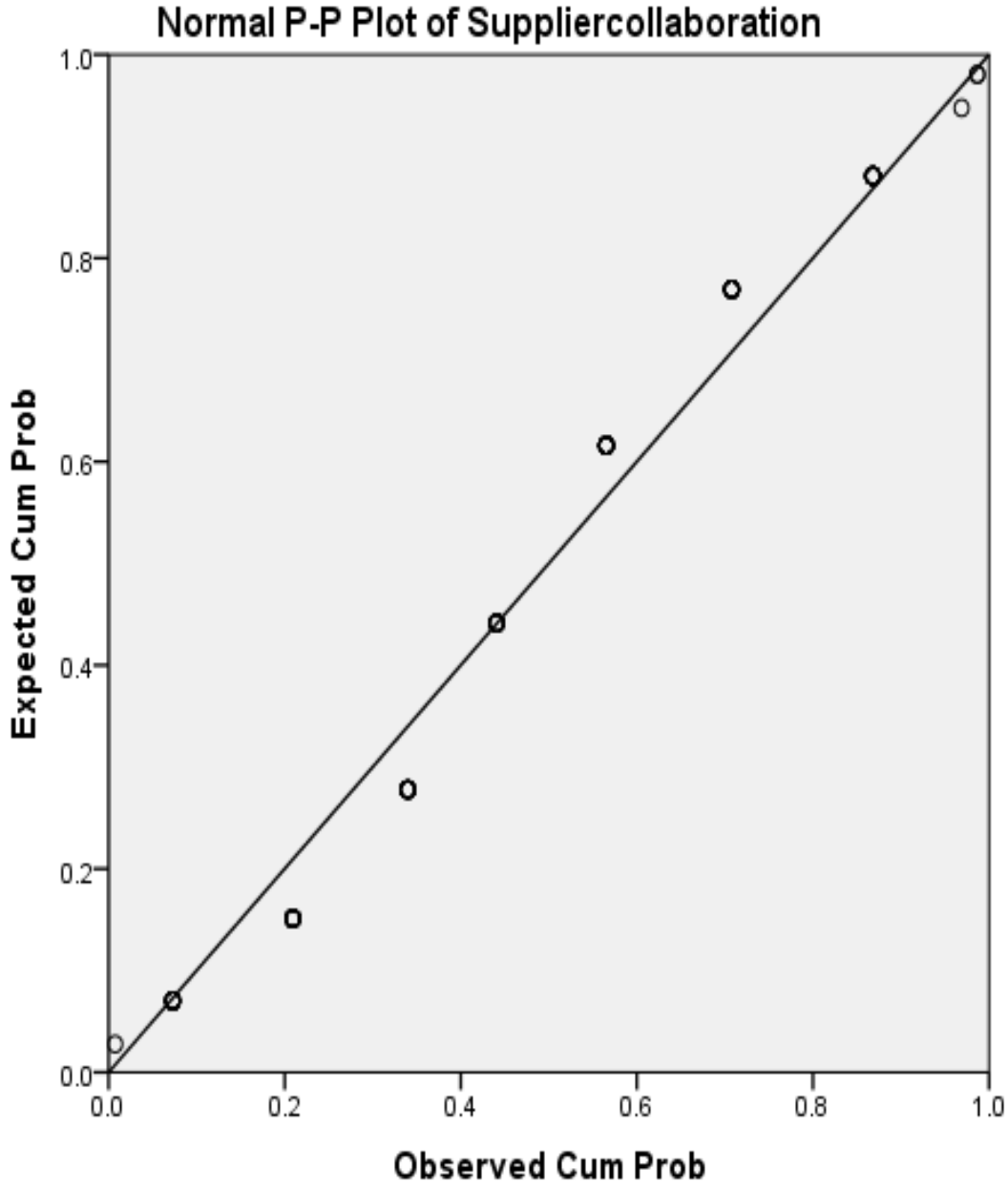


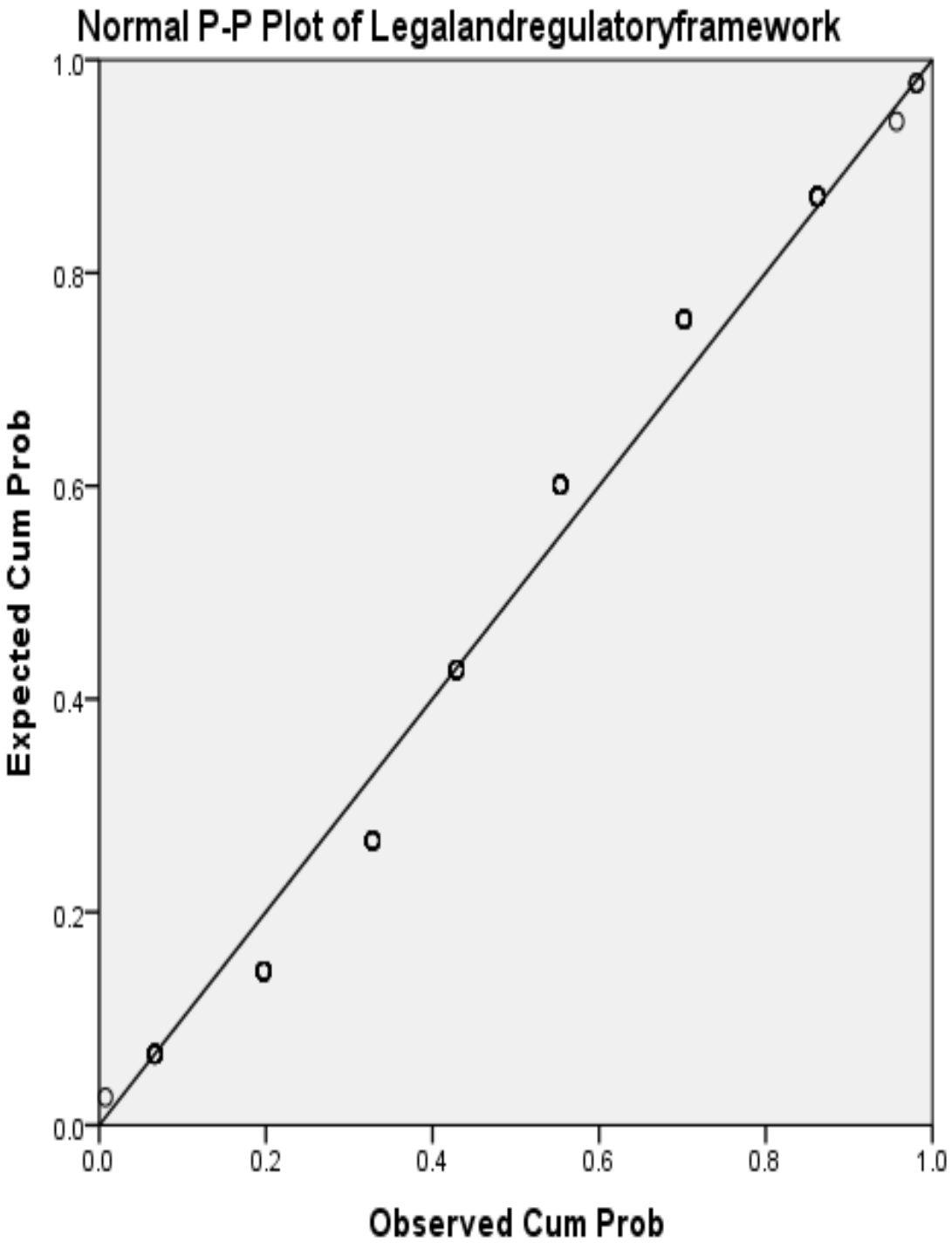

MAP OF LVNWWDA AREA OF COVERAGE
600020
650020
700020
750020
800020
150020
100020
50020
20
Kapenguria
Trans Nzoia
Bungoma
Busia
Eldoret
Kakamega
Vihiga
Eldama Ravine
Usenge
Kisumu
Londiani
Nakuru
Elburgon
Legend
Major Towns
Major Roads
Bungoma
Busia
Kakamega
Trans Nzoia
Vihiga
Lakes
Counties
1:250,000
Dvp by :-
Checked by :-
Approved by :-
Date :- May 2024

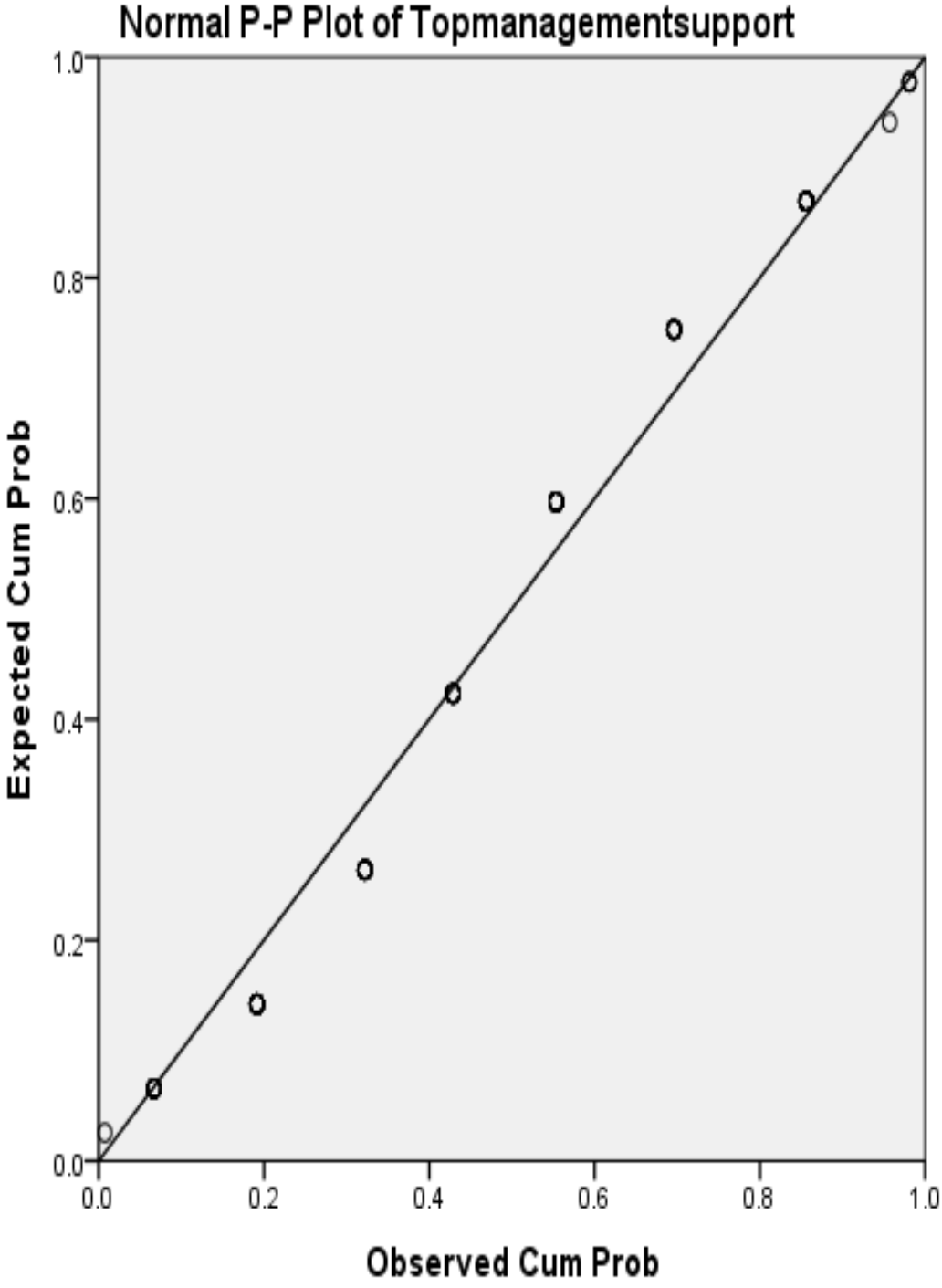
APPENDIX V: Normal P-P Plots




Normal P-P Plot of Organizationresourcecapacity
Expected Cum Prob
Observed Cum Prob
0.0
0.2
0.4
0.6
0.8
1.0


Normal P-P Plot of Suppliercollaboration
Expected Cum Prob
Observed Cum Prob
0.0
0.2
0.4
0.6
0.8
1.0


Normal P-P Plot of Legalandregulatoryframework
Expected Cum Prob
Observed Cum Prob
0.0
0.2
0.4
0.6
0.8
1.0


Normal P-P Plot of Topmanagementsupport
Expected Cum Prob
Observed Cum Prob
0.0
0.2
0.4
0.6
0.8
1.0