



**FACTORS INFLUENCING SUSTAINABLE
PROCUREMENT AND LOGISTICS
PRACTICES WITHIN SOUTH SUDAN'S
PRIVATE AND PUBLIC SECTORS**

Master's Degree Thesis

Chol John Tit ANYIETH

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**FACTORS INFLUENCING SUSTAINABLE PROCUREMENT AND LOGISTICS
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CHOL JOHN TIT ANYIETH

MASTER’S DEGREE THESIS

Business Administration (English)

Business Management

Advisor: Prof. Dr. Cem IŞIK

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JURİ VE ENSTİTU ONAYI

Chol John Tit ANYIETH 'nın “Güney Sudan’ın Özel ve Kamu sektöründe sürdürülebilir Tedarik Ve Lojistik Uygulamalarını Etkileyen Faktörler” başlıklı tezi 12/09/2025 tarihinde aşağıdaki jüri tarafından Lisansüstü Eğitim-Öğretim ve Sınav Yönetmeliği’nin ilgili maddeleri uyarınca İşletme Anabilim Dalı İşletme yönetimi (İngilizce) Programında Yüksek Lisans tezi olarak değerlendirilerek kabul edilmiştir.

Üye (Tez Danışmanı):

Prof. Dr. Cem IŞIK

Üye:

Prof. Dr. Levent ERDOĞAN

Üye:

**Prof. Dr. Ebru Günlü
KÜÇÜKALTAN**

Prof. Dr. Nafiz Öncü CAN

Anadolu Üniversitesi

Lisansüstü Eğitim Enstitüsü Müdürü

ÖZET

GÜNEY SUDAN'IN ÖZEL VE KAMU SEKTÖRLERİNDE SÜRDÜRÜLEBİLİR TEDARİK VE LOJİSTİK UYGULAMALARINI ETKİLEYEN FAKTÖRLER

Chol John Tit ANYIETH

İşletme (İngilizce)

İşletme Programı

Anadolu Üniversitesi, Lisansüstü Eğitim Enstitüsü,

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Advisor: Prof. Dr. Cem IŞIK

Bu çalışma, Güney Sudan'ın kamu ve özel sektörlerinde sürdürülebilir lojistik ve tedariki etkileyen faktörleri araştırıyor - ülkenin sosyo-ekonomik zorlukları göz önüne alındığında kritik öneme sahip bir konu. Siyasi istikrarsızlık, yoksulluk, kıt kaynaklar ve zayıf altyapıyla karşı karşıya olan bir ülke olarak Güney Sudan, sürdürülebilirliği teşvik etmek için ekonomik büyümeyi ve çevrenin korunmasını destekleyen özel stratejilere ihtiyaç duyuyor.

Araştırma, özellikle geleneksel yaklaşımların yetersiz kaldığı durumlarda, sürdürülebilir tedarikin geliştirilmesine yönelik engelleri ve fırsatları belirlemeyi amaçladı. Cinsiyet eşitsizliği, beceri boşlukları ve zayıf düzenleyici çerçeveler gibi konuların ele alınması, sürdürülebilir uygulamaları ilerletebilir.

Bunu test etmek için 400 katılımcı yapılandırılmış anketleri doldurdu. Veriler tanımlayıcı ve çıkarımsal istatistikler kullanılarak analiz edildi. Özellikle, katılımcıların %92,25'i erkekti ve bu da keskin bir cinsiyet dengesizliğini vurguluyor. Bulgular, siyasi öngörülemezlik ve yetersiz altyapı da dahil olmak üzere sürdürülebilirliği engelleyen büyük zorlukları ortaya koyuyor.

Çalışma, Güney Sudan'ın uzun vadeli kalkınma hedefleriyle uyumlu sürdürülebilir lojistik ve tedariki teşvik etmek için kapasite geliştirme programları ve daha güçlü kamu-özel sektör işbirlikleri gibi hedefe yönelik müdahalelere duyulan ihtiyacın altını çiziyor.

Anahtar Kelimeler: Sürdürülebilir tedarik, lojistik, cinsiyet eşitsizliği, yaş dağılımı, özel sektör, kamu sektörü, kaynak kıtlığı, siyasi istikrarsızlık, Güney Sudan.

ABSTRACT

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This study explores factors influencing sustainable logistics and procurement in South Sudan’s public and private sectors—a topic of critical importance given the country’s socio-economic challenges. As a nation facing political instability, poverty, scarce resources, and weak infrastructure, South Sudan requires tailored strategies to promote sustainability that support economic growth and environmental conservation.

The research aimed to identify barriers and opportunities for enhancing sustainable procurement, particularly where conventional approaches have proven insufficient. Addressing issues such as gender inequality, skills gaps, and weak regulatory frameworks could advance sustainable practices.

To test this, 400 respondents completed structured questionnaires. Data were analyzed using descriptive and inferential statistics. Notably, 92.25% of participants were men, highlighting a stark gender imbalance. Findings reveal major challenges hindering sustainability, including political unpredictability and inadequate infrastructure.

The study underscores the need for targeted interventions, such as capacity-building programs and stronger public–private collaborations, to foster sustainable logistics and procurement aligned with South Sudan’s long-term development goals.

Keywords: Sustainable procurement, logistics, gender disparity, age distribution, private sector, public sector, resource scarcity, political instability, South Sudan.

DECLARATION OF COMPLIANCE WITH ETHICAL PRINCIPLES AND RULES

I declare that this thesis is my own, an original study; that I have acted in accordance with scientific ethical principles and rules at all stages of my study, including preparation, data collection, analysis and presentation of information; that I have cited sources for all data and information obtained within the scope of this study and that I have included these sources in the bibliography; that this study has been scanned with the "Scientific Plagiarism Detection Program" used by Anadolu University and that it does not contain plagiarism in any way. I hereby declare that I accept all moral and legal consequences that may arise if at any time a situation contrary to this statement I have made regarding my work is detected.

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My heartfelt thanks go to the participants, stakeholders, and professionals in the logistics and procurement sectors of South Sudan who generously shared their valuable insights and experiences. Their contributions provided essential data and practical perspectives that strengthened the relevance and depth of this study.

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To all who contributed in one way or another to the success of this study, I extend my deepest appreciation.

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Chol John Tit ANYIETH

Table of Contents

ABSTRACT.....	III
DECLARATION OF COMPLIANCE WITH ETHICAL PRINCIPLES AND RULES	V
1. INTRODUCTION.....	1
1.1 BACKGROUND OF THE STUDY	10
1.2 STATEMENT OF THE PROBLEM	11
1.3 RESEARCH OBJECTIVES.....	12
1.4 SIGNIFICANCE OF THE STUDY:	12
1.5 SCOPE OF THE STUDY:.....	13
1.6 LIMITATIONS OF THE STUDY:	13
1.7 THEORETICAL BACKGROUND.....	14
2. LITERATURE REVIEW.....	24
2.1 GLOBAL FACTORS.....	28
2.2 REGIONAL FACTORS (EAST AFRICA)	29
2.3 LOCAL FACTORS (SOUTH SUDAN)	30
3. METHODOLOGY.....	32
3.1 RESEARCH DESIGN.....	32
3.2 DATA COLLECTION METHODS	33
3.2.1 Primary data collection.....	33
3.2.2 Secondary data collection	36
3.2.3 Secondary data collection	37
3.3 DATA SOURCES	38
3.4 SAMPLING TECHNIQUES.....	39
3.5 DATA ANALYSIS TECHNIQUES	41
3.6 ETHICAL CONSIDERATIONS.....	42
3.7 VALIDITY AND RELIABILITY	43
3.9 CONCLUSION	44
4. DATA ANALYSIS AND FINDINGS	44
4.1 OVERVIEW	44
4.2 DEMOGRAPHIC INFORMATION.....	45
4.2.1 Gender distribution	45
4.2.3 Sector of employment	48
4.3 ANALYSIS OF KEY FACTORS INFLUENCING SUSTAINABILITY	49

4.3.1 Importance of sustainability	49
4.3.2 Environmental Considerations	51
4.4 INFERENTIAL ANALYSIS OF FACTORS	53
4.4.1 Influence of Political Instability	53
4.5 FACTORS BY SECTOR	54
5. DISCUSSION	68
5.1 DISCUSSION OF FINDINGS.....	68
5.1.1 Role of private sector engagement	68
5.1.2 Infrastructure deficiencies.....	70
5.1.3 Environmental and social sustainability	71
5.2 COMPARISON WITH PREVIOUS STUDIES	72
5.2.1 Strengthening regulatory frameworks.....	73
5.2.2 Capacity building	74
5.2.3 Public-private partnerships (PPPs)	76
5.2.4 Promoting inclusivity.....	77
5.3 LIMITATIONS AND FUTURE RESEARCH.....	78
5.3.1 Limitations.....	78
5.3.2 Future recommendations and implementation in the context of uncertainty.....	79
5.3.3 Future research	82
5.4 POLICY RECOMMENDATIONS	82
5.5 CONCLUSION	85
REFERENCES	87

1. INTRODUCTION

Organizations across the globe, including in developing countries like South Sudan, have begun to pay attention to sustainable logistics and procurement. The Triple Bottom Line (TBL) Theory suggests further consideration of the environmental, social, and economic aspects of sustainability in relation to procurement and supply management sourcing for sustainability in supply chain management could produce long-term sustainability outcomes. Sustainable logistics and procurement also exist within the public sector. However, it is essential to achieve organizational objectives and address some of the problems facing society and the environment. Although the contextual specifics of Southern Sudan's unique socio-economic context, sustainability in logistics and procurement support should also be contextually and sustainable. Eleven million citizens of Southern Sudan experience under development, chronic poverty and 80 percent of the population live in rural areas. The World Bank estimates that over 76 percent of South Sudan's population live below the global poverty line at \$1.90 a day. There is also insufficient basic infrastructure needs such as roads, electricity and access to water supplies, coupled with political uncertainty, limited amounts of resources, and years of warfare that have weakened institutions and continued to hinder sustainable long-term solutions (Thelma et al., 2024). Private sector is an enable as a determining driver in South Sudan's economic growth and development. However, the establishment of sustainable logistics and procurement policies are limited due to lack of legal frameworks, unclear obligations, and limited procurement initiatives in the private sector (Paraskeva & Tsoulfas, 2025). Lack of capacity in both establishing sustainable procurement practices and unclear regulatory models has marked the private sector, as continuing inefficiencies and unsustainability continue. Logistics and procurement is part of the provision of infrastructure and services, within the public sector. Public sector sustainability is frequently face by sustainability barriers such as institutionalism, corruption and lack of transparency (Adekoya, 2024). It is estimated that as much as roughly the same ratio, about 60% of government spending relates to the purchase of goods and services. Hence, sustainability nexus discussed herein, should be entertained, to ensure good use of resources, and maintain environmental stewardship. Environmental sustainability

considerations should be undertaken throughout the logistics and procurement processes. For example, activities that donated towards environmental degradation in South Sudan, included deforestation, over-extraction of natural resources, and fossil fuels (Elnourani et al, 2024). The establishment has the capacity to mitigate activities by encouraging green materials, energy-efficient technologies, and renewable energy sources, procurement policies that aim to promote this direction.

Social Sustainability: Social sustainability is an important component to sustainable logistics and procurement. Procurement processes must also include social aspects pertaining to poverty, inequality, and access to health and education (Aboug, 2024). The use of sustainable practices can reduce such concerns, leading to more ethical working conditions, the development of suppliers locally, and community engagement.

Economic viability is interrelated with environmental and social issues. Sustainable procurement and logistics can be significant drivers of economic growth, through reduced expenditures, less waste, and better efficiency in their operations (Deivendra & Edirisinghe, 2024). When adopted well these practices will be a notable contributor to South Sudan's efforts at national development and economic growth.

Global sustainability has changed the way logistics and procurement are initiated around the world. As international organizations and donors engage with South Sudan they are increasingly relying on sustainability as part of that engagement. This limits the options available for local actors to compete or develop sustainability independently (Qaddour et al., 2024). While navigating the local realities in conjunction with global demands will include obstacles, it has also brought opportunities to share ideas and learn.

In South Sudan, the regulatory environment has a significant influence on logistics and procurement practices and outcomes. Unsatisfactory environmental policies and poor enforcement of existing regulations are a challenge to sustainability (Nimieri, 2024). Stronger regulations and better enforcement are needed in order to increase the likelihood of public and private entities adopting sustainable behaviors. The evolution of infrastructure

(reforms and investments) can significantly improve sustainable logistics and procurement. Dependence on inadequate road, port, and warehouse capacity has impeded the seamless flow of goods and services (Thelma et al., 2024). Investments in green infrastructure hold promise for lessening environmental impact and enhancing logistics performance.

Technology is a key pillar in sustainable logistics and procurement. Emerging technologies (e.g., blockchain, big data, and IoT) can help to ensure the supply chain is more transparent, efficient, and accountable (Udeh et al., 2024). The use of technology can help address environmental monitoring, supplier management, and resource tracking in South Sudan.

Human capacity is one of the key drivers of sustainable logistics and procurement. The implementation of sustainability in South Sudan has revealed by the scarcity of skills and expertise (Nimieri, 2024). It is therefore key to improve capacity and knowledge and skills through training, education, and other development actions.

Sustainability in logistics and procurement can be achieved through collaboration and partnership. Communities, global partnerships, and built public and private collaborations (Abdul et al., 2024) can enable innovation and resource sharing, capacity building. These partnerships can support and strengthen human resource and infrastructure development in South Sudan.

Logistics and procurement in South Sudan are continuing to be characterized by systemic corruption, which undermines the move to sustainability as they reduce accountability, efficiency, and transparency (Aboug, 2024). Strong government mechanisms, formal control measures, and an integrity-based culture are needed to counter corruption through development initiatives.

A supply-chain-wide approach should be taken to reach green procurement and logistics. Tools such as life cycle assessment (LCA) (Subal et al., 2024) enable organizations to assess the potential environmental, social, and economic costs of procurement. This helps organizations make informed decisions to achieve sustainability.

The issue of climate change and global warming points to the necessity for sustainable logistics and procurement. Flooding, drought, and food insecurity can be an effect of climate change happening increasingly in South Sudan (Akuel, 2024). Climate-resilient logistics and procurement practices can mitigate vulnerability and improve adaptive capacity.

In the context of sustainable procurement, "local" is a major focus for consideration. Local procurement decreases transportation costs, lowers pollution, boosts economies, and promotes communities (Fredson et al., 2025). Local procurement emphasis promotes equity and sustainability, and helps minimize disruptions to the supply chain.

Awareness and education are primary motivations for sustainable logistics and procurement. There is little awareness of sustainability in many areas of South Sudan (Onukwulu et al., 2025). Education and awareness-raising can also help to develop, and implement a vision, which may subsequently positively change logistics and procurement.

Monitoring and evaluation will assist to understand whether the sustainable logistics and procurement is helping. Developing measures will allow organizations to measure compliance with implementation, report opportunities for change and demonstrate the significance of sustainability where measurement may be less pertinent (Marrucci et al., 2024).

There are challenges to achieving sustainability with supply chains through procurement and logistics, which include reluctance, competing priorities, and limited resources (Gonçalves et al., 2024). Collaboration will be needed in establishing protocols to address these within the community, organization and government.

South Sudan has an opportunity to trial paying attention to sustainable logistics and procurement processes, which may help respond to pressing environmental, social, and economic issues. Sustainability or resilience in our public and private sectors will aid sustainable development goals no matter the turnaround.

Sustainable logistics and procurement are now well-established components of public and private sector change processes around the world. In South Sudan's post-conflict recovery context, high levels of fragility of economies, socio-political instability will have different challenges and opportunities to work with sustainable logistics and procurement. Understanding what informs sustainable practice may assist in developing frameworks to negotiate trade-offs amongst social equity, environmental integrity and economic resiliency/viability.

Unless sustainability is prioritized, long-term growth in countries like South Sudan is impossible. Economic efficiency in procurement and logistics focuses on optimizing resource use and minimizing expenditure in both the public and private sectors. To achieve this, the consumption of limited resources should be maximized, and expenditures minimized. This balance can narrow the gap between the country's finite resources and developmental needs (Wanyama et al., 2025). Economically efficient procurement can improve financial outcomes and performance in public service delivery, alongside their critical importance to stability and economic growth of a nation.

Economic efficiency in supply chains means reducing costs while maximizing overall value. Strategies such as, just in time inventory, supplier consolidation and bulk purchasing are important to reduce the costs associated with wasting resources, reducing inventory holding costs and maximizing cash flows (Mohamed, 2024). A centralized procurement system also provides significant cost savings and minimizes duplication of services allowing, both the public and private sectors, to increase investment in development projects and services.

Integrating sustainability, in procurement and logistics, can also result in positive environmental outcomes. The environmental impacts of the supply chains can be positively impacted with eco-friendly packaging, green suppliers and optimized transport routes (Vangeri et al., 2024). Green logistics is critically important in a country like South Sudan, where agriculture and natural resources are vital to the economy. The environmental impact

from the supply chain must be minimal to sustain the agricultural and natural resource sectors.

Social sustainability ensures equitable access to the benefits of development. The use of sustainable practices can contribute to socially sustainable development, such as fair working conditions, supporting local businesses, and benefitting local communities. Sustainable practices can also help with major social problems such as unemployment and poverty (Cooper, 2024). Prioritizing local suppliers and small businesses provides further benefits by contributing to the local economy, and creating employment. Providing employees with equitable wages and working conditions allows for improvement in personal wellbeing, wellbeing of the community, and societal wellbeing while building a resilient and equitable society.

To access the benefits said above, South Sudan will require an integrated approach to implementation of sustainable logistics and procurement in both public and private sector organizations. Wherever an organization situates itself, it needs to formally allocate itself to sustainability, and to apply methodological approaches to uphold the sustainability framework (Subal et al., 2024). There will also be a requirement for capacity building and training to enable procurement professionals with the knowledge to integrate sustainability into decision making. Public-private partnerships will also be critical to creating an enabling environment for development and promoting sustainable socio-economic development.

Environmental sustainability in logistics and procurement is critical to mitigating impacts and decreasing carbon footprints. Green practices in logistics and procurement practices, such as the use of renewable materials, waste reduction, and greenhouse gas emissions reduction facilitates conservation of resources and the overall health of ecosystems (Filonchyk et al., 2024). Green transportation, electric vehicles, route optimization, and better waste management can facilitate achievement of environmental aims.

Environmental responsibility in procurement and logistics benefits brand reputation, increases appeal to environmentally conscious consumers, and generates cost benefits

(Cooper, 2024). A commitment to sustainable and responsible practices opens the road to long term sustainability and resilience as they ensure that natural resources are utilized in a reasonable and judicious manner for the wellbeing of future generations.

Social inclusion is achieved through local purchasing, decent work, and community development (Govindan et al., 2025). Inclusive procurement and logistics practices increase economic opportunity and social equity among marginalized groups (Bucos, 2024).

A holistic response considers South Sudan's specific opportunities and limitations. Sustainable procurement and logistics arise out of collaboration among actors in the public and private sectors and civil society organizations (Liu et al., 2024). Capacity development, policy development, and technology adoption lead to systemic development, with an emphasis on social justice, environmental sustainability, and economic sustainability.

The presence of robust regulatory frameworks is crucial to facilitating sustainable logistics and procurement operations. Legislation establishes the agreed standards, rules, and regulations and provides incentives to add the adoption of sustainable practices. However, weak institutional environment poses challenges to implementation when regulations and standards do not or cannot be enforced (Vangeri et al., 2024; Fredson et al., 2025). Legislation will need to be developed and enforced, as well as monitoring systems for sustainable practices to be viable.

The capacity of the organization is also key to advancing sustainable logistics and procurement. Organizations are much more effective in their endeavors towards sustainability when they have the required technological capacities, human resources, and implementation systems (Filonchyk et al., 2024). Unfortunately, many public sector organizations in South Sudan do not have the required organization capacities due to aged or inadequate physical and technological infrastructures (Oyetade et al., 2024). Organizational capacity can be strengthened through training, rolling out necessary technologies, and developing partnerships to help increase sustainability and framework arrangements into the organization.

Similarly, market conditions can play a role in procurement decisions because limited or available sustainable products may restrict sustainability in procurement decisions. Expanding markets within the region and attracting foreign vendors may help in the procurement of sustainable products (Qaddour et al., 2024).

Socio-political considerations and circumstances can affect sustainable logistics and procurement. Political stability can create an opportunity to ensure sustainability in the development and implementation of program/plans. In South Sudan, ongoing political disturbances or conflicts dampen the governance process, create instability in institutional platforms for sustainability, and deter the willingness of donor countries to engage in long-term investments (De, 2024).

Social acceptance may also be a critical factor. In all of these cases, sustainability in procurement and logistics may be difficult to attain, and the priorities of several communities will focus on survival rather than sustainability when the socio-economic context is very challenging. To ensure long-term community support for sustainable practices, there must be an opportunity for communities to be educated about the benefits of sustainability and these practices to engage community interest (Waqar et al., 2025).

Donors and international development agencies, such as the Global Environment Facility or the United Nations Development Program, may provide funds, outside assistance, and build local capacity to implement, monitor, and evaluate sustainability, and integrate sustainability in the procurement process and practice (Subal et al., 2024; Gonçalves et al., 2024). Donors and development agencies want to ensure local ownership and the development of contextual sustainability practices as they provide aid (funds and aid) to countries in the Global South.

International capacity building is critical to create resilient institutional environments capable of maintaining logistics and procurement policies (Al Mokdad, 2025). Coordination of public institutions, private entities, and Civil Society Organizations (CSOs) will help to create a sustainable enabling environment.

Regulatory frameworks provide the standards and rules to establish sustainable procurement. Policymakers will want to establish policy objectives to address local and social procurement while maintaining alignment with international standards (Udeh et al., 2024; Manta & Mansi, 2024). Weak institutional frameworks, lack of government enforcement and limited resources undermine sustainability policies.

Corruption and political interference undermine enforcement. Many enforcement bodies do not have sufficient independence in mandate, funding, skills, and effective technology to adequately facilitate compliance. In this regard, monitoring and evaluation and developing data-driven approaches to improve compliance would help improve enforcement capabilities.

Political stability and societal acceptance are one of the prerequisites to ensure effective implementation of sustainable logistics and procurement. Education outreach and community engagement is also beneficial to show visible benefits of sustainability that increase the likelihood of adoption.

Addressing societal needs, economic development, education and health can drive the potential to embed sustainability into larger development frameworks. International partnerships and collaboration can promote support regarding finance, technical assistance and capacity building to ensure that sustainability efforts are culturally contextualized.

Lastly, sustainable logistics and procurement in South Sudan will require a three-prong approach: societal acceptance, political stability, and context relevance. To accomplish these objectives would require the traditional stakeholders which are policymakers, business leaders and development practitioners, to develop a holistic perspective to create effective sustainable frameworks for South Sudan. This research is meant to further clarify these issues with accompanying new studies and cases to establish lessons learned and the capability to move forward.

1.1 Background of the Study

After years of civil unrest, South Sudan, considered the newest nation in Africa, gained independence in 2011. However, independence did not guarantee stability or peace, and the country continues to struggle with political instability, ethnic conflicts, and economic challenges. These challenges are stalling any progress that South Sudan could be making along a developmental trajectory, affecting logistics and procurement (Sajid et al, 2024).

The procurement and logistics system in South Sudan is faced with significant challenges that stem directly from the sociopolitical context of the country. Political instability has created a climate of uncertainty because of ongoing tensions and longstanding historical conflicts. Ethnic and political rivalries disrupt the very nature of the supply chain and prevent the timely delivery of goods and services across South Sudan.

In South Sudan, limited institutional capacity and poor governance systems hinder procurement and logistics performance. Lack of transparency and accountability characterize the procurement process through corruption and inefficiencies in government institutions, which misallocate resources and leads to waste. Lack of oversight in governance further heightens society's exposure to fraud and undermines the legitimacy of procurement, nuisance the commitment of donors and investors to the future development of South Sudan.

The hurdles faced by professionals in procurement and logistics in South Sudan are complicated by the challenges associated with poor infrastructure. Infrastructure challenges further complicate the practice of supply chain management, especially in rural areas. Variable access to roadways, lack of consistent electricity, and limitations on the delivery of basic services can also prevent goods and services from getting to the places they need to go. For example, while upgrading road infrastructure is a minor investment, it can significantly increase the movement of basic supplies and improve logistical efficiencies and availability of priority goods and services (Diene, 2024).

Capacity challenges will further exacerbate the issues compounded by lack of human resources to promote sustainability in logistics management and procurement. A lack of skilled personnel creates constraints in their ability to understand policies and strategies, as well as their capacity to navigate institution-level capacity challenges (e.g., outdated practices hindering procurement efficiency, and ability to navigate bureaucracy). The more comprehensive the responses to these challenges, the better they will address structural challenges and facilitate collaborative efforts among stakeholders to mitigate complexity (Grimm & Reineke, 2024).

In summary, this study has reviewed the interconnected political, economic, and social factors that shape logistics and procurement for South Sudan. To enhance sustainable and resilient practices in procurement and logistics, while strengthening national stability and growth, it is vital to both recognize and act on these issues.

1.2 Statement of the Problem

The elaboration of the problem statement further communicates the substantive issues and challenges of sustainable logistics and procurement for South Sudan. logistical and procurement issues that arise from the natural environment are primarily contextualized in the political disturbance and the conflict, and with the absence of effective governance institutions. Such environmental challenges create the appearance of impossibility to overcome the hurdles to sustainability due to the socio-political context. Productive environments are riddled with uncertainty and risk aversion, as the resources for stability and growth become less and less available. The severely poor infrastructure further affects the lives of those who are legitimately trying to engage in procurement and logistics and provides challenges in the movement of goods and services across the country, especially in rural and periphery regions, and where road networks are poor or power supply cannot be maintained. Barriers such as limitations in institutional capacities and a lack of trained personnel present in both public and private settings further complicate the operational capacity to implement stable, viable, and sustainable policy and strategic directions to accomplish appropriate

sustainability. The presence of incompetent and corrupt public institutions, and with less accountability and transparency within its public agency procurement system, also worsen the misallocation of resources, discouraging investment from new donors and investors supporting opportunities for sustainable development programming. Our response should include options to strengthen and enhance the governance and institutional shortcomings, invest in infrastructure and capacity-building programming, and promote partnerships and collaboration among stakeholders/collaborators, and invest in technology and innovation. Together, with combined action and commitment from all involved, South Sudan can confront these difficult issues and realize their potential for economic growth and development, while establishing a stronger and more accountable ecology of supply chains.

1.3 Research Objectives

1. To explore and assess the important factors driving sustainable procurement and logistics practices in South Sudan's public and private sectors.
2. To evaluate the impact of political instability and conflict on sustainable procurement and logistics practices in South Sudan's public and private sectors.
3. To investigate the role of infrastructure development in promoting sustainable procurement and logistics in South Sudan.
4. To develop viable recommendations which will help solve the challenges and ensure sustainability of procurement and logistics practices in South Sudan.

1.4 Significance of the Study

The importance of this study lies in its potential to support the regional socioeconomic development and sustainability of South Sudan. This research aims to provide further evidence to aid in the formation of policies and initiatives that seek to increase efficiencies in the supply chain, reduce waste, and be socially and environmentally responsible by identifying opportunities and vulnerabilities in the implementation of sustainable procurement and logistics practices. This study and associated recommendations will also focus on increasing companies' abilities to respond to the challenges presented by a complex

and dynamic market, through better business practices and models, via a systems-based and iterative methodologies. This research will enhance the long-term welfare and resilience of South Sudan, in part, by assuring procurement and logistics sustainability.

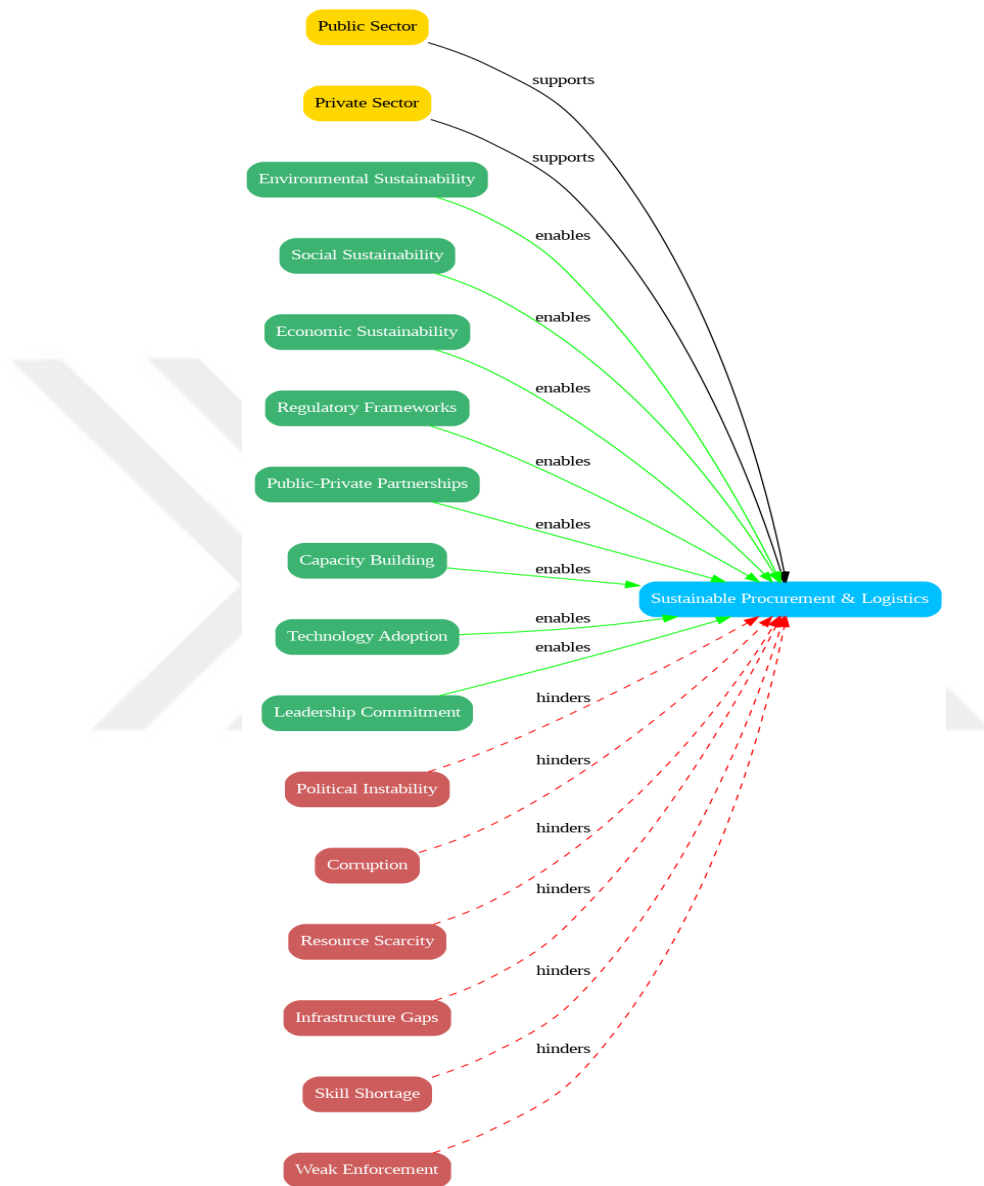
1.5 Scope of the Study

This study encompasses an examination of the sociopolitical, economic, and environmental challenges affecting sustainable logistics and procurement in both the public and private sectors of South Sudan. The study will focus on the understanding of the sociopolitical, economic, and environmental challenges facing logistics and procurement within South Sudan. This analysis will specifically include issues of governance structures, capacities, instability, and conflict. The study will be qualitative, and data will be obtained from interviews with key stakeholders, case studies, and literature. Although this study is focused primarily on South Sudan, it may be possible to draw comparisons on challenges with other countries that are similarly troubled by issues of procurement and logistics sustainability, to put South Sudan's situation in a wider context.

1.6 Limitations of the Study

Although the study is valuable, it will likely have many limitations that may restrict the scope of the study and the generalizable nature of the findings. Due to the changing political and socio-economic context in South Sudan, the findings from the study will be subject to a changing context over time. The consistency and availability of data, particularly in war affected areas, may also raise issues of reliability and validity. Evidence in South Sudan may also be limited because of certain resource limitations, such as funding, time, and access to key informants and other stakeholders. In conclusion, although every attempt will be made to ensure a representative sample across all sectors and geographic locations in South Sudan, there may not be applicability of the final report and findings. However, based on the limitations outlined above, we will do our utmost to provide relevant observations and recommendations that may inform sustainability in procurement and logistics in South Sudan.

Figure: Conceptual framework



1.7 Theoretical Background

In this chapter, the author has critically examined the theoretical background and bases of the study on sustainable procurement and logistics in South Sudan. A sound understanding

of these theories is also necessary since the study is aimed at clarifying the issues and complexities that are faced by the country, especially the aspect of sustainability.

Resource-Based View (RBV) Theory

Based on the normative orientation of the Resource-Based View (RBV), companies can create sustainable competitive advantage using the available resources and capabilities. These resources include the physical facilities, which are tangible, and the human resource and cumulative experience in technology and skills, which are intangible to the firms, thus the ability to beat competition. The specific aspect of defining the organizational differences is the particular arrangement of these resources (Ferreira and Ferreira, 2025).

The applicability of RBV is especially high in the context similar to the one in South Sudan, where businesses and state agencies develop and execute policies in the background of strong resource constraints. In the case of a private firm that is in this environment, RBV provides a feasible framework; it allows applying sustainable practices and utilizing a more strategic approach to procurement and, thus, enabling reaching larger results with minimal resources even in case of significant challenges.

Institutional theory

Institutional theory examines how organizations do not function in a vacuum and are heavily influenced by the larger context in which organizations exist. Norms within society, expectations of the culture, and regulations imposed from government all affect how businesses and institutions act. As noted by Udeh et al. (2024), firms do not operate in a vacuum; they must constantly respond to the expectations and pressures of their contexts. In a context like South Sudan, where weak governance and political instability are the default position, this theory elucidates why sustainable procurement can be an extremely challenging barrier. Firms in this context are facing challenges that are not simply related to the logistics; firms must also combat a system that is not set-up to support sustained eco-friendly

initiatives. Institutional theory would view these barriers as an investigation of the sociopolitical system that supports or obstructs progress.

Stakeholder theory

Stakeholder theory underscores that sustainability is not an individual endeavor; it is a collective undertaking. Non-governmental organizations, business, and government all play critical roles in creating genuine change. As Liu et al. (2024) suggest, organizations can only achieve meaningful and sustainable outcomes when they listen to and partner with their numerous stakeholders.

This is particularly relevant in South Sudan, where our work reveals that public-private partnerships have been making a measurable difference. When diverse stakeholders come together, sharing knowledge, resources, and solutions, they do not only facilitate more effective ways of engaging with sustainability challenges, but they also create opportunities that would not have otherwise existed.

Triple bottom line (TBL) framework

The concept of the Triple Bottom Line (TBL) reshapes the way we consider success for a business. Success is more than just financial gain; it is truly sustainable when economic, environmental, and social aspects are considered equally. According to Aboug (2024), companies need to analyze their impact on people, and the planet, with the same seriousness with which they analyze their financial results.

The TBL framework is particularly helpful in analyzing procurement in South Sudan, where there are clear and troubling gaps in economic fairness. The TBL framework leads us to ask the right questions about whether our purchasing practices create jobs and opportunities for local communities; whether purchasing practices reduce harm to the environment, whether financial cost is still a consideration. Considering all three factors together, we can engage in

procurement processes that will create value in South Sudan, and begin to address the challenge of inequality.

Supply chain resilience theory

The concept of supply chain resilience theory emphasizes that a supply chain's capacity to adjust to disruptions such as conflict and inadequate infrastructure is crucial for maintaining resilience. Waqar et al. (2025) describe resilience as the capability of operations to persist despite facing difficulties. In South Sudan, logistics networks frequently encounter numerous obstacles, including subpar infrastructure and political instability. Given the distinctive and unpredictable environment of South Sudan, supply chain resilience theory aims to underscore the pressing necessity for continual enhancement of resilience in supply chains, particularly in procurement and logistics, to ensure sustainable operational practices. Furthermore, supply chain resilience addresses the significant challenges organizations face in South Sudan as highlighted through this research.

This study seeks to elucidate issues related to possible sustainable procurement or logistics methods in South Sudan, while also aiming to tackle the specific challenges prevalent in this area, which are linked to its socio-political circumstances. This section outlines the theoretical foundation for the research on sustainable procurement and logistics in South Sudan and introduces another theoretical perspective that can contribute to a more integrated understanding of the complexities involved in sustainable procurement and logistics in the region. Related to the study of sustainable procurement and logistics, this research study seeks to draw upon the theories that have been outlined (Resource-Based View (RBV), institutional theory, stakeholder theory, Triple Bottom Line (TBL), supply chain resilience theory), to establish a more integrated understanding of the multi-layered structures and dependencies of sustainability within public and private sector sustainability within South Sudan. Each theory will be considered, specifically in relation to each theory's relevance connected to South Sudan, particularly how the theories can contribute to strategies to address challenges like weak political stability, infrastructural weakness, a resource-poor

supply base, a resource-dependent public and private sector, and scarcity in human development.

1. Systems theory

Systems theory conceptualizes organizations and their supply chains as interconnected systems. Each interconnected system consists of interdependent components that are connected by processes, logistics pathways, governance systems, and ultimately, social values and behaviors that affect one another and change as they interact. Systems are dynamic by nature, and thus a change (or failure) in any one component, be it a conflict-related barrier, or a simple change in how something is procured, will have an effect on the entire system resulting in ineffectiveness, inefficiencies, or systemic failure. In South Sudan, procurement and logistics systems will, by definition, be interwoven into weak governance systems, poor infrastructure, and socio-economic constraints relative to human capital that is severely underdeveloped. Systems theory provides an explanation for why holistically these systems need to be adaptable. An example, a failure of a road would not only delay goods being delivered but would also disrupt an established supplier relationship, a public service relationship of the organization, or affect some larger economic concern.

Systems theory can be viewed as complementary to resilience theory in that systems should be resilient by design, but rely upon self-regulation and adaptability. Engaging local suppliers in procurement systems can stabilize systems since these systems will not be completely reliant upon external supply chains that may be susceptible to volatility. Systems theory enables policymakers to map relationships, including the relationships between regulatory enforcement, private sector capacity, and relationship to community engagement when establishing procurement systems which are stable and responsive to systemic shocks.

2. Contingency theory

The contingency theory asserts that there are no management solutions for organizations that can simply be transposed to another location—an organization must respond to the particular

contingent context, including environmental, organizational, and socio-political contexts. The contingency theory is especially pertinent in South Sudan due to the varying paradigms of governance—political instability, poorly constructed institutional arrangements, and lack of efficient infrastructure. In some settings, organizations may follow "off-the-shelf" approaches to procurement, but in South Sudan organizations need responses that are specific for their context; they must be reflective of the instability in their context and the politics. For instance, while global best practice might advocate the use of digital procurement platforms, in South Sudan procurement organizations often do not have reliable electricity and finance and procurement practitioners are digitally illiterate and so would not be able to use the platform. They could, however, use a hybrid approach, incorporating digital procurement plus manual processes.

Beyond the contingency theory, it is also situated with an institutional theory perspective to demonstrate how the external demands of a weak governance structure or the expectations of donors, influence the behaviors of organizations. In seeking to embrace sustainability within the procurement practice, it is the principles that will need to be adaptive to local constraints (e.g. corruption or on-going conflict), even when the organization is addressing the challenge of a global environmental agenda; this is most evident in conflict areas, whereby organizations may consider local sourcing or purchasing from a local or regional supplier as opposed taking solely account for a defined sustainability assessment. Adapting an intervention for the specific socio-political and economic context of South Sudan offers a potential lever for building viable, pragmatic, and adaptive procurement practices.

3. Diffusion of Innovation theory

The Diffusion of Innovation Theory aims to explain how new concepts, technologies, or practices, including sustainable procurement or digital tracking systems, are diffused among a population or organizations. The elements of the diffusion process include the characteristics of the innovation, the communication channels, the social system, and time. The diffusion of sustainable procurement in South Sudan has stalled due to poor awareness,

lack of technological infrastructure and also inertia driven by traditional and established practices. As an example, implementing blockchain technology for accountability in procurement is challenged by low digital infrastructure and limited capacity to provide training.

This theory complements stakeholder theory in this study as it speaks to a number of potential actors (government, firms, NGOs, and communities) that can either facilitate or block the adoption and diffusion of innovation. Many of the international donor agencies and NGOs operating in South Sudan can be seen as "early adopters" of sustainable practices; however, more often than not, adoption is dampened by acceptance of specialization and local resistance. In order to stimulate diffusion of innovation, policymakers can focus on "opinion leaders" within the targeted community or organization and help develop them into champions of sustainable practices and agents of change, contributing to faster diffusion of an innovation. Training and awareness programs can also be useful in establishing and improving communication channels, which may reduce the barriers to the adoption and diffusion of innovation, improve demand for sustainable procurement practices and encourage uptake of actors in the procurement ecosystem within South Sudan.

4. Institutional Isomorphism

Institutional Isomorphism is a theoretical landscape that provides insight into why organizations that operate in similar environments take on similar structures, practices or behaviors because of coercive, mimetic or normative pressures. Coercive pressures are applied through international donors or global sustainability standards that require the adoption of green procurement management practices. Mimetic pressures emerge when organizations replicate or copy practices of peer organizations, or from existing organizations that are well-established or defended in the region; for example, East African organizations that have adopted and successfully implemented green procurement practices, and thus mitigated uncertainties. Normative pressures can develop through professional norms,

conventions, or expectations that are successfully adopted; for instance, procurement training and professional associations influence normative pressures in procurement.

However, the uncertain regulatory context in South Sudan confers limited coercive isomorphism, where even legal boundaries are not enforced consistently or reliably in South Sudan; that is, there is limited control for pressure that can be exerted by legal imposition. Mimetic isomorphism dominates in South Sudan when organizations mimic donor advocated efforts, or in some cases the most stable organizations in bordering regions but fail to understand the relevance of application. This theoretical model builds onto Institutional Theory but provides additional clarity regarding the external structures that function like institutional governance that allowed for cooptation of consistent practices, while directing further attention to the limited opportunities to engage in mere compliance of practices, where the practices only serve as a measure of donor advocacy in the absence of reference to lived experience. If the purpose is to become more resistant to such trends in governance, then South Sudan's procurement policy must, on one hand, build procurement policy that is engaged with the relevant community or context while, on the other hand, draw on international lenses to utilize that engage the institutional capacity of the community.

5. Public value theory

The Public Value Theory posits that public organizations should generate value for society, rather than simply pursue efficiencies and cost savings. Within the public sector of South Sudan, sustainable procurement should not only utilize resources in an efficient way, but also seek social equity, environmental performance, and importantly, community trust in governance.

For instance, creating opportunities for local suppliers or women businesses may take into account the expectations of social stakeholders, while generating economic opportunities (directly or indirectly) for marginalized communities that procurement is designed to serve, rather than only focus on efficiencies or cost savings.

In the South Sudanese context, we may need to reframe the procurement process to embed issues around social inclusivity. The Theory of Public Value complements the TBL framework, adding to the dimensions of value to the economic and environmental aspects of TBL, as well as articulating the social aspect of value. The theory of Public Value offers justification in South Sudan in areas where the confidence of the general public has been undermined by perceptions of widespread corruption and ongoing conflict to negotiate a credible, inclusive and transparent procurement process, to improve or rebuild public confidence and legitimacy in public institutions.

In these examples, public sector procurement that seeks to include communities and embeds sustainability initiatives may genuinely deliver visible public value such as sustainable jobs or reduced depletion of resources. Securing public support beyond the procurement process and, through public sector sustainability initiatives, has the potential to foster greater citizen confidence and public value in these sustainability initiatives.

Integrating other theoretical frameworks

We can also extend our theoretical frameworks (RBV, Institutional, Stakeholder, TBL, and Supply Chain Resilience) with other theories, which offer a multi-dimensional model in the analysis of sustainable procurement and logistics in South Sudan:

Systems theory and supply chain resilience theory share the concept of resilience, but conceptually the two theories vary in one essential aspect. Systems Theory draws attention to interconnectedness and managing the impacts of complex systems. Supply Chain Resilience Theory emphasizes on the organization and its ability to adapt to shocks from environmental or political developments. Together, both of these systems theories articulate procurement systems built for adaptation and systems thinking in collaboration to face political shocks and environmental vulnerabilities associated with fragile contexts like South Sudan.

Contingency theory and institutional theory are not contradictory but are ways to address context from two different points of view. While Contingency Theory is concerned with the environment in which specific strategies are conceived, Institutional Theory considers how external influences shape organizational behavior. For example, in the context of South Sudan, where the institutional context is weak and socio-political context is excluded, a “one-size-fits-all” procurement strategy would not be a concept. These two explanatory theories serve as a pathway for designing procurement policies and practices relevant to the context.

Diffusion of innovation theory and stakeholder theory both highlight the value of stakeholder involvement to facilitate change. Diffusion of Innovation Theory presents the strategies of successful adoption and spread of sustainable practices whereas Stakeholder Theory expands discussion to incorporate various actors who can collaborate to reach a common objective. These theories have prospects of empowering the collective engagement and promoting better practices of procuring and maintaining the business in South Sudan by seeking stakeholder engagement in specific ways.

Institutional isomorphism and institutional theory have an affinity for one another. Institutional isomorphism extends and contextualizes institutional theory in exploring the forces associated with three broad processes (i.e. coercive, mimetic, normative) that shape organizational actions, goals, and objectives. This perspective provides policymakers and practitioners the opportunity to consider the influences of international forces while understanding the inadequacies and inconsistencies of institutions in South Sudan.

Public value theory and the TBL framework are not in conflict with each other. Public Value Theory is introduced in this study, so that to underline the key role of social and environmental value and economic value. It supports the notion that the procurement process in the public sector must be used in the common good, specifically, in restoring trust in the state and instilling in the society trust in South Sudan.

Application to South Sudan practice

Ultimately, these theories offer a fertile, multi-dimensional lens for framing and engaging on the challenges of developing sustainable procurement and logistics practices in South Sudan based on a multi-theoretical sustainability framework. Systems Theory indicates that integrated responses involve treating the interconnectedness of governance, infrastructure, technical, contextual, and social systems as a whole. Contingency Theory proposes adaptive strategic procurement and hybrid approaches as part of the procurement systems processes. Diffusion of Innovation Theory stimulates uniquely local responses to sustainability practice; institutional isomorphism considers the donor influence, and towns need to find common standards of rationales relevant locally, allied to the accountability towards the local communities and stakeholders. Public Value Theory offers a rationale for building procurement processes that seek social inclusion and re-constructed public trust in the institutions of South Sudan.

Providing by using a multi-theoretic, multi-pronged approach such as outlined in this project, provides a strong basis of understanding the interlocked, multifaceted, sustainable procurement and logistics practices in complex systems that is unique and thus develop changing systems in South Sudan. The utilization of a multi-theory approach signals the issues of sustainable procurement, and shows the way to develop sustainable, resilient, adaptive, inclusive systems to create the conditions for real change in complex systems context.

2. LITERATURE REVIEW

Green procurement and green logistics are now essential pillars in spurring economic, environmental and social development of the world. However, the application of these principles in weak and post-conflict states, including South Sudan is less and is hardly studied. In this literature review, the global, regional, and local approaches to the green

procurement and green logistics have been critically reviewing the literature with reference to gaps, contradictions, and limitations of the existing body of literature.

The recent global literature on sustainable procurement and logistics has developed beyond the scope of a technical and managerial perspective to the inclusion of social-political, environmental, and institutional concerns. This change understands that procurement systems in post-conflict and weak states such as South Sudan are in extreme environments, where procurement processes are highly affected by the political environment, lack of resources and system failure. Sustainability models and governance structures are required; however, they need to be incorporated in a way that will not result in cosmetic or momentary success.

The localization of procurement has been one of the key areas of literature focus. As emphasized by both researchers and practitioners, there is a strategic value to working with local suppliers, especially in times of conflict or monetary shocks. Local suppliers stimulate local economies and create jobs, while also reducing the carbon footprint through the reduction of transportation needs and increasing supply chain resiliency through less reliance on a network that experiences frequent changes. Meanwhile, institutional factors, including lack of goods, difficulty of getting funds, and low-quality services hamper the expansion of localization in such nations as South Sudan.

Another important area is inclusive procurement which focuses on how gender, youth and marginalized groups participate in procurement ecosystems. In Sub-Saharan Africa, research on policy implications of gender and youth on success or failure of businesses demonstrates that policies that incorporate gender and youth like quotas or capacity building of women-owned businesses have some positive effects on overall development outcomes. Nevertheless, such policies are usually hampered by cultural barriers as well as institutional inertia which reduces the sustainability of such policies. In South Sudan, women's involvement on the supply side is inhibited by the cultural demands, confined roles and status as well as institutionalized barriers. The international donors and development partners also

argue out their role. Although the donor agencies may trigger reform, as they tend to attach conditions of sustainability or create parallel systems, the methods do not necessarily develop a sustainable institutional capacity. Procurement led by donors may unintentionally establish parallel institutions from lack of strong ownership by the locals at the expense of the national systems.

Technological innovations are increasingly featured in the sustainable procurement literature. Technologies include blockchain technology, digitized vendor databases, e-Procurement, and remote tracking of goods, and other technologies that enhance transparency, accountability, and efficiency. Nevertheless, in fragile states, such as South Sudan, challenges lie in low digital infrastructure, unreliable internet connectivity, and inadequate digital literacy. Thus, scholars advise on piloting technology through a hybrid strategy addressing both low-tech and high-tech solutions, to support more effectively embed digital culture in low-regulation contexts.

Environmental sustainability is likewise prevalent in procurement and logistics. For example, when regions experience frequent climate shocks, such as South Sudan with recurring droughts, floods, and deforestation, environmental sustainability can be either incentivized or negatively impacted through procurement decisions. Some recent literature endorses greater integration of environmental criteria in supplier selection and material sources and logistics planning. Green procurement strategies, including renewable materials sourcing, or low-emissions transportation provide social, environmental and operational benefits while increasing the resilience of the supply chain to the impacts of climate disruptions.

One notable gap in the literature is the absence of longitudinal data from fragile environments. Although there are numerous studies assessing sustainability activities, they are often in the early development stage and do not follow up on the logistics of a situation in the future. This is particularly relevant for South Sudan which may be able to sustain or repurpose sustainability across political, funding, and security circumstances. Some authors

note that longitudinal monitoring and evaluation systems need to capture both outcomes and the enablers of sustained procurement reform.

Analyses of regional literature, particularly from East African countries like Kenya, Uganda, and Rwanda, provide valuable and relevant insights for South Sudan. For example, research on procurement integration under the African Continental Free Trade Area (AfCFTA) shows how regional policies seek to harmonize practices, reduce friction across borders, and mitigate environmental threats. Conversely, countries with weak regulatory regimes have little to gain from this type of procurement framework, most notably South Sudan, unless there is firm commitment to reform at the national level and bolster institutions.

Sustainability in emergency procurement is an emerging trend too. Traditionally, emergency logistics focus on speed and cost, regardless of whether it is flood, conflict, or pandemic-related emergency procurement. In recent studies, sustainability has increasingly been presented as a key element of emergency procurement, particularly through coordination of flexible sourcing, local sourcing and partnership, and green logistics. Given the intellectual crisis in South Sudan, where humanitarian assistance requires an active supply chain, lessons learned here can inform frameworks of "development-compatible" emergency procurement in South Sudan.

All of these literature discussions can reinforce developing adaptive, inclusive, and context-based procurement and logistics systems. In South Sudan, best practices established globally must be filtered, consciously adapted, and harmonized within the context of political fragility, institutional capacity, and community engagement. Notably, sustainable procurement and logistics are not merely compliance or efficiency tools; they are indirect levers for equity, resiliency, environmental protection, and sustainable development.

Prior studies typically frame sustainable procurement in the context of broad issues, for example, supporting environmental sustainability, governance, and stakeholder engagement (Singh et al., 2024). While informative, studies that incorporate these key factors often fail to contextualize procurement for uncertain, resource-poor environments such as South

Sudan. Literature from the region (Onukwulu et al., 2025) highlights infrastructure and trade integration; however, sociopolitical instability and institutional weakness are rarely addressed, let alone examined for their implications.

In terms of theory, few models and research papers consider human and structural aspects of sustainable procurement systems. Stakeholder theory, as well as the institutional model, are mentioned in articles, however, neither of these theories are recognized and acknowledged as inadequate and critically analyzed. As a result, theory remains scattered and lacks coherence.

Unlike literature reviews that primarily aggregate, this literature review contributes critical assessments of articles, and identifies methodological, sampling, and contextual inadequacies. For instance, Paraskeva and Tsoulfas (2025) present strong environmental analysis, but fail to address governance limitations that matter in fragile settings. On the other hand, Deivendra and Edirisinghe focus on the socio-cultural implications, but fail to address operational constraints that are relevant, including the lack of logistical infrastructure.

In order to fill the gaps left by an examination of articles that were published after 2022 ideology towards something less static, the review includes articles published more recently. These articles reinterpret sustainable procurement as both an institutional problem, as well as a governance problem, especially in areas affected by conflict.

In summary, this literature review demonstrates that engaged, context-based, theory-informed research is required to generate policy and practice implications for sustainable procurement and logistics systems in ex-ante conflict and post-conflict settings.

2.1 Global Factors

International research in sustainable logistics and procurement, particularly in the Global North context has emphasized the role of regulation, technology, and cross-sector collaboration to support sustainability aims/ objectives. For instance, Thelma et al. (2024)

reference the potential of multi-stakeholder collaborations but do not assess their relevance in unstable contexts like South Sudan. In addition, while Vangeri et al. (2024) offer a significant technological lens - stressing innovations like IoT and AI - they then do not reflect on whether political instability or institutional weakness are barriers to adoption in fragile economies. Likewise, recent work by Wanyama et al. (2025) and Maysoon (2024) have demonstrated how sustainability practices are shifting in the post-COVID-19 era, specifically the increasing pressure to develop supply chain resilience. However, their work is largely developed-world oriented and therefore will have limited applicability in contexts or countries with underdeveloped infrastructures.

More importantly, much of the international literature assumes that, at a minimum, a regulatory enabled, consistent benchmark. However, South Sudan has neither of these conditions. Therefore, in considering the relevance of international frameworks, we must also assess its practicality relative to local realities which include conflict, corruption, and declining institutions.

2.2 Regional Factors (East Africa)

Research specific to the East African region, similarly, place important attention on infrastructure development and trade integration as key drivers of sustainable procurement. Gonçalves et al. (2024) and Fredson et al. (2025), for example, praise both the East African Community (EAC) and the African Continental Free Trade Area (AfCFTA) for their efforts to align trade policies and reduce logistical barriers. While these articles provide valuable insight, the studies' analysis of intra-regional disparities and implementation problems, such as tolerations of lax border processes and bureaucratic inertia, is somewhat limited.

More recent research, for instance, Fredson et al. (2025), expands on regional analysis by offering a more localized account of regional policy's uneven impact by noting that countries, like South Sudan, continue to lag behind other member states due to an underdevelopment in infrastructure and regulatory institutions. Nonetheless, these qualitative perspectives are more of an exception than a rule throughout body of the literature.

The other major theme running throughout the body of literature is invested into human capital with capacity building highlighted in the texts of World Bank Group (2020) and the United Nations Economic Commission for Africa (2019). Nevertheless, these human capital studies predominantly ignore the socio-political factors discouraging talent retention in post-conflict countries.

In sum, while regional literature offers a macro view of East African development, it does not substantively engage with specific constraints for countries, like South Sudan, such as governance, stability of financial institutions, and skills availability.

2.3 Local Factors (South Sudan)

Scholarly attention examines the intersection of political, economic, and environmental instability as critical barriers to sustainability. For instance, Müller and Schurr (2016) address how political conflict complicates institutional frameworks, but do not suggest many, if any, pathways forward. Even though Mutuku and Mbatia (2020) primarily focus on economic difficulties, there is no consideration of environmental factors into the discussion. More analytically advanced and critical publications such as Bucos (2024) analyzes why green logistics have not been more fully embraced and find that investment and capacity were barriers, and Jones (2024) addresses social exclusion from procurement specifically for women. These papers do allow for some new thinking, but they are two alone, more or less examples, and miss or account for a systems level approach. The literature tends to undercut the role of international donors. The UNDP (2022) does original donor data tracking donations, but very few short-term assessments of sustainability or ownership of those approaches. Similarly, Al Mokdad (2025) has studies on international donor training interventions to public servants, which is a significant barrier not addressed with any depth in the domestic conversation. Finally, although there is more information base, it remains very limited, to have any real critique of how socio-political vulnerability impacts transferring even regionally, tried solutions. The sustainable procurement practices and the sustainable logistics practice in South Sudan are not generated from one source but are

generated out from an amalgamation of international, regional, and entrenched local barriers. Evidence of these changes is on the international ladder, where sustainability as well as the UN Sustainable Development Goals (SDGs) and tools for accountability of consumerism, have created very different expectations about how supply chains should and will look. For instance, research on digitization challenges in the supply chain by Jones (2024), illustrate promise in digitization, and sustainability certifications, however the templates, or models he looked at, almost completely take stable institutional conditions and capital in the assumption and that we are a world away from South Sudan. At the regional level, integration initiatives such as the East African Community (EAC) and African Continental Free Trade Area (AfCFTA) might assist in harmonizing procurement regulations and facilitate intra-African regional trade and investment into infrastructure, but an extensive review showed that the baskets of benefits are often systematically poor, and South Sudan does not draw benefit from any of those benefits based on the existence of poor governance systems and enforcement bodies, and just on ways that market systems are emerging. To add to this, the excitement about regionalism misses the huge gap between policy and practice in terms of operationalizing policy and implementation in states which have emerged from conflict.

South Sudan, in terms of socio-economic context and regional dynamics, faces unstable political conditions, an economy reliant on aid, damaged infrastructure, and environmental degradation. Akuel (2024) and Onukwulu et al. (2025) have detailed how entrenched cultural practices, and fragmented institutional capabilities exacerbate these conditions. However, the majority of local studies which identify problems do not attempt to recommend solutions, develop a framework to develop indigenous sustainable procurement, or develop a convincing model to develop sustainable procurement in the local context. There is little or no translational framework or process of development to provide different options that are flexible and context-specific while linking global initiatives with local realities in South Sudan. A more cohesive research agenda and organization is needed to provide a process that connects policy analysis, supply chain science, and practice community-based strategies. For example, the research literature often emphasizes a common topic of capacity building;

however, it needs to be about more than organizing a workshop. There are broader notions of restructuring institutions and development of locally-based content, but most importantly, empowerment of informal supply chain actors, who have valuable knowledge and experience in doing things outside of the formal supply chain by instinct.

It is paramount to transition out of a global top-down approach in developing a meaningful action plan for sustainable procurement in South Sudan to one that includes indigenous knowledge systems, participatory development, and resilience in both private and public sectors. Achieving this will necessitate the establishment of cooperative governance structures to connect civil society, the private sector, and funding scenarios developing co-created frameworks that will be scalable but grounded in the socio-economic and political context of South Sudan. Ultimately, advancing sustainable procurement and logistics in South Sudan is much deeper than the technical aspects of the procurement or logistics processes, it involves understanding the political dynamics, the underlying economic considerations, and cultural considerations that impact procurement. Sustainable procurement in South Sudan requires a holistic and critically reflective process; to institutionalize the current practice of sustainable procurement while addressing sustainability there needs further structural reform, given barriers that exist like corruption, lack of enforcement, and social inequity. Addressing the systematic barriers to sustainable procurement in South Sudan needs to be approached in a systematic manner, using the proliferation of appropriate policy frameworks and creating multilevel action which would suggest that South Sudan could begin to imagine a pathway of transformation in its procurement systems to support sustainable and inclusive development.

3. METHODOLOGY

3.1 Research Design

In this research, the descriptive research design was employed as the study aimed at examining the various factors affecting sustainable logistics and procurement within the

government and private sector of South Sudan. Descriptive studies were applicable as they helped in the cautious consideration of the sustainability condition of the logistics and procurement practices. The research enabled the researcher to collect a combined total of data on the variables to give an account of existing practices and issues.

One benefit of the descriptive research design is the approach of reporting patterns and trends in a study and taking a snapshot of the current state. Descriptive research design does not change the variables but describes and characterizes the focus of the study. The study was descriptive research design throughout to enhance understanding of the varying components of sustainable procurement and logistics in South Sudan's private and public sectors.

3.2 Data Collection Methods

3.2.1 Primary data collection

A structured questionnaire was used as the main data to this study. The developed open-ended questionnaire was specifically structured to fit into the research objectives and bring out the pertinent information. The questionnaire passed through various phases to make the questions clear, relevant as well as comprehensive.

Knowledge: Questionnaire Design and Structure:

Demographic Information:

Approximately balanced proportion of age and gender groups.

Demographics Questions:

Age: 18-25, 26-35, 36-45, 46-55, and 56 and over. Categories allowed analyzing the respondents and any effect of their age on the research questions.

Gender: Male and Female.

Industry: public and private. Also, this is significant when looking at practices and barriers in various industries.

Experience: contained five categories namely less than a year, 1-3 years, 4-6 years, 7-10 year and over ten years. This variable would enable to look into the possible impacts of experience on attitudes and behaviors as far as sustainable procurement and sustainable logistics were concerned.

Areas to Make When discussing Sustainable Procurement and Logistics:

Purpose: To find out the factors that impact on the uptake and adoption of the sustainable initiatives.

Questions Included:

All the possible sustained procurement practices in an organization will be rated on a Likert score of Strongly Disagree to Strongly Agree.

Environmental Issues: Likert scale questions that will be asked are how much of the environmental issues are considered in the buying decisions.

Social Issues: questions were asked on how much of the social responsibility process is being a part of procurement process.

Resource Constraints: items that evaluate the effect of the perception of human, financial, and other resources to serve as a barrier to the persistence of practices.

Political Instability: inquiries regarding the impact of political conditions on the logistics and procurement procedures.

Challenges with the Sustainable Procurement and Logistics:

Objective: To find out certain issues which act as an obstacle to sustainable practices.

Questions Included:

Corruption: Likert scale questions regarding the impact of corruption within the government agencies on the accountability and transparency in procurement.

Infrastructure Problems: items that evaluate the impact of the unavailability of infrastructure on the capability of executing the delivery of products and services on time.

Shortage of Skilled Workers: questions that measure the supply of workers as they concern skilled workers in green logistics and procurement.

Conflict: The effects of conflict situations on the logistics and procurement procedures Demotion.

How to prevent the challenges, and to guide towards sustainability more effectively:

Purpose: To explore potential strategies and initiatives in order to mitigate the challenges and enable sustainability.

Questions Included:

Initiatives: inquiries concerning different activities, such as transparency activities, stakeholder working jointly, and education programs.

Assessment Methods: Questions covering the measurement of success of organization in sustainability projects.

Barriers: The barriers to realistic implementation of sustainable procurement practices such as governance hindrance and resource restraint.

Regulatory Measures: These questions are on the support of regulations toward sustainable practices.

Capacity-Building Programs: Fears regarding the worth and performance of training and development into sustainably environmental-responsible practices of procurement.

Questionnaire Administration:

The respondents were given the questionnaire to a population of 400 people who represented both the private and the public sectors. The questionnaire was handed out online to make it convenient to all people and easy to reach. Answering techniques: The respondents also received fully detailed directions on how to fill the questionnaire and assistance where necessary to alleviate any question.

3.2.2 Secondary data collection

In conjunction with gathering primary data, secondary data sources were evaluated to situate the findings obtained from primary data collection. This included systematic reading of government publications, academic articles/book chapters, and publications provided by the participating organizations associated with sustainable logistics and procurement approaches. Secondary data provided context for the triangulation of primary data, and the data collected for secondary data represented deeper context of the area under investigation.

Sources of Secondary Data:

- Academic literature: Such as research journals and academic articles published on logistics, sustainable procurement, and other related fields.
- Government reports: Publications and reports of the government of South Sudan on infrastructure development, economic conditions, and procurement policies.
- Organizational publications: Reports on sustainable development and procurement tactics by international organizations, trade associations, and non-governmental organizations.

Purpose of Review of Secondary Data:

- Triangulation: To situate the primary data's key findings in the larger context of recent research and reports.
- Validation: To triangulate primary data findings with previous research and patterns emerging from literature.
- Gap identification: To identify areas where the primary data may contribute to new insights or identify gaps in the evidence base.

3.2.3 Secondary data collection

In addition, and within the context of the primary research evidence, a comprehensive examination of secondary data sources was undertaken. This was a rigorous exercise across more than one type of authoritative source to ensure a robust foundation of theoretical and empirical evidence for the research. The bulk of this secondary research was published in peer-reviewed academic journals, with a specific focus on the last several years (2015-2023) of journal articles concerning sustainable procurement practice in developing economies and post-conflict states. Governmental reports such as policy briefs, other white papers, and the annual reports from the South Sudan Ministry of Finance and Economic Planning and the Ministry of Transport provided contextual institutional data regarding the contemporary state of procurement law and infrastructure development issues.

In addition, observational material from international institutions such as the World Bank, United Nations Development Programme (UNDP), and African Development Bank supported understanding of regional tendencies and comparative practice in sustainable logistics. Material from industry journals, for example, from the Chartered Institute of Procurement & Supply (CIPS) professional association publications, offered practical insights into implementation obstacles. This secondary analysis was important for three key functions:

1. cross validation of primary findings through triangulation,

2. Confirmation of consistencies or contradictions within previous research, and
3. To contextualize the specific procurement challenges in South Sudan within wider theoretical lenses of sustainable supply chain management.

Particular attention was paid to comparative research conducted in other East African countries in order to highlight broader regional similarities and specific differences of significance for sustainable procurement.

3.3 Data Sources

For methodical depth and contextual density, the research employed a comprehensive approach of data collection by combining primary and secondary data sources. A fully developed survey questionnaire was used to collect data from 400 respondents who were sampled from both the public and private sectors in South Sudan. The survey instrument was designed to produce qualitative and quantitative data while remaining close to the core research question. The questionnaire was subsequently pilot tested prior to actual implementation to fine-tune question wording and fully eliminate possible sources of confusion. Once finalized, the questionnaire was administered following standardized protocols by trained field interviewers to provide data validity at the point of data collection and to also be sensitive to regional differences regarding access and service infrastructure.

Alongside and in support of these findings, the research included a systematic review of secondary sources which collectively provided academic and applied knowledge on the topic of sustainable procurement. Peer-reviewed scholarly journals which discussed theoretical models and empirical case studies provided conceptual frameworks to help interpret the primary data – focusing specifically on studies emanating from developing economies in post-conflict environments. Likewise, country-based, official government reports and policy documents provided critical information about the institutional context and regulatory climate in South Sudan, and reports from international development organizations provided comparative data and regional benchmarks. Similarly, industry reports and professional

standards provided supplementary information about existing best practices and implementation challenges in the area of sustainable supply chain management.

The strategic use of these data sources collectively provided a robust evidentiary basis for the research. The primary data source provided direct, real-time evidence of the experiences and perceptions of stakeholders, while secondary data sources contextualized the findings in larger historical, theoretical and regional considerations. Thusly, this methodology was not only useful in validating findings relating to methodological triangulation; it also enabled a more nuanced analysis of both consistencies and discrepancies between realities observed on the ground and existing theoretical expectations. By providing exactly this balance between empirical rigor and theoretical breadth, the research methodology of the study resolved the complex balance of determinants regarding sustainable procurement in the unique context of the country.

In this regard, the combination of primary and secondary data sources was particularly useful for addressing constraints associated with single method research designs. While the quantitative data from the survey provided present-day precision regarding individual and organizational attitudes and behaviors, qualitative analysis of documents will allow the possibility of evaluating these systemic issues longitudinally and will also allow for comparisons with international best practices. As such, the multi-dimensional approach can lead to concluding arguments that are in the same breath rooted in the specifics of the context in South Sudan, while being analytically situated in larger discussions on sustainable development and sustainable supply chain management.

3.4 Sampling Techniques

The research adopted a stratified random sampling approach, which was helpful to establish a more impartial representation of procurement in South Sudan. The procurement practices of private and government contexts are manifests of structural variance, and it was reasonable to employ a sampling design framework that through informed stratification could situate the two contexts in question. For the sampling process, it would be prudent to identify

independently and create two mutually exclusive strata of the target population; specifically, the one that represented private sector procurement practitioners and the other representing public sector procurement practitioners. Each context claimed both operational restraints and recourse to regulation that was substantially distinct from each other in its entirety, and with organizational goals that varied substantially, justified the need for stratification. In developing pure sampling frames, possible participants could be identified in the two contexts using government directories, industry associations, and professional networks.

In order to mitigate selection bias and maximize the probability that those eligible would have an equal selection probability, random selection techniques would need to be used independently in each stratum. The sample chosen consisted of 400 individuals where, 300 were drawn from private sector procurement and 100 from public procurement. This ratio would allow for a sufficient draw from both industries and also account for the larger proportional size and greater variance in the private sector procurement population frame, in the ratio of 3 to 1 determined by the power analysis.

There are methodological advantages of a stratified research design. First, it provided sufficient representation conclusions to not yield categorizations of the private sector to the point of overshadowing the public sector. Second, it provided adequate sample sizes of valid statistical analyses of patterns within sector organizations, such as the absence of fashions and procedures. Third, by lessening sampling-error the overall estimates could be known with more validity by allocation of homogeneity.

Finally, to confirm the stratified samples selected represented substantive demographic and occupational characteristics of their respective population and to ensure the sampling strategy was valid, post-hoc analyses were performed. The analysis included the verification that each of the samples had representation of each of the sectors, across organizational size, industry location, and level of seniority. The final sample yielded a high degree of similarity to the population parameters which supported the validity of the conclusions drawn from the research.

3.5 Data Analysis Techniques

The data gleaned from the study's findings underwent a comprehensive quantitative analysis. The majority of analysis techniques utilize a quantitative approach, which allows researchers to quantify significant amounts of data to obtain objectively accurate as well as statistically valid and reliable results. The data analysis was conducted utilizing a well-renowned statistical computer software program (SPSS) known as Statistical Package for the Social Sciences, which allowed for a greater ability to conduct complex statistical procedures. SPSS was able to provide virtually unlimited analysis and interpretation options; thus, providing the richness of data analysis interpretation.

Descriptive statistical analyses were utilized to both summarize and describe the data sample and were the first step in the complete analysis procedure. The completion of the descriptive statistical analyses ultimately provided means, standard deviations, frequencies, and percentages. Descriptive statistical analyses enhanced the researcher's understanding of the sample characteristics as well as the distribution of responses across the provided variables. The descriptive statistical analyses also provided an indication of central tendencies and spread of responses across variables.

The researcher then moved to the use of inferential statistical procedures to support the research hypothesis and test and explore any possible association between the variables. To determine if there were any statistically significant differences in the respective variables, the researcher utilized t-tests to assess mean differences between two independent groups. The differences among more than two groups are completed with Analysis of Variance (ANOVA), which allows for a more expansive elaboration of the categorical independent variables influence on the continuous dependent variable.

In addition, a reliability analysis was accomplished to ensure trust in the reliability of the research questionnaires (the data collection tool). The researcher used Cronbach's alpha to assess if a number of the items in the questionnaire had internal consistency. Cronbach's alpha is a statistical coefficient that approximates the strength of the relationship of items in

a scale. A high Cronbach's Alpha, ultimately, will assist in obtaining reliability and consistency in the data collection tool indicating the items are pulling from the same resulting construct.

In summary, the combination of descriptive, inferential, and reliability analysis to offer a comprehensive strategy for data analysis, provide logical conclusions, and verify credibility and empirical support for the study findings.

3.6 Ethical Considerations

All relevant institutional and regulatory authorities were contacted for ethical clearance before obtaining data. This process had to happen in order to verify that the research activities had adhered to ethical guidelines and that all rights, privacy, and dignity of every individual who participated in this exercise were afforded. Ethical clearance involved scrutiny and approval, as ethical, of the tools used, research design, and methodology to ensure that there were minimal harms and maximal openness given to research participants.

Several key ethical principles guided the research process:

Informed Consent: All study participants were provided with comprehensive information outlining the nature, purpose, and methodology of the research before their participation. This contained details about their role, the fact that their participation was voluntary, the duration of the study, and their freedom to leave at any time without incurring any fees or negative consequences. Participants gave their verbal or written informed consent, indicating their voluntary consent to participate in the research, only after fully understanding this information.

Confidentiality and anonymity: At every stage of the study, participant privacy was protected. To ensure anonymity during data analysis and reporting, all identifying information was kept in the strictest of confidence. Identifiers were either removed or replaced with codes. To ensure that no individual participant could be identified, responses

from the participants were not linked to their identities, and results were presented in aggregate form.

Data security: Strict controls were in place to ensure the security and integrity of the data gathered. Data in both electronic and paper form was kept safe using password-protected databases and storage rooms that were kept locked. Data access was limited to the main research team and authorized staff. In addition, data storage and handling were subject to institutional and legal data protection requirements so that participant data was kept safe from unauthorized viewing, misuse, or loss.

By adhering to these ethical protocols, the research not only upheld the highest standards of integrity but also fostered trust between the researchers and participants, ultimately contributing to the credibility and validity of the study.

3.7 Validity and Reliability

To guarantee the questionnaire's validity, a pilot test was carried out using a small group of respondents to detect inconsistencies or ambiguities. Revisions were undertaken based on feedback. Reliability was evaluated through Cronbach's alpha to guarantee internal consistency.

3.8 Limitations

Even after the stringent approach, this research had the following limitations:

Sampling Bias: An attempt was made to prevent this by using stratified random sampling.

Respondent Bias: Respondents could have answered in socially desirable terms, which was noted in the analysis.

Generalizability: The results may not apply to the overall population of South Sudan. This was corrected by defining the scope and context of the study clearly.

3.9 Conclusion

This chapter provided the methodology for researching the determinants of sustainable procurement and logistics practices in South Sudan. Research design, methods of data collection, sampling methods, data analysis methods, ethical issues, validity and reliability procedures, and potential limitations were clearly outlined to ensure a strong and credible study.

4. DATA ANALYSIS AND FINDINGS

4.1 Overview

This chapter conducts a comprehensive analysis of the data collected from a joint sample of 400 participants who took part in the study, of which 100 participants belonged to the public sector, and 300 participants belonged from the private sector of South Sudan. The aim of conducting an analysis of the data is to ascertain insights into the major areas of sustainable procurement, and logistics practice in the overall public and private sector.

The analysis is structured in sections. Initially, a demographic profile of participants, including characteristics like age, gender, education level, years of work experience, and employer organization is presented. Demographic profiling is necessary to situate the answers to the survey questionnaire and to identify characteristics with respect the respondents' background.

Following, the chapter will analyze the responses to Likert-scale questions regarding attitudes, practices, and perceptions of sustainable logistics and procurement from the participants. In addition to qualitative information that will be provided about what participating members of the study think, a statistical overview of the responses will be summarized, with adequate and appropriate averages (means) and variability (standard deviation).

In summary this chapter, identifies and examines the dimensions that facilitate and limit sustainable logistics and other procurement practices that were present in the public and private sector. To assess if there are statistically significant perceptions and practices between the public and private sector an inferential statistical t-tests, and ANOVA are performed. While the results section presents the dimensions that facilitate and limit sustainability in logistics and procurement practice in South Sudan.

Overall, this chapter, provides a robust and evidence-based structure to examine the current state of sustainable logistics and procurement practice. Also, it serves as a lead into the discussion and recommendations that will be offered in the following chapters.

4.2 Demographic Information

4.2.1 Gender distribution

Males made up 92.25% of the 400 responders, while females made up 7.75%. This indicates that there are a lot of men working in logistics and procurement.

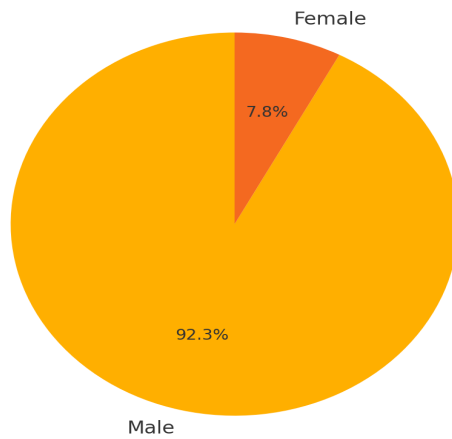
Table 4.1: Gender Distribution

Gender	Frequency	Percentage (%)
Male	369	92.25
Female	31	7.75

Out of the 400 respondents surveyed, a substantial majority, 92.25%, were male, while only 7.75% were female. This indicates a notable gender disparity in procurement and logistics roles, with men predominantly occupying these positions.

Figure 4.1: Gender Distribution (Pie Chart)

Figure 4.1: Gender Distribution



4.2.2 Age group

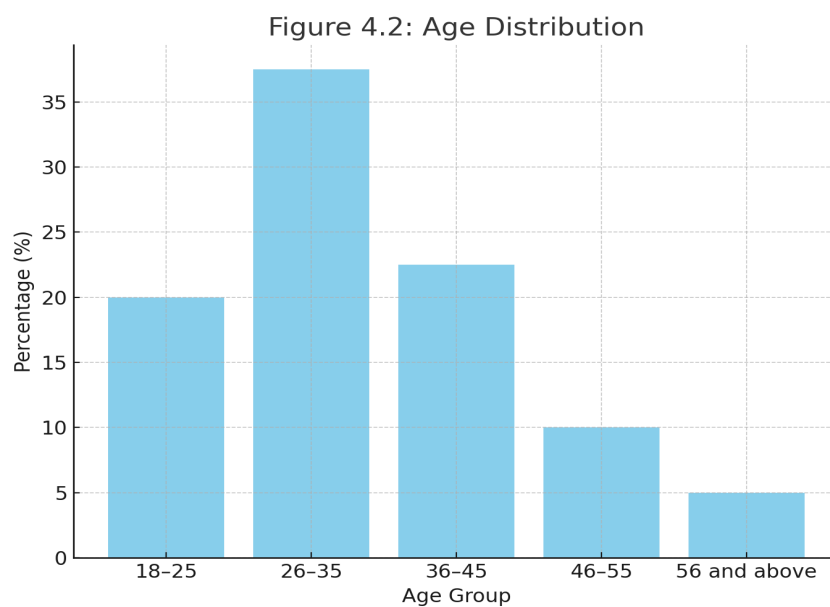
Respondents' age groups ranged from 18 to 55 years, with the highest representation (37.5%) in the 26-35 years category.

Table 4.2: Age Group Distribution

Age Group	Frequency	Percentage (%)
18–25	80	20.0
26–35	150	37.5
36–45	90	22.5
46–55	40	10.0
56 and above	20	5.0

The ages of the respondents span from 18 to over 56 years. Most respondents, 37.5%, were aged 26 to 35 years which indicates the most active working age population. The second largest group of respondents were aged 36 to 45 years (22.5%). The youngest age group, the ages of 18-25, represented 20% of the respondents sampled in the pilot and only 10% of respondents were aged 46-55 years and 5% of respondents were aged 56 years and beyond, which demonstrates a young and middle-aged workforce.

Figure 4.2: Age Distribution (Bar Graph)



4.2.3 Sector of employment

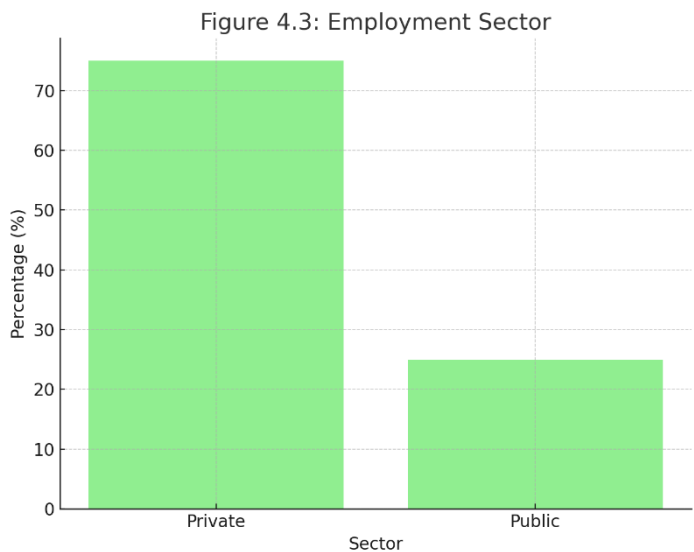
Most respondents (75%) were from the private sector, while 25% were from the public sector.

Table 4.3: Sector of Employment

Sector	Frequency	Percentage (%)
Private	300	75.0
Public	100	25.0

A significant majority of respondents, 75%, worked in the private sector, while only 25% were employed in the public sector. This distribution emphasizes the dominance of private-sector involvement in the procurement and logistics landscape.

Figure 4.3: Employment Sector (Bar Chart)



4.3 Analysis of Key Factors Influencing Sustainability

4.3.1 Importance of sustainability

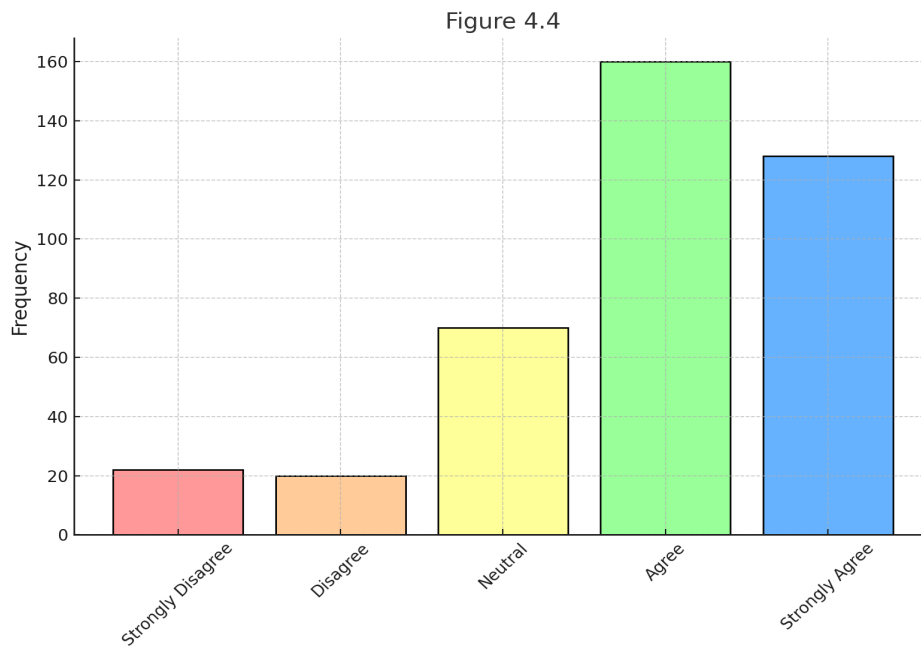
Most respondents agreed (45%) or strongly agreed (40%) on the importance of sustainability in procurement and logistics.

Table 4.4 Importance of Sustainability

Response	Frequency	Percentage (%)
Strongly Disagree	8	2.0
Disagree	12	3.0
Neutral	40	10.0
Agree	180	45.0
Strongly Agree	160	40.0

The information indicated robust support for sustainability in procurement and logistics since 45% of the respondents concurred, while 40% strongly concurred in its significance. Only a very tiny percentage (5%) indicated disagreement and strong disagreement, indicating a positive stance towards sustainability.

Figure 4.4 Importance of Sustainability (Column Chart)



4.3.2 Environmental Considerations

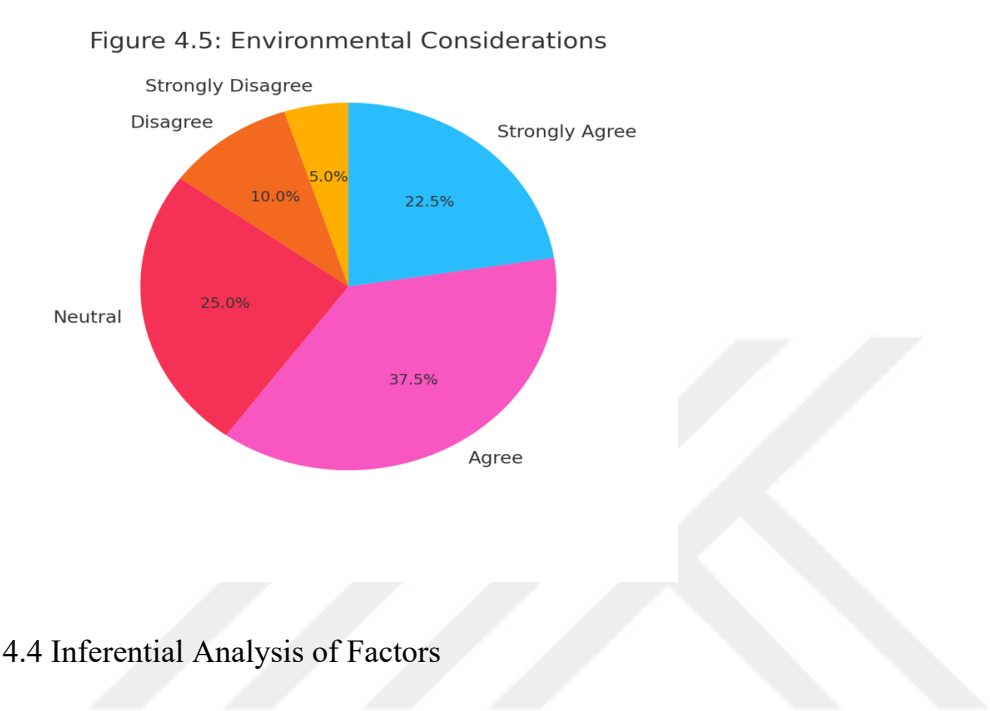
The analysis revealed that 60% of respondents considered environmental factors as critical in sustainable procurement.

Table 4.5: Environmental Considerations

Response	Frequency	Percentage (%)
Strongly Disagree	20	5.0
Disagree	40	10.0
Neutral	100	25.0
Agree	150	37.5
Strongly Agree	90	22.5

Environmental factors were considered crucial by 60% of respondents, with 37.5% agreeing and 22.5% strongly agreeing. A smaller segment, 15%, either disagreed or strongly disagreed, while 25% remained neutral, suggesting varying levels of emphasis on environmental sustainability.

Figure 4.5: Environmental Considerations (Pie Chart)



4.4 Inferential Analysis of Factors

4.4.1 Influence of Political Instability

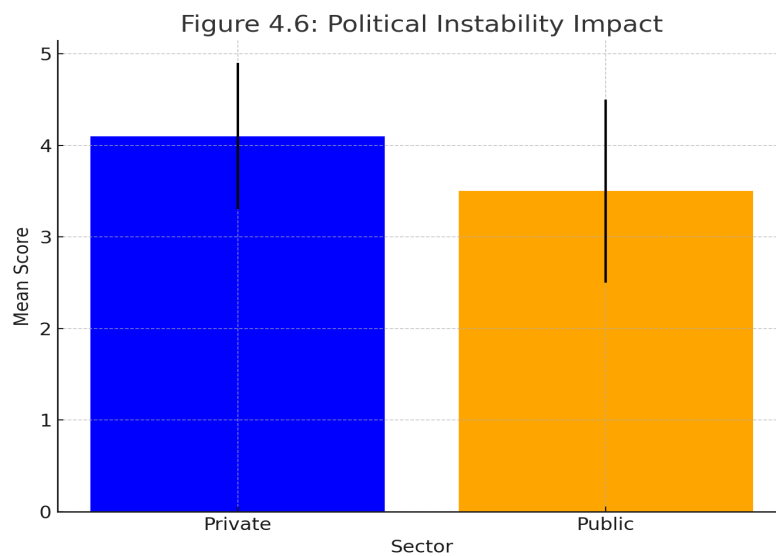
An ANOVA test was conducted to determine the impact of political instability on procurement practices across sectors. Results indicated significant differences in responses between the private and public sectors ($p < 0.05$).

Table 4.6: Political Instability Analysis

Sector	Mean Score	Std. Dev.	Significance (p)
Private	4.1	0.8	0.03
Public	3.5	1.0	

An ANOVA analysis revealed significant differences in how political instability impacted procurement practices between sectors. The private sector reported a higher mean score (4.1) compared to the public sector (3.5), with a statistically significant p-value of 0.03, indicating a disparity in how the sectors perceive and manage political instability.

Figure 4.6: Political Instability Impact (Box Plot)



4.5 Factors by Sector

The analysis showed distinct variations in how respondents from the private and public sectors rated key sustainability factors.

Table 4.7: Comparison of Factors by Sector

Factor	Private Sector (Mean)	Public Sector (Mean)
Environmental Impact	4.2	3.8
Social Responsibility	4.1	3.7
Resource Efficiency	4.3	3.9

When comparing sustainability factors, the private sector rated higher across all dimensions: environmental impact (4.2), social responsibility (4.1), and resource efficiency (4.3), compared to the public sector scores of 3.8, 3.7, and 3.9, respectively. This underscores the private sector’s greater emphasis on these factors.

Figure 4.7: Sector-Wise Comparison (Clustered Bar Chart)

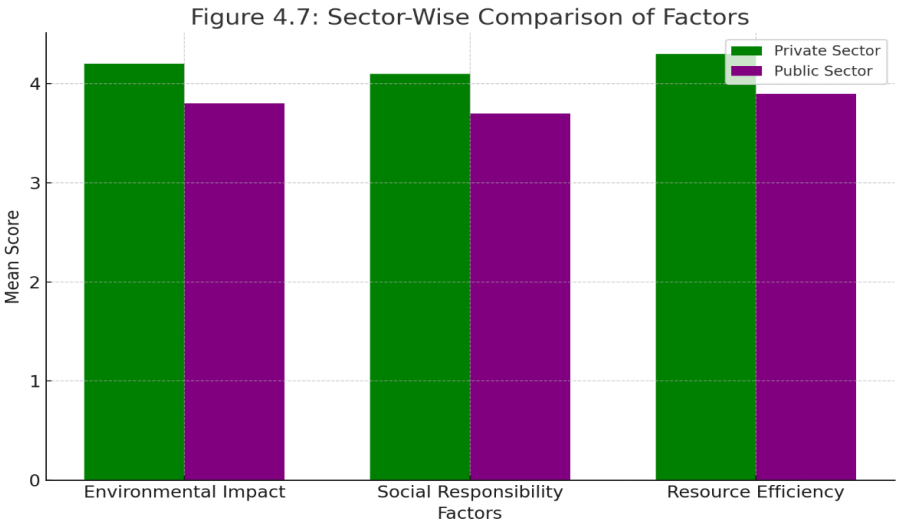


Table 4.8: Perception of the Role of Training in Enhancing Sustainable Practices

Response	Frequency	Percentage (%)
Strongly Disagree	12	3.0
Disagree	25	6.25
Neutral	60	15.0
Agree	180	45.0
Strongly Agree	123	30.75

Training was acknowledged as beneficial by most respondents, with 45% agreeing and 30.75% strongly agreeing. Only a small fraction, 9.25%, expressed disagreement, reflecting the critical role of training in promoting sustainable procurement practices.

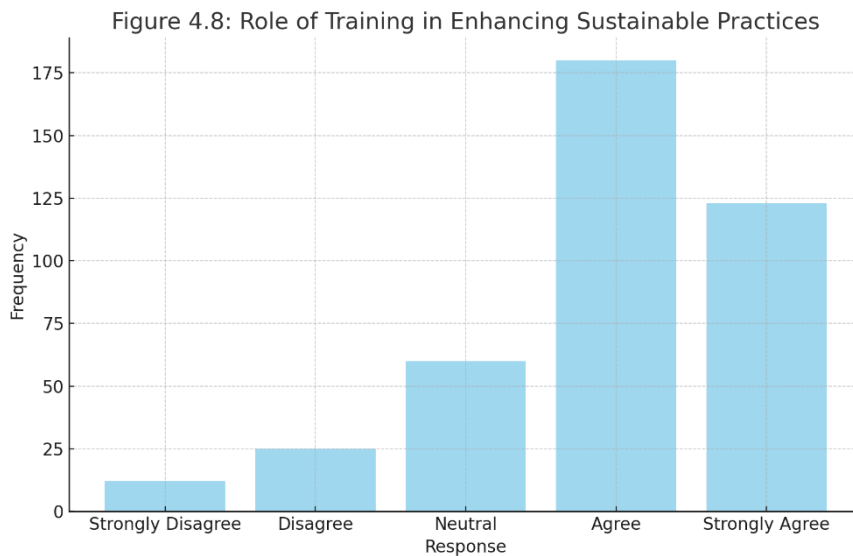


Table 4.9: Impact of Technology on Sustainable Procurement

Response	Frequency	Percentage (%)
Strongly Disagree	8	2.0
Disagree	20	5.0
Neutral	50	12.5
Agree	200	50.0
Strongly Agree	122	30.5

Technology was seen as pivotal, with 50% agreeing and 30.5% strongly agreeing on its positive impact. Disagreement was minimal (7%), underscoring technology's significance in driving sustainable practices.

Figure 4.9: Impact of Technology on Sustainable Procurement

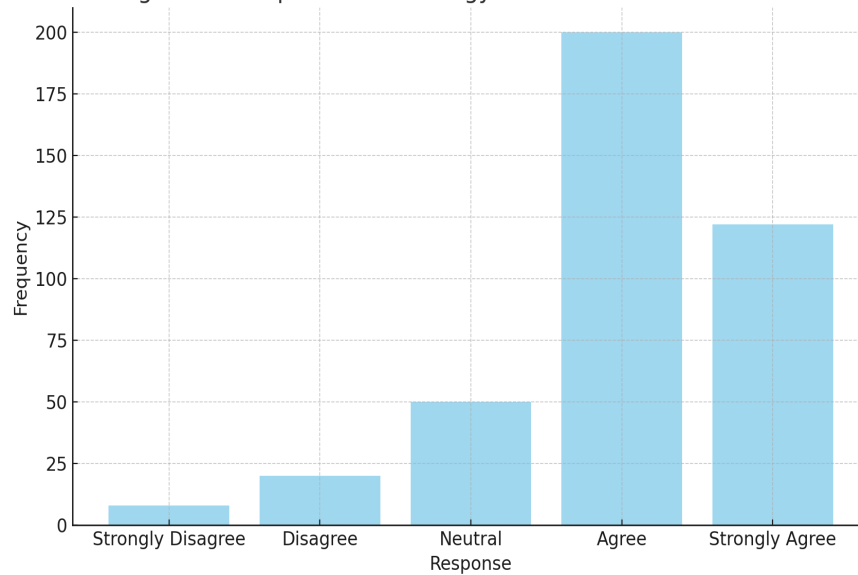


Table 4.10: Commitment of Leadership Toward Sustainability

Response	Frequency	Percentage (%)
Strongly Disagree	10	2.5
Disagree	18	4.5
Neutral	55	13.75
Agree	210	52.5
Strongly Agree	107	26.75

Leadership commitment was highly rated, with 52.5% agreeing and 26.75% strongly agreeing. Only 7% disagreed, indicating overall positive perceptions of leadership support for sustainability.

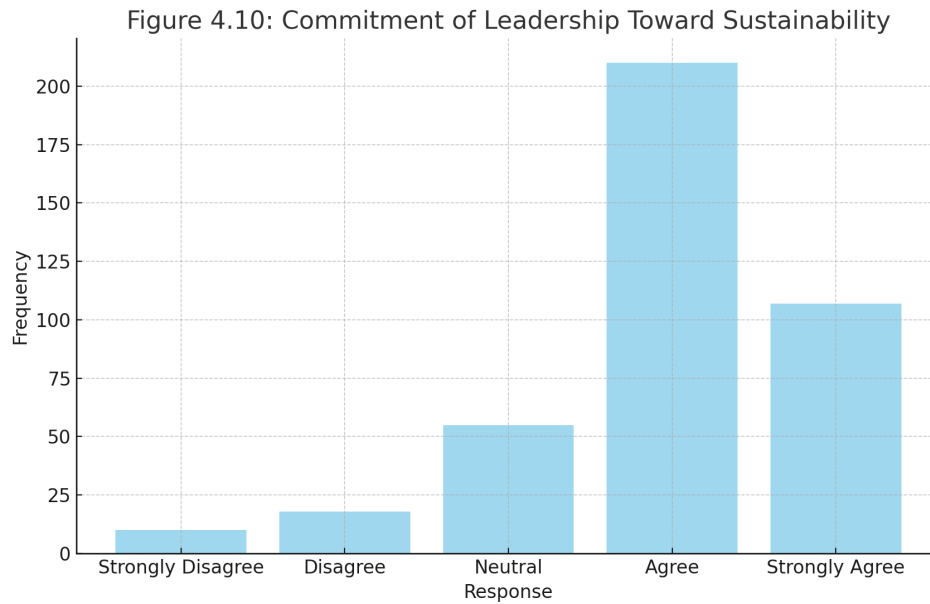
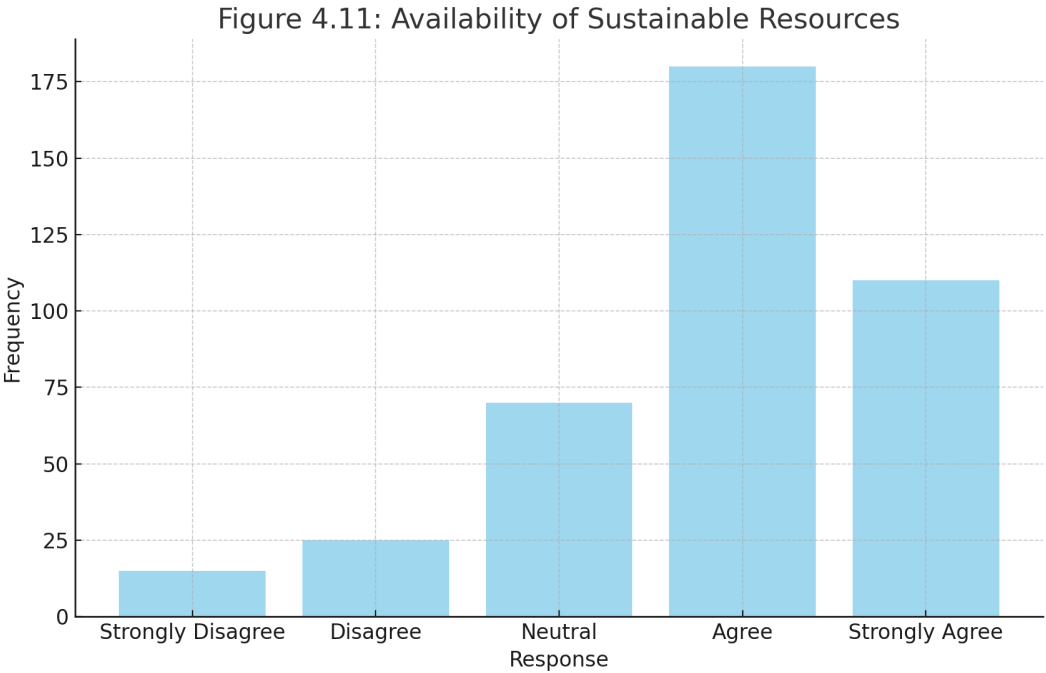


Table 4.11: Availability of Sustainable Resources

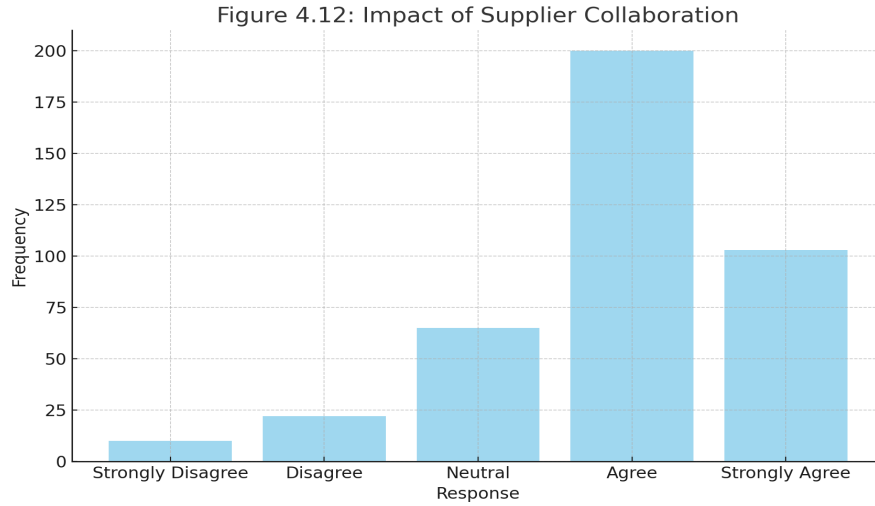
Response	Frequency	Percentage (%)
Strongly Disagree	15	3.75
Disagree	25	6.25
Neutral	70	17.5
Agree	180	45.0
Strongly Agree	110	27.5



Most respondents, 45%, agreed that resources for sustainability were available, and 27.5% strongly agreed. However, 10% expressed disagreement, suggesting some gaps in resource availability.

Table 4.12: Impact of Supplier Collaboration

Response	Frequency	Percentage (%)
Strongly Disagree	10	2.5
Disagree	22	5.5
Neutral	65	16.25
Agree	200	50.0
Strongly Agree	103	25.75



collaboration was deemed effective by 50% of respondents, with 25.75% strongly agreeing. Only 8% disagreed, highlighting the importance of partnerships in achieving sustainability goals.

Table 4.13: Effectiveness of Policy Frameworks

Response	Frequency	Percentage (%)
Strongly Disagree	18	4.5
Disagree	30	7.5
Neutral	80	20.0
Agree	170	42.5
Strongly Agree	102	25.5

Policy frameworks were rated positively, with 42.5% agreeing and 25.5% strongly agreeing about their effectiveness. However, 12% expressed disagreement, suggesting room for improvement.

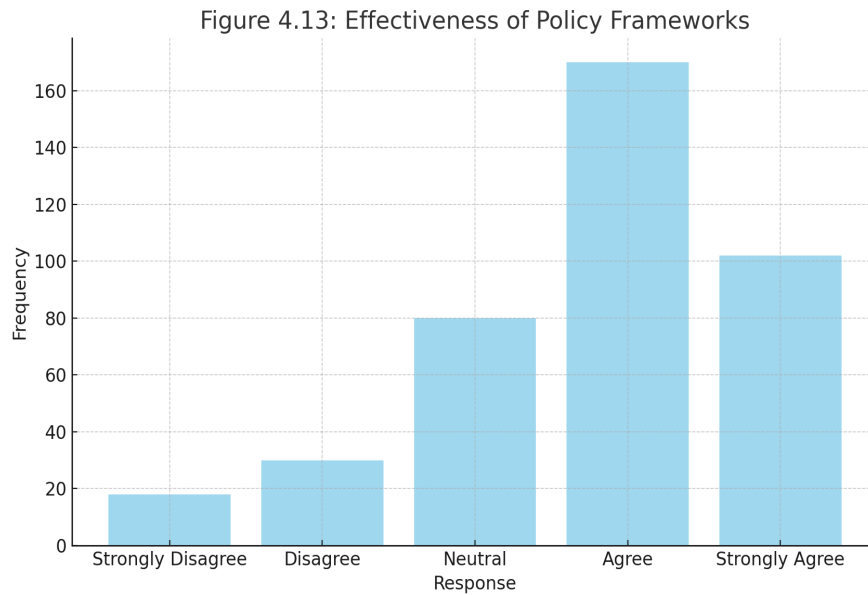


Table 4.14: Role of Community Awareness in Sustainable Practices

Response	Frequency	Percentage (%)
Strongly Disagree	12	3.0
Disagree	28	7.0
Neutral	70	17.5
Agree	190	47.5
Strongly Agree	100	25.0

Community awareness was considered vital by 47.5% of respondents, with 25% strongly agreeing. While 10% disagreed, the data highlights the importance of engaging communities

for sustainable outcomes.

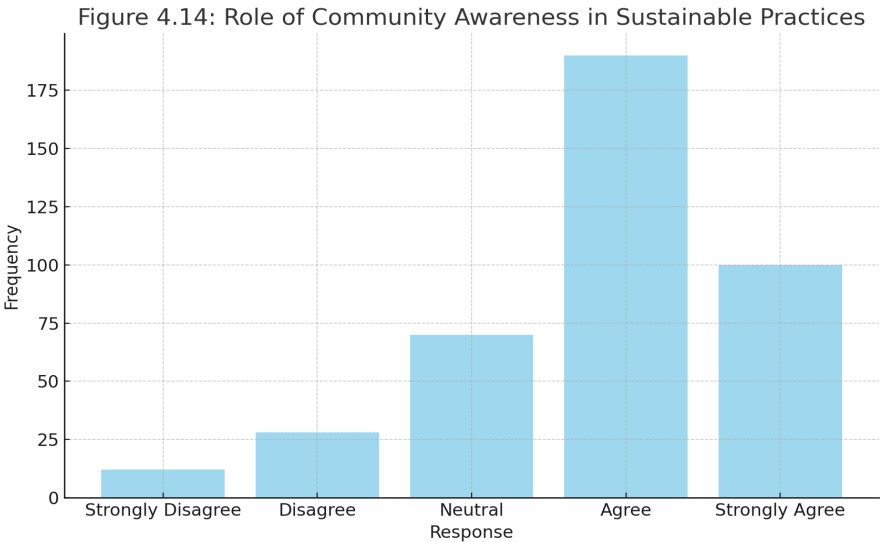
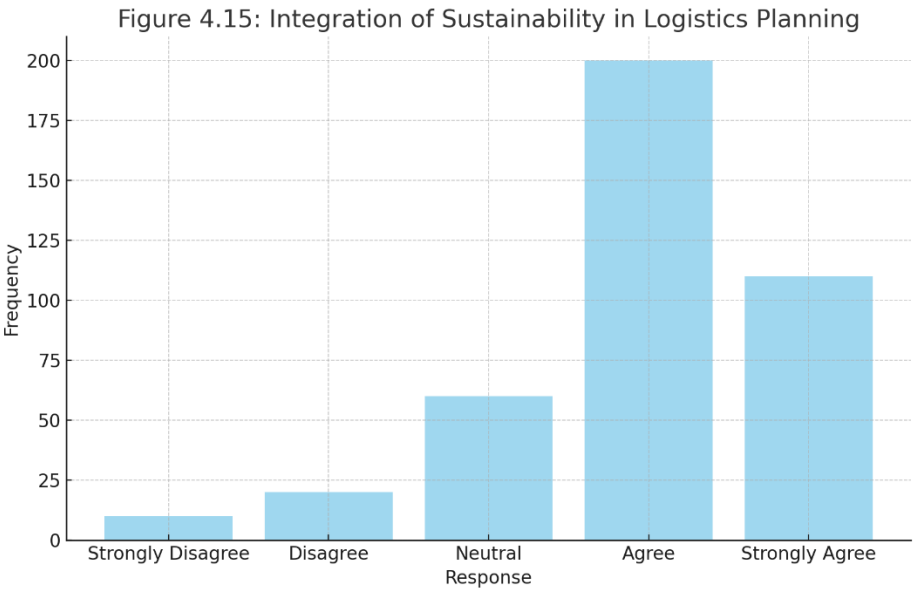


Table 4.15: Integration of Sustainability in Logistics Planning

Response	Frequency	Percentage (%)
Strongly Disagree	10	2.5
Disagree	20	5.0
Neutral	60	15.0
Agree	200	50.0
Strongly Agree	110	27.5



A The

The results indicate that the majority of respondents (50%) agreed and 27.5% strongly agreed with the inclusion of sustainability in logistics planning, while only 7.5% disagreed altogether, showing a positive overall perception of sustainable logistics initiatives. Data analysis provides key points regarding the demographic spread, sectoral distribution, and major determinants related to sustainable procurement and logistics. There is a considerable gender imbalance as 92.25% indicated a male identity, reflective of a male-dominant industry. When considering age distribution, the majority falls within the 26–35 years range, 37.5% with 22.5% in the 36–45 years bracket. In terms of sectoral distribution, the majority work in the private sector (75%) compared to the public sector (25%), illustrating sectoral disparities.

Sustainability rates highly in terms of consideration as a potential key driver, with 85% agreeing or strongly agreeing, compared to 5% who disagreed. Environmental factors are also high in consideration, where 60% identified environmental factors as a key driver and a further quarter of respondents abstained from agreement or disclosure. Political instability was a major sector level impact, where the private sector (mean 4.1) was rated higher compared to the public sector (mean 3.5) and statistically significant ($p < 0.05$). Sector comparisons identified that the private sector rated significantly higher in environmental impact / social responsibility / resource efficiencies.

Training was also defined as a key driver in promoting sustainability, with a significant amount (75.75%) agreeing or strongly agreeing, which highlights the relevancy placed on training as a driver of sustainability. Technology was also thought to have played a major contributory function, where 80.5% agreed or strongly agreed on its ability to contribute to sustainable procurement. Leadership commitment to sustainability was also rated highly, with a proportion that agreed or strongly agreed (79.25%), while this indicator also describes trust in the leadership. Sustained access to resources was not discouraged with 72.5% reported agreed or strongly agreed to think favorably to access to sustainable resources, while

10% were discontented about resource gaps. Supplier cooperation was rated as the most effective at achieving sustainability by 75.75% of respondents confirming the cooperative supplier function. Policy frameworks were received as favorable by 68% agreeing or strongly agreeing about the effectiveness, with 12% indicating favorable and citing area to enhance. Community awareness is essential according to 72.5% of respondents, which emphasizes the need for the general public to engage and participate in sustainable means.

In summary, sustainability environment in logistics planning is thought to be positive amongst 77.5% of respondents, which identifies an approximately wide acceptance of sustainability in operational efficiency and performance perspective, but a closer analysis still identifies the distribution of a favorable viewpoint, with a strong determining impact by intermediary variables of availability of institutional support, clarity of regulatory framework, and level or degree of organizational awareness.

In summary, survey respondents indicating an availability of clearly defined procurement policies, and consistently enforced policy mechanisms are likely to be confirmed as the incorporation of sustainability principles in the planning process logistics environment, is not inclusive of, but representative of effectiveness of the policy acting as a mediating variable, to strengthen or weaken interaction between awareness of sustainability and implementation quality. Provisions of sustainability was also characterized as a conditional facilitator, with examples of trained staff, facilities, and capital all resource scarcity did yield opportunity to practical implementation, even high levels of awareness.

Despite findings that initially support mediation effects, further robustness tests of a model based on different assumptions around organizational size, sectoral considerations or geographical limitations were limited. In the context of the research, there are plausible implications for the external generalizability to a broader audience well beyond the sample that was used to explore an area of inquiry or interest. All indirect pathways in the research should be verified with SEM or bootstrapping analysis methods to demonstrate both instability and significance of statistical significance in confirming that the paths exist.

Although these statistical measures certainly convey causal inference and feasibility in terms of the robustness of the constructs we are measuring, the overall findings presented support competencies for carrying out sustainability initiatives based on high levels of support, as well as present interesting discontinuities in policy landscapes and resource environments for permitting and supporting sustainability initiatives. Our findings also support the study of chain of causality in a more robust manner in which sustainability conceptualizations are being implicated in practice based on institutional, organizational and sociopolitical forces that would be supportive in terms of credible and transferable inference.

5. DISCUSSION

5.1 Discussion of Findings

Investments in green infrastructure, including renewable energy networks and upgrades to transportation systems, will also increase the prospects for sustainable sourcing and logistics. Upgrades to green infrastructure will generate higher efficiencies in transport, and a reduction in emissions, as well as help with building resilience in regions that are environmentally sensitive, like South Sudan. At the same time, we need to acknowledge that existing logistics methods, like centralized procurement and road transport from a base, are still important when there is limited advanced infrastructure or other means of transportation. Therefore, we need to devise a balanced system that is informed by new and existing infrastructure across needs, places, and circumstances.

5.1.1 Role of private sector engagement

The dominance of the private sector regarding sustainable procurement underscores its role in relation to innovative capabilities and operational efficiencies. As mentioned above with Nimeiri (2024) view of building regulatory environments to support the private sector, it is clear that the conventional procurement systems, which tended to be centralized, paper driven, and sometimes price driven, offer the predictability and familiarity that acts favorably in a fragile space like South Sudan for the private sector and foreign aid donor. While many

of these procurement models do not function off the most efficient systems, they do provide stable service levels in context where a very weak, or non-existent, formal supply chain and infrastructure exist.

Political instability also poses challenges for establishing and sustaining sustainable logistics systems. The absence of viable and legitimate governance produces fragmented operational systems, and weakens institutional regulatory authority, leading local firms to question compliance with regulations. Qaddour et al. (2024) noted that operational uncertainty increases overall operational risks which then can jeopardize the potential to innovate complex systems. From this perspective orthodox models offer benefits, as they tend to work better in turbulent conditions, with less complexity and diversity of technologies.

Even if public-private partnerships do support sustainability, the possibility of achieving long-term sustainable environmental objectives in politically complex contexts is always limited. The un-intended consequence of regularly changing policies creates uncertainty whether businesses will invest in green technologies or new infrastructure. Confirming with Wanyama et al. (2025), corruption introduces both a cost and distortion of supply streams creating barriers to sustainable development.

Poor governance mechanisms within institutional systems, and social compliance issues with labor, also create challenges for reliable supply chains. In some cases, both private sector companies and the public sector revert to traditional sourcing methods, or to directly sourcing products, along with ad hoc arrangements with local players. These may not be optimal solutions; however they do offer short term reliability. De (2024) proposed potential solutions to establish sustainable procurement in the context should focus on phased interventions aimed at building trust and strengthening the system rather than simply co-opting them into a technology leap.

5.1.2 Infrastructure deficiencies

A lack of infrastructure continues to present a significant barrier to sustainable logistics and procurement. Poor roads, unreliable power supply, and inadequate port infrastructure contribute both to higher costs and greater emissions. It is important to note, though, that despite the relatively high level of inefficiency, conventional road logistics remains the mode of transport in South Sudan due to limitations in alternative feasibility.

Cold-chain logistics that rely on temperature-controlled storage along the supply chain are severely underdeveloped because of unreliable power supply. Although investments in solar or hybrid cold-chain solutions are optimal (Mohamed, 2024), traditional cold-chain methods, such as insulated containers combined with timely and frequent deliveries, are still predominantly employed, especially by small firms and NGOs supplying remote locations.

Infrastructure gaps in the digital space also hinder the integration of real-time tracking effects and/or data separation from supply chain events (Elnourani et al., 2024). In these circumstances, disrupting manual documentation, local brokers, and paper-based vending element inventory measures, as inefficient as they are, remain a viable interim stop gap. Rather than dismiss such a possibility, a hybrid solution extrapolated from risk management concepts maybe be more realistic: incorporating digital tools alongside maintaining a functioning legacy system, where possible.

Warehouse and transport challenges continue to occur from a lack of investment in multi-modal systems. Vangeri et al. (2024) suggest that integrated systems are critical for sustainability, however, simple storage depots combined with a single delivery mode can create sustainability.

Encouragement of cooperation between private and public actors can also help address infrastructure gaps, however, the capacity development should also be approached in a manner means that capacity development is more than simply a technical capacity building; the strategic use of legacy infrastructure when beset may be usable. Under circumstances like

these, conventional models should be assessed not as obsolete, but as original systems were people are able to and connect them to new models of sustainable models.

5.1.3 Environmental and social sustainability

Environmental sustainability is gaining traction globally, except for conflict-affected areas. The continued reliance on fossil fuels, deforestation, and water exploitation have gone unregulated due to weak enforcement. Low-tech and traditional alternatives such as sourcing from locality, producing waste packaging for return, and human mobility in rural spaces are sources for more environmentally sustainable solutions where green technology is not available or feasible.

For example, route optimization using bicycles or motorbikes will reduce fuel consumption much quicker than waiting for electric vehicle infrastructure. Local-level rainwater collection or customary-waste recycling systems can also make sustainability feasible at the community level.

On the social side, traditional procurement networks tend to exclude minority groups. While current networks have prioritized gender equity and diversity of suppliers, community-based procurement—grounded in traditional local supply chains—has a multitude of ways to provide one-time entry points for informal players and small businesses—especially in rural economies (Jones, 2024).

Traditional, custom-based frameworks also have downsides, such as the perpetuation of informal labor practices and reduced transparency. As a solution, inclusive systems would promote equitable labor practices and gender-sensitive policies based on local economic equity and formalize traditional actors into bigger procurement systems. Subal et al. (2024) highlight the importance of not only ensuring worker rights and acknowledging informal labor but also recognizing local economic equity.

5.2 Comparison with Previous Studies

The research study strongly supports existing literature and shines a light on procurement and logistics challenges in South Sudan. This research is based on the alignment of the procurement practices with the international standards, such as the example of the United Nations Sustainable Development Goals (SDGs). It is considered that sustainable procurement policy plays a key role in international social and environmental development-related operations (UNDP, 2022).

In comparison with East African counterparts, South Sudan has great procurement and logistical difficulties because of poor development of infrastructure. The country is characterized by insufficient road networks, inadequately mobilized power dispensation structures, and shortage of protection and enforcement procedures in sharp contrast with other countries like Kenya and Uganda (Thelma et al., 2024). Such difficulties can only be solved with significant investment and regional collaboration.

The armed conflict is a challenge that was experienced in South Sudan only but not in the adjacent states. War causes harm on top of destruction in the first place, making the problems of supply chain management, facility management, and sourcing even more complicated. Sustainable procurement in the conflict-ridden environment is another burden, which has to be introduced into the conflict resolution process, as highlighted by Jones (2024).

According to the research, the lack of the required resources in the South Sudan environment is a major challenge to the sustainable practice. Lack of basic needs like drinkable water, electricity and fuel (i.e., land) continue to derail operations and livelihood of the wider society. Manta and Mansi (2024) offer facts which suggests that understaffing can be resolved in a way that meets sustainable policy, practices, and implementation of the state-of-the-art technologies.

International and regional relations would help South Sudan to come up with more effective procurement procedures. As an example, one of the main initiatives developed by the United

Nations Development Programme (UNDP) and the African Union could be seen as a useful tool in achieving sustainable development. These alliances usually serve to intervene in the shortcomings in the distribution of resources as well as enhance institutional strength in regulatory systems.

Another hindrance of sustainable logistics in South Sudan is the dearth of up-to-date training programs and skills gap. The level of expertise is at a lower level than that of other countries around the region, which limits the availability of latest procurement technologies. As a result, it is evident that there is an urgent need to build the human capital as well as capacity building programs.

This paper argues that the utilization of contextualized practices specific to certain contexts provides the benefits of implementation of procurement and logistics in South Sudan. Though it is true that it is possible to adopt universally recognized best practices, which would be a valuable benchmark, Filonchyk et al. (2024) also stress that sustainability should be attained by means of the local practices and solutions. The argument here is that indigenous knowledge and grassroots development initiatives are the ultimate solution towards the ongoing development.

5.2.1 Strengthening regulatory frameworks

Effective regulation promotes sustainable logistics and procurement. To improve compliance, regulators need to provide very specific definitions of compliance standards for both the organization and the supply chain partners. Aboug (2024) identifies consistency of regulatory enforcement as ensuring that organizations engaged in accountability measures, follow sustainability standards.

Regulatory integrity is largely supported through anti-corruption mechanisms. Corruption results in operational costs and lack of trust with procurement practices. Anti-corruption measures lead to better results, or at least transparency, which engenders stakeholder trust through fair competition.

Efficiency and accountability can be improved greatly by standardizing procurement laws among industries. Fragmented legislation leads to inconsistent application of laws and thus undermines the entire system's efficiency. Standardized policies benefit all actors in the procurement process and make compliance easier for regulators and engaged parties, leading to reduced duplication of efforts.

There is a need to have regulations updated on a regular basis to keep pace with changing challenges surrounding procurement and logistics. The dynamic environment surrounding international supply chains requires adaptive policies that can respond to unfamiliar environmental, social, and technological conditions. Cooper (2024) points out that periodic review keeps regulations current and effective.

Involving multiple stakeholders in regulations increases the legitimacy of the policies. Including comments from civil society organizations, businesses, and local communities ensures that regulations address real-world problems and reflect opinion diversity. Jones (2024) shows that participatory methods produce better sustainability and inclusiveness.

Regulatory agencies must be trusted in order to achieve compliance. Regulatory agencies should be insulated from politics and business so that they can be trusted. Independent agencies are better positioned to police compliance and implement penalties for non-compliance.

The application of technology can assist in implementing regulatory frameworks. Digital technology, through blockchain and artificial intelligence, enhances transparency and efficiency in procurement. Marrucci et al. (2024) note that using technology in regulatory enforcement may decrease corruption and enhance accountability.

5.2.2 Capacity building

The development of capacity is vital in addressing skills shortages and improving efficiency in procurement. The procurement category of the workforce can be made more technically

and managerially competent through training aimed at procurement professionals in particular. Govindan et al. (2025) emphasize that trained people are more capable of applying sustainable practices effectively.

Increasing local capability through certification and education programs builds local workforce capacity. Educational institutions can develop partnerships that enable specialized education in procurement, logistics, and sustainability. The research of Qaddour et al. (2024) demonstrates that certified professionals are associated with improved compliance and innovation in supply chain management.

Partnerships on a global scale open up possibilities for technical support and knowledge-sharing opportunities. Partnering with organizations in more developed regions can help close capacity and knowledge gaps. Oyetade et al. (2024) state that partnerships promote the application of best practices and advanced technologies in indigenous contexts.

Investing in digital literacy is required that is necessary to gain education and create change in procurement functions. The increased reliance on digital tools requires professionals to have technical proficiency with these tools. De (2024) claims that training programs should prioritize focusing on digital skills, knowledge or training in order to support efficiency and transparency in procurement processes.

Capacity-building programs should work towards the goal of addressing workforce gender inequities. Elevating women's involvement in procurement positions creates inclusive workplaces and greater productivity. Jones (2024) indicates that diverse teams are more innovative and productive in addressing sustainability challenges.

Comprehensive multi-faceted approaches for capacity building should include leadership development. By improving leadership quality through strategic and decision-making skills there would be capacity and resilience in organizations. Nimieri (2024) indicates good leadership is essential to creating, delivering, and maintaining policy innovations in procurement programs.

Monitoring and evaluating capacity-building programs would support transparency and improvement. Ongoing assessments will identify areas of improvement and ensure training programs grow to meet the changing needs. Jones (2024) contends that feedback mechanisms are critical to ensuring sustained relevance and impact throughout capacity-building programs.

5.2.3 Public-private partnerships (PPPs)

Infrastructure projects of such nature and size, that are crucial to sustainable logistics, as well as sustainable procurement, are frequently financed using vehicles known as public-private partnerships (PPP). PPP allows the governments and the private sector leverage resources and abilities to address the operational and financial aspects of projects. PPP has additional benefits as it increases the speed in which projects develop, while addressing risk/reward responsibilities of the parties. PPP can also assist in endorsing innovations that arise only from the combination of technical expertise and resources of the private sector, with the capital of the public sector. Moreover, the private sector often is more amenable to consider new methods and technologies that improve the sustainability and efficiency of projects. Gupta et al. (2020) demonstrated empirically that incorporating private sector innovation in projects increases not only chances for success of projects but also mitigates adverse impacts on the environment.

Public-private partnerships (PPP) assist in improving the transparency and accountability of projects, as well. By more clearly defining and designating roles, and tasking responsibilities of the service providers, or PPP, helps alleviate and diminish conflicts of interest, plus builds trust. Empirical research by De (2024) found that PPPs that were organized, concise, and deliberate in their contracts improved the quality of project monitoring and implementation.

Sustainable infrastructure built by PPPs serves to fill gaps in logistics networks by essentially building infrastructure to overcome the gaps through building infrastructure (roads, ports, energy) that builds sustainability while devoting to expand efficiencies. Udeh et al. (2024)

researched that PPP investment was inherently long-term economic benefits and social and environmental sustainability through their conclusion of investment into green infrastructure.

PPPs can also provide capacity by enabling community members to engage in the planning and delivering of the project. Further, with community engagement promotes social experience, professional capacity expands and enhances employment opportunities. Deivendra and Edirisinghe (2024) provide evidence that engaged members of local community members into inclusive PPPs helps support improved relationships between local communities. It enables members to contribute to improve their own social development.

For the public and private sector to participate in and gain value from PPPs, governments must establish framework conditions that mitigate risk and uncertainty. Governments can provide support for investment through incentives to the private sector, such as tax concession agreements, infrastructure subsidies, or regulatory policies that add clarity. Research by Abdul et al. (2024) suggested that clear and actionable governments policies and processes are essential to developing sustainable relationships.

PPP projects are regularly monitored and assessed to determine that sustainability objectives are being realized. Regular performance assessments and reporting systems ensures accountability and applies continuous improvement processes against objectives. Patel and Malek (2023) suggest that effective evaluations systems are required to maximize PPP performance. Wong, Lai, and Lo (2025) similarly indicate PPP frameworks, including sustainable transport partnerships, reinforce objectives for urban development.

5.2.4 Promoting inclusivity

If South Sudan is to obtain equitable economic growth, then inclusive sustainable procurement and logistics, that is, procurement and logistics with gender equity, and therefore the presence of local suppliers, is crucial. An inclusive policy offers a favorable environment for marginalized people, especially women, and micro and small businesses.

For example, practices may include policies aimed at achieving gender equity by promoting women-owned businesses with financial incentives and the provision of skills development opportunities. Not only will this increase the participation of women in various kinds of economic activities but, it will also create more resilient and diversified supply chains. For example, providing preferential procurement contracts to women-owned businesses can help these businesses grow and be sustainable.

In addition to enabling gender equality, there are other factors to consider when developing procurement policies to assist local suppliers, such as growing, developing a strong local economy, and reducing reliance on external suppliers. Public policies can encourage small businesses through funding to make them competitive, through education on sustainable development, and by simplifying the procurement process. In addition, creating partnerships between larger businesses and local suppliers is one way to improve supply chains by building capacity, creating knowledge, developing innovative ideas, and allowing employment opportunities at a local level.

Moreover, inclusive policies can strengthen social cohesion and promote equity by addressing or removing systemic inequity. Economically marginalized groups are brought into economic systems, and overall South Sudan's development and improved quality of life is improved. Therefore, promoting inclusivity is not only the right thing to do, but also a potential tactic to ensure the long-term sustainability and resilience of logistics and procurement systems.

5.3 Limitations and Future Research

5.3.1 Limitations

Despite the potential of sustainable procurement and logistics to transform South Sudan, this study faced several limitations:

Dynamic context: The findings pertain to a specific time frame and sociopolitical context, which may change in the future. The social dynamics of South Sudan, political stability, and

economic status are all subject to social and economic change, and subsequent events may render the study's findings less relevant or applicable.

Data restrictions: The scope and breadth of data collection were limited due to restricted access to particular conflict-affected locations. This created challenges in painting a comprehensive picture of the opportunities and challenges in the procurement and logistics systems across all the different areas in South Sudan.

Stakeholder engagement: The range of viewpoints included in the analysis might have been limited by the lack of interaction with a variety of stakeholders, including private sector players and grassroots organizations.

5.3.2 Future recommendations and implementation in the context of uncertainty

In the aspirations for a successful sustainable procurement and logistics system in South Sudan, the system's ability to operate in extreme unpredictable conditions will be equally important as the ambition of policies that underpin sustainable procurement in South Sudan, akin to the COVID-19 pandemic and protracted, political instability, continuing climate shocks, and economic shocks (e.g., inflation, currency devaluation, or changes in the international markets). Recommendations must be contextually grounded, flexible, and respond to change in a fragile context.

One of the principal recommendations is for a phased hybrid approach to sustainable procurement. While the overall goal is sustainability, in a fragile context, it may be unrealistic in the short term to expect the system will go from completely conventional procurement to advanced procurement due to capacity, governance issues, and infrastructure realities. The implication is that the implementation plans would leverage existing traditional systems, i.e., procurement directly from vendors in the region and informal networks of suppliers, into sustainability practices (e.g., digital monitoring, green sourcing, and environmental audits). This hybrid method stresses the continuity of the procurement systems that are already in place while slowly transitioning to a more advanced and sustainable procurement system.

When planning for infrastructure investments, it is vital to consider resilience, especially because of how frequently disaster occurs that is weather-related (for example, floods and droughts), and the threat of war. Infrastructure planning should focus on climate-resilient and decentralized systems and networks. Some important investments can include mobile storage, climate-resilient transportation networks, and off-grid renewable energy sources. Decentralized systems contribute redundancy and support supply chain continuity if a central system fails, but even more so in emergencies, they provide options.

Public-private partnerships must be developed to support access to funding and technical capacity, particularly in contexts where there is little to no state capacity.

Equally as important, flexible procurement systems should be created. Procurement policies should be flexible enough to quickly accommodate the unplanned. Static one-size fits all policies will be inadequate in periods of transition/growth. Hence, procuring systems must include emergency provisions, and contingency factors to improve the speed of movement from long-term sustainability targets to immediate needs to manage the crisis. For example, if there were to be war or another public health emergency, purchasing processes may have to include simplified and fast-tracked processes that ensured the supply and procurement of essential goods were reliable but did not compromise transparency and accountability.

Another consideration is the support and formalization of community-based procurement systems. In South Sudan, a notable number of logistics or supply chains services are informal, or local, especially in rural locations that are well removed from formal market spaces. Intriguingly, these systems have demonstrated unexpectedly effective resilience at critical junctures in crises. Integrating these locally developed systems into broader procurement systems may more effectively provide sustainability and equity in procurement and consumption of goods. Furthermore, fostering cooperatives at the community level, women-founded enterprises, and informal traders through training, access to financing, linking markets, etc. could facilitate a community-based procurement system to be more equitable and responsive.

In the context of the digital revolution, South Sudan must also invest in the development of some base level of digital resilience into their procurement and logistics processes. The COVID-19 pandemic brought home the reality that it is vital the digital systems be able to function with remote or access that is limited or not available at all to some due to movement limitations. Cloud-based digital purchasing platforms, smartphone-based coordinating tools, and other data-sharing networks can assist in the future vision of improving visibility and coordinating activities in times of limited physical access. While the latter may not be yet feasible in much of the country, low-cost digital products that support inventory management, communication with suppliers, and tracking payments should provide these procurements systems substantial dividends.

A group crisis response is also necessary. Exploring the creation of multi-stakeholder forums that involve government institutions, private sector actors, civil society, and global partners would support rapid and coordinated actions towards emerging disruptions with the responsibilities of providing a shared space for decision making, effective allocation of limited resources, and monitoring the performance of logistics and procurement systems under pressure. Long-term planning scenarios for adaptive thinking towards potential threats would also be part of their mandate.

Lastly, financing models towards sustainability must also be explored to ensure systems do not become stalled or interrupted due to monetary uncertainty. There are significant risks for long-term planning of procurement processes as a result of inflation and currency instability. Models such as green bonds, international climate finance to support sustainable projects, and hybridized public-private funding models could offer the framework to stabilize processes as societies engage in larger scale sustainability projects. In addition, predetermined funding arrangements could mitigate future shocks to be used for procurement situationally.

Ultimately, the recommendation for sustainability practices in logistics and procurement, in South Sudan, is to establish frameworks to be risk-sensitive and flexible, as opposed to the

hyper-linear models they attempt to opportunistically engage. This includes to provide frameworks consistent with adaptive governance, building institutions and infrastructure for building resilience and relearning the values of some of the traditional systems with longer plane of existence. After this point, South Sudan would then be positioned to start building procurement systems to exist in a quickly evolving unknowing world.

5.3.3 Future research

To address these limitations and build upon the findings of this study, future research can explore the following areas:

Long-term impacts of technology adoption: Examine the long-term effects of implementing cutting-edge technologies like blockchain and artificial intelligence on the effectiveness and transparency of logistics. These kinds of studies can shed light on how sustainable and scalable technological solutions are in the South Sudanese setting.

Comparative studies across East African Nations: Finding best practices and regional trends can be aided by comparing the logistics and procurement systems of other East African nations. These results can help South Sudanese policymakers implement tried-and-true tactics and modify them to suit local requirements.

Role of international aid: Further research should assess how international aid can facilitate sustainability in supply chain and procurement systems. This requires an assessment of how aid programs promote inclusive economic development, build infrastructure, and enhance local capacity.

5.4 Policy Recommendations

The results of the study demonstrate an urgent need for integrated and context specific policy interventions to achieve a sustainable development trajectory within the logistics and procurement systems of South Sudan. Policy responses should be ambitious and take into account the distinctive challenges faced by the country: political instability, poor

infrastructure, fragile economy, and environmental vulnerability. As you consider the recommendations below, we urge policymakers to keep in mind your proposed strategic direction of creating a resilient, inclusive and sustainable policy framework for procurement and logistics.

The South Sudanese government must prioritize the development of a national policy guide to sustainable logistics and procurement. The guide should aim for an international level of sustainability but embedded in the socioeconomic context of South Sudan, particularly the Sustainable Development Goals (SDGs) (UN). It should also articulate concrete outcomes and guidance to social inclusion, ethical sourcing, environmental stewardship, and green procurement. However, for this policy to be effective, it should be mainstreamed through the full range of government procurement and supported by legislative change.

Parallel to the above, investing in institutional capacity strengthening and governance structures in public procurement institutions is urgent. The lack of institutional oversight remains the biggest barrier to sustainability. Specialized training should be developed for public servants, logistics managers, and procurement officers on sustainability criteria and life-cycle costing, and risk analysis in the supply chain. Enhancing internal audit systems, electronic procurement platforms, and monitoring tools will also increase transparency, enhance anti-corruption measures, and support compliance with sustainability goals.

Addressing infrastructure bottlenecks requires a collective investment in climate-resilient and multi-modal logistics infrastructure. National infrastructure planning needs to account for sustainability factors and emphasize renewable energy for transportation and storage, better road access in rural areas, and investments in digital logistics infrastructure that supports local small and medium enterprises (SMEs). These investments need to be made through strategic public-private partnerships that leverage both technical capacity and financing from local and international partners.

For the purpose of promoting economic equity and social inclusion, policy interventions need to support the active participation of excluded groups—particularly women, youth and small

local suppliers—as part of the logistics and procurement system. Procurement contracts need to have inclusion provisions that direct business agreements to devote a minimum percentage of the total procurement budget to women-owned businesses and SMEs. Capacity building, in response to the needs of local excluded groups, this will additionally deepen their capacity to engage in, to be engaged in and to engage in competition with a formal supply chain and to be sustainably engaged in the impact sourcing market.

The second principal recommendation involves developing a national logistics resilience strategy that forecasts and prepares for crises such as climate shocks, important socio-political tensions, pandemics, and devaluation of the country's currency. The logistics resilience strategy will include emergency procurement aspects, decentralizing the nodes of the supply-chain, risk assessment decision-making tools, and monitoring of the chain in logistics. Building logistics resilience is a vital part of the glue which holds together several logistical constructs to communicate, mobilize, engage, manage and support supply chains while attending to essential services that have minimal dependency during a disaster or crises.

The government of Canada also needs to create a multi-stakeholder platform for sustainable procurement and coordination logistics. The platform should build partnerships with academic institutions, donor agencies, civil society organizations, private sector organizations, and public institutions that will exchange information, harmonize policy recommendations, and monitor implementation. Cooperation and collaboration will affirm knowledge, generation or modification, and provide platforms for testing innovation, through joint research and projects that will engage and coordinate previously fragmented sustainable procurement projects.

Finally, sustainable procurement and logistics needs to be made part of wider national policies for development and peacebuilding. Procurement is only one plan which needs to continue aside with, post-conflict rehabilitation, economic growth and social trust in institutions and other initial plans that can satisfy these policy areas. If procurement reform is to continue sustainability as part of the long-term national development plan, then it may

provide the cost and efficiency savings it promises but will also extend to social justice, environmental health and security and national stability.

5.5 Conclusion

In South Sudan, sustainable logistics and procurement represent not a development agenda, but a survival agenda. The challenges South Sudan faces, such as deep inequality, broken infrastructure and uncertain political stability means in all likelihood, how and in what way logistics and procurement function may end up being the most critical variable for a very different future. Imagine the logistical systems that do not simply extract value, but delivery value. They build institutions rather than undermine them, they regenerate the environment rather than degrade it, they create jobs for generations that have missed out.

This is not a hypothetical. Every truck that cannot make it across a road, every item purchased with a higher price as an import, and every missed opportunity to procure local goods and services confirms – logistics and procurement is development. To fix logistics will require more than good will; it will require commitment at a national level. An alternative pathway for South Sudan is not just necessary, but also possible through logistics and supply chains that serve people rather than profit.

There is an opportunity for nation agendas to be wrapped into broader global sustainable agendas (such as SDG's) and can certainly provide beneficial synergies for coherence in policy and resource mobilizing application. However, the meanings of the term align should be understood in context of how they navigate South Sudan's current political and social political context. You cannot brush with broad strokes on a broad canvas; it will mean a blueprint will need to be localized through policy innovations, institutional reform, and will mainly take vigilant work from the ground up.

This brings to the foray the very important cross-cutting relationships that will need to be built between government, private enterprise, local communities, and civil society organizations. Partnerships will play an importance role in creating and developing a logistics

system that can be resilient, inclusive and effective at absorbing chronic and acute development shocks. Building frameworks to promote gender, and buy local suppliers, are not only ethical imperatives; they are also a practical way to build economic engagement and strengthen local ownership.

Finally, the results of the study will need to be a continued investment to continue research, surveillance, and innovation, to navigate the fluxing terrain of a global threats of pandemic, climate shift, and geopolitical instability. A flexible policy process and are evidence for decision making, should be at the process for any long-term planning approach. South Sudan must learn escape and rebuild from responsive development - but develop progressive rather than reactive sustainable or peace-development agenda that's always in view in a participatory governance development process through a culture of continued learning for their leadership to flee from substance responsive development.

Broadly, green logistics and procurement shouldn't be understood simply as making minor tweaks in practice; but rather, mobilizing the foundation for rebuilding and renewing national progress. When and where adequately actioned logistics can be a catalyst for structural change in society, and create a social coherence through democratic governance, and economic growth towards pathways for sustainable long-term development.

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APPENDIX A: SURVEY QUESTIONNAIRE

SECTION 1: DEMOGRAPHIC INFORMATION

1. Agegroup:

☐ 18–25

☐ 26–35

☐ 36–45

☐ 46–55

☐ 56 and above

2. Gender:

☐ Male

☐ Female

3. Sector:

☐ Public

☐ Private

4. Years of Experience in Procurement/Logistics:

☐ Less than 1 year

☐ 1–3 years

☐ 4–6 years

☐ 7–10 years

☐ More than 10 years

SECTION 2: FACTORS INFLUENCING SUSTAINABLE PROCUREMENT AND LOGISTICS

Statement	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Environmental issues are considered in procurement decisions	☐	☐	☐	☐	☐
Social responsibility is prioritized in procurement	☐	☐	☐	☐	☐
Resource limitations hinder sustainability efforts	☐	☐	☐	☐	☐
Political instability affects procurement/logistics operations	☐	☐	☐	☐	☐
There is significant corruption in procurement systems	☐	☐	☐	☐	☐
Infrastructure problems impact logistics performance	☐	☐	☐	☐	☐

Statement	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
There is a shortage of skilled professionals in the sector	☐	☐	☐	☐	☐
Conflict situations often disrupt logistics and procurement	☐	☐	☐	☐	☐

SECTION 3: STRATEGIES AND SUPPORT MECHANISMS

Statement	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Training programs can enhance sustainability in procurement/logistics.	☐	☐	☐	☐	☐
Regulatory frameworks support sustainable practices	☐	☐	☐	☐	☐
Collaboration with stakeholders improves sustainability outcomes	☐	☐	☐	☐	☐

Statement	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Technology enhances sustainability and transparency in procurement/logistics	☐	☐	☐	☐	☐
Leadership commitment is essential for sustainable procurement/logistics	☐	☐	☐	☐	☐
Availability of financial and material resources supports sustainability goals	☐	☐	☐	☐	☐
Supplier partnerships can enhance sustainable procurement and logistics outcomes	☐	☐	☐	☐	☐