



RESEARCH ARTICLE

EXPLORING THE SUSTAINABLE OUTCOMES ACHIEVED THROUGH PROCUREMENT PRACTICES IN TERMS OF ENVIRONMENTAL IMPACTS IN SOUTH- SOUTH AND SOUTH WEST REGIONS OF NIGERIA

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ABSTRACT

This study investigates the sustainable outcomes achieved through procurement practices, focusing on their environmental impacts in the South-south and South-west regions of Nigeria. Sustainable Procurement, a key component of sustainable development, seeks to balance economic, social and environmental considerations. Data were collected through surveys and interviews analysing procurement processes across public and private sectors. The findings reveal variations between the two regions in the adoption of environmentally friendly procurement practices. The South-South region, with its reliance on oil-based industries, faces greater environmental challenges but has made strides in addressing waste management and pollution. Meanwhile, the South West region demonstrates better integration of green procurement policies, particularly in urban planning and infrastructure. This study highlights the importance of regional context in shaping procurement outcomes and offers recommendations for enhancing environmental sustainability in Nigeria.

Keywords: Sustainable outcomes, procurement, environment, South-south, South-west

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1.0. INTRODUCTION

Sustainable Procurement has emerged as a critical tool for achieving environmental goals globally, especially in developing countries like Nigeria where the pressures of environmental degradation and resource depletion are considerable. Sustainable Procurement is defined as “the process by which organisations meet their needs for goods, services, works and utilities in a way that achieves value for money on a whole-life basis in terms of generating benefits not only to the organisation but also to the society and the economy, without causing harm or damage to the environment.” (Walker & Brammer 2009). This practice encourages organisations to make purchasing decisions that consider environmental, social and economic impacts over the lifecycle of products and services (Preuss 2009). Sustainable procurement integrates elements like eco-friendly materials, ethical sourcing and reduced waste, aligning with broader sustainability goals.

The importance of sustainable procurement lies in its potential to drive positive environmental and social outcomes while fostering economic growth. By adopting sustainable procurement practices, organizations can reduce their carbon footprints, minimize resource depletion and promote fair labour standards across supply chains (Meehan & Bryde, 2011). This approach not only aligns with corporate social responsibility goals but also enhances long-term resilience and operational efficiency (Brammer & Walker, 2011). As a result, sustainable procurement is increasingly seen as essential for organizations aiming to contribute to sustainable development objectives.

In Nigeria, the urgency to adopt sustainable procurement practices is underscored by escalating challenges related to pollution, deforestation and waste generation, all of which threatens the country’s natural resources and biodiversity. (Akinbami & Olaniyan, 2018). Nigeria’s environmental landscape has been significantly affected by various unsustainable practices, primarily due to economic activities like oil extraction, agriculture and rapid urbanisation. (Okpara *et al.*, 2020). Sustainable procurement, if implemented effectively can play a vital role in mitigating these environmental issues by minimizing waste, reducing greenhouse gas emissions and promoting the use of eco-friendly materials. (Adetunji *et al.*, 2019). Studies have shown that environmentally responsible procurement decisions not only reduce pollution but also improve resource efficiency and lead to long-term financial savings. (Jones & George 2021).

However, the adoption of sustainable procurement in Nigeria remains challenging, primarily due to regulatory gaps, limited awareness and insufficient policy support. (Adeoye *et al* 2022). Addressing these issues is essential as sustainable procurement practices can serve as a powerful instrument for advancing environmental goals and fostering sustainable development within Nigeria. This paper therefore, explores the environmental impacts achieved through sustainable procurement practices in Nigeria, highlighting the progress made and the challenges faced. Data were gathered through the use of mixed method



approach combining qualitative interviews with procurement professionals and quantitative data analysis using tables, charts and analysis of variance. Key challenges identified include limited awareness (33% of respondents agree) and understanding of sustainable procurement principles, inadequate regulatory frameworks (45 percent of respondents), corruption (85 percent of respondents agree) and the dominance of cost considerations over sustainability (87 percent of respondents).

Additionally, the lack of capacity building and stakeholder engagement further hinders progress. Despite these challenges, there are promising opportunities such as growing global demand for sustainable goods, increasing awareness of environmental issues and the potential for job creation through sustainable industries.

2.0 LITERATURE REVIEW

2.1 Importance of Sustainable Procurement in Environmental Management

Sustainable Procurement plays a critical role in environmental management by promoting practices that minimize environmental degradation and support ecological balance. Reduction of carbon footprints is a major factor that contributes to environmental management. Sustainable procurement helps organisations reduce their carbon footprints by selecting suppliers and products that are energy-efficient and have low-emissions (Walker & Brammer 2012). For example, procurement of renewable energy sources or low-carbon materials can decrease greenhouse gas emissions across the supply chain.

By prioritizing products with minimal environmental impact, sustainable procurement reduces the overexploitation of natural resources. The approaches include sourcing materials that are renewable, recycled or have lower water and energy requirements, ultimately supporting biodiversity and resource conservation. In addition, sustainable procurement encourages the purchase of goods designed for durability, recyclability and minimal waste generation which can significantly reduce landfill waste and pollution (Walker *et al.*, 2012). This can include packaging made from recyclable materials and using vendors committed to responsible waste management practices.

Many organisations are held accountable for their environmental impact, making sustainable procurement essential for compliance with environmental regulations and industry standards (Tesla *et al.*, 2016). Sustainable Procurement also enhances organisational reputation as customers and stakeholders increasingly value companies committed to environmental stewardship. Finally, Sustainable Procurement also encourages innovation by incentivizing suppliers to develop eco-friendly products and services thereby contributing to a market shift towards green technologies, which benefits both the organisation and the environment by promoting solutions that reduce environmental harm (Carter & Easton, 2011).



2.2 Key Policies Governing Procurement Practices in Nigeria

Nigeria has established several key policies that govern procurement practices, aiming to improve transparency, efficiency and accountability in public procurement while encouraging sustainable and ethical practices.

- Public Procurement Act (PPA) of 2007: The PPA is Nigeria's foundational procurement law, setting out rules and procedures for public procurement at the national level. It established the Bureau of Public Procurement (BPP) which oversees procurement processes and ensures compliance with the law. The PPA emphasizes principles of transparency, accountability and fair competition providing a framework to prevent corruption and enhance efficiency in procurement (Enejo & Isa, 2014).
- Policy on Public Procurement (NPPP): The NPPP was designed to complement the PPA and provide guidance on ethical procurement, promoting sustainable and socially responsible practices. The policy outlines requirements for engaging suppliers who comply with environmental and social standards, although enforcement of these aspects has been a challenge. (Akinbowale & Oyegoke, 2019).

2.2.3. Environmental Impact Assessment (EIA) Act:

The Act mandates that procurement projects likely to impact the environment undergo environmental assessment before approval. This law ensures that projects adhere to sustainable practices and that environmental protection is a priority in project planning and procurement. (Ogunba, 2019)

- Local Content Act of 2010: The Nigerian Oil and Gas Industry Content Development Act (commonly known as the Local Content Act) aims to promote local sourcing and the participation of Nigerian businesses in procurement, especially in the oil and gas sectors. By encouraging local content, the Act seeks to boost economic growth and reduce dependence on foreign suppliers, which aligns with sustainability goals by reducing environmental costs and greenhouse gas emissions associated with long-distance transport. (Achebe, 2017)
- National Policy on Sustainable Procurement, Environmental and Social Standards (SPESS): This policy was introduced to incorporate sustainability in procurement, the SPESS policy focuses on ensuring that procurement activities align with environmental and social standards. It seeks to promote resource efficiency, reduce environmental harm and improve social outcomes particularly in public sector procurement. (BPP, 2019)
- Economic Recovery and Growth Plan (ERGP) 2017 – 2020: This plan is not solely a procurement policy, it outlines key strategies for boosting economic growth, part of which includes promoting sustainable procurement practices to increase efficiency in government spending and improving infrastructure. (Adekunle, 2018)



These policies collectively form a regulatory framework aimed at improving accountability fostering sustainable practices and promoting local industry within Nigeria's procurement landscape. However, challenges in enforcement and capacity building remain critical areas to address them for achieving holistic sustainable procurement outcomes.

2.3 Sustainable Procurement Initiatives in Nigeria

The domains are still developing, but there have been several notable efforts aimed at integrating environmental and social considerations into procurement practices. They are:

Lagos State Public Procurement Agency (LSPPA): Lagos State has incorporated green procurement principles into its policies, especially in infrastructure development and waste management. The state has prioritized using environmentally friendly materials in public projects, such as road construction and public facilities. By focusing on sustainability, Lagos aims to reduce its carbon footprint and minimize environmental degradation (Ogunba 2019)

Sustainable Procurement Approach: The LSPPA has implemented strategies to enhance transparency and efficiency in procurement. Key measures include establishing technical review committees, appraising procurement plans, setting fair pricing standards, maintaining a contractor database and publishing details of major contracts.

Outcomes: These strategies have improved accountability, proficiency and efficiency among state ministries. However, areas such as establishing thresholds, constituting contract performance audit committees and supervising deliveries require further enhancement.

Lessons Learned: Comprehensive strategies are essential for effective procurement implementation. Continuous monitoring and evaluations are necessary to identify and address gaps in the procurement process.

2.3.1. Nigerian Local Content Act in the Oil and Gas Sector:

The Nigerian Oil and Gas Industry Content Development Act, (NOGICDA) commonly known as the Local Content Act, emphasizes sourcing from local suppliers to promote sustainable economic development. By prioritizing Nigerian suppliers, the Act reduces environmental costs associated with transportation and fosters local manufacturing supporting economic sustainability in the sector (Achebe, 2017).

Sustainable Procurement Approach: The NOGICDA aims to increase indigenous participation by mandating the use of local goods, services and personnel. The Act established the Nigerian Content Development and Monitoring Board (NCDMB) to oversee its implementation.



Outcomes: The Act has led to increased local value creation and human capital development in the oil and gas sector. However, challenges such as corruption, lack of transparency, skills gap and financial issues for domestic companies persist.

Lessons Learned: Effective local content policies require robust anti-corruption measures, capacity-building initiatives and coherent integration with national sustainable development plans. Addressing gender inequalities and ensuring access to financing for local companies are also crucial.

2.3.2. United Nations Sustainable Procurement Pilot Programs

The UN has implemented pilot sustainable procurement programs in collaboration with Nigerian ministries, aiming to incorporate environmental and social criteria into government contracts. This includes choosing suppliers that adhere to environmental protection standards and labour regulations, particularly for projects involving infrastructure and health. (UNEP 2018)

Sustainable Outcomes: These programs have led to the development of guidelines and tools that assist UN agencies in adopting sustainable procurement practices, contributing to the organisation's overall sustainability goals.

Lessons Learned: The success of sustainable procurement initiatives depends on clear guidelines, capacity-building and the commitment of all stakeholders involved in the procurement process.

2.3.3. Dangote Group's Sustainable Supply Chain:

Dangote Group, one of Nigeria's largest companies has initiated sustainable procurement practices that emphasize responsible sourcing and reduced environmental impact. The company collaborates with suppliers who meet environmental standards, particularly in their cement and agriculture sectors, to minimize resource use, energy consumption and waste generation. (Ogunbile 2020)

Sustainable Procurement Approach: The Dangote Group, a leading Nigerian conglomerate, has been working towards integrating sustainability into its supply chain by adopting environmentally friendly practices and ensuring compliance with local content requirements.

Outcomes: While specific outcomes are not publicly detailed, the company's efforts contribute to the broader goal of sustainable industrial practices in Nigeria.

Lessons Learned: Implementing sustainable supply chain practices requires a commitment to environmental stewardship and adherence to local regulations, which can enhance corporate reputation and operational efficiency.



2.3.4. Nigerian Breweries PLC: Nigerian Breweries PLC has committed to sustainable procurement by adopting green building standards in their facilities. They prioritize energy-efficient building materials and eco-friendly designs to reduce emissions and promote resource efficiency. This initiative aligns with the company's broader sustainability goals and supports Nigeria's green economy (Akanni and Oke 2015)

Approach: Nigerian Breweries has implemented sustainable procurement practices by sourcing raw materials locally, reducing environmental impact and promoting social responsibility within its supply chain.

Outcomes: These practices have led to increased local sourcing, reduced carbon footprint and improved relationships with local communities and suppliers.

Lessons Learned: Sustainable procurement can lead to operational efficiencies, cost savings and enhanced corporate social responsibility, contributing to long-term business success.

Lafarge's Green Cement Project in Cross River State.

Overview: Lafarge is one of the largest cement producers in Nigeria, and has implemented sustainable procurement practices in its operations at the Mfamosing plant in Cross River State. The company has adopted strategies that reduce the environmental footprint of cement production, focusing on sourcing local raw materials and using alternative fuels in the production process.

Sustainable Procurement Approach:

i. Local Sourcing: Lafarge prioritizes the procurement of raw materials from local suppliers which reduces transportation emissions and supports the local economy.

ii. Use of Alternative Fuels: The company has integrated alternative fuels such as biomass (agricultural wastes) into its cement kilns, reducing reliance on fossil fuels and minimizing carbon emissions.

iii. Member of the United Nations Global Compact: Lafarge (now part of LafargeHolcim, rebranded as Holcim Group) is a member of the United Nations Global Compact and as a member, the company commits to aligning its operations and strategies with ten universally accepted principles in the areas of human rights, labor, environment, and anti-corruption. Lafarge has been recognized for its efforts in promoting sustainability and corporate social responsibility, which align with the goals of the Global Compact. This membership emphasizes its commitment to sustainable development and responsible business practices globally.

Outcomes:

A significant reduction in CO₂ emissions due to the use of alternative fuels.

Strengthening of local supply chains and creation of jobs for local communities.

Reduced environmental impact through the sustainable sourcing of raw materials.

Lessons Learned:

Local Sourcing Drives Sustainability: Prioritizing local suppliers not only reduces environmental impact but also strengthens the local economy, creating a win-win situation for businesses and communities.



Innovation in Energy Use: The use of alternative fuels such as biomass can substantially reduce carbon emissions in energy-intensive industries. (Lafarge Africa PLC 2019)

Niger Delta Development Commission and Sustainable Infrastructure Projects

Overview: The Niger Delta Development Commission (NDDC) has embarked on several infrastructure projects aimed at fostering sustainable development in the Niger Delta, including the South-South states. The commission has incorporated sustainable procurement principles into these projects, particularly in housing and road construction, to mitigate the environmental impact of development activities. The Niger Delta region, in particular, experiences severe pollution, deforestation, and other ecological damages that harm local communities and ecosystems. These issues are exacerbated by the disregard for environmental regulations and the lack of effective enforcement mechanisms. Addressing these environmental challenges requires concerted efforts from government bodies, businesses, civil society organizations, and international stakeholders. Recent initiatives, such as the Niger Delta Development Commission's (NDDC) conference on "Renewed Hope for Sustainability in the Niger Delta," held on July 30, 2024, have begun to address these concerns. The conference focused on topics such as environmental degradation and remediation, with resolutions aimed at tackling the region's environmental issues.

For sustainability to happen in the Niger Delta region, Prof Chukwu stressed the need for commitment, collaboration and innovative solutions from development agencies of which NDDC is one. More focus has to be placed on professional development and capacity-building initiatives. He also emphasized that our professional goals should go hand in hand with environmental responsibility so that our ecological integrity will not suffer when we prosper economically.

Sustainable Procurement Approach:

Eco-friendly Building Materials: In its housing projects, the NDDC has started using sustainable materials such as recycled concrete and locally sources materials that have a lower environmental impact.

Sustainable Road Construction: The commission has also introduced environmentally friendly practices in road construction by using permeable materials and efficient drainage systems to reduce flooding and erosion, which are critical environmental concerns in the region.

Outcomes: Improved resilience of infrastructure projects to the region's challenging environmental conditions, such as flooding and soil erosion. Lower carbon footprint in construction activities due to the use of recycled and local materials and; enhanced sustainability and durability of public infrastructure, reducing the need for frequent repairs.

Lessons Learned:

Sustainability in infrastructure: Sustainable procurement in public infrastructure projects not only helps protect the environment but also leads to more durable and resilient infrastructure, especially in regions prone to environmental degradation.

i. **Leveraging Local Resources:** Utilizing locally available resources for infrastructural projects reduces costs, supports local economies and minimizes environmental impact from transportation. (NDDC 2020).



Akwa Ibom State's Green Public Procurement for Renewable Energy Projects.

Overview: Akwa Ibom State has become a pioneer in the adoption of green public procurement (GPP) for renewable energy projects. The state government has partnered with private companies to procure solar energy solutions for rural electrification, focusing on environmentally sustainable practices in the procurement process.

Sustainable Procurement Approach:

Renewable Energy Solutions: The state government has procured solar panels and other renewable energy technologies for off-grid rural communities, promoting sustainability in energy provision.

Environmental and Social Criteria: The procurement process includes criteria that prioritize companies that demonstrate environmental responsibility and social inclusion, such as employing local workers and ensuring environmental safety.

Outcomes: Reduction in greenhouse gas emissions due to the shift from fossil-based energy to renewable energy in rural areas. Improved energy access for remote communities, enhancing local livelihoods and reducing poverty. Development of local expertise in renewable energy through partnerships with suppliers and training programs for workers.

Lessons Learned:

Sustainable Energy Procurement Benefits Communities: Green public procurement in energy projects has a direct impact on local communities, improving quality of life while reducing environmental degradation.

i. **Public-Private Partnerships (PPP) are key:** Collaboration between the government and private sector is crucial for the successful implementation of sustainable procurement initiatives, particularly in high-tech sectors like renewable energy. (Udoh and Etim 2021).

4. Delta State's Waste Management and Sustainable Procurement in Public Health.

Overview: Delta State has made strides in waste management and sustainable procurement in its public health sector. In collaboration with waste management firms, the state government has implemented sustainable procurement policies that promote recycling and the use of eco-friendly materials in hospitals and other public health facilities.

Sustainable Procurement Approach:

Waste-to-Energy Initiatives: The state has partnered with companies to convert waste from public health facilities into energy, reducing landfill use and promoting a circular economy.

Recycled Materials in Procurement: Public Health facilities are encouraged to procure equipment and materials made from recycled or biodegradable products, minimizing environmental impact.

Outcomes: A reduction in medical waste being sent to landfills through the waste-to-energy program. Enhanced environmental sustainability in the health sector by promoting the use of eco-friendly and recycled products. Reduced public health risks associated with improper waste disposal in medical facilities.



Lessons learned:

Circular Economy in Public Health: Sustainable procurement practices in public health can foster a circular economy by reducing waste and encouraging recycling. Sustainable Waste Management Solutions: Waste-to-energy initiatives can address environmental challenges and simultaneously provide renewable energy, benefitting both the environment and the local economy (Delta State Ministry of Health 2020).

2.4 Key Policies Governing Procurement in Nigeria

Nigeria has established several key policies that govern procurement practices, aiming to improve transparency, efficiency and accountability in public procurement while encouraging sustainable and ethical practices. Below are some of them.

2.4.1. Public Procurement Act (PPA) of 2007: The PPA is Nigeria's foundational procurement law, setting out rules and procedures for public procurement at the federal level. It established the Bureau of Public Procurement (BPP) which oversees procurement processes and ensures compliance with the law. The PPA emphasizes principles of transparency, accountability and fair competition, providing a framework to prevent corruption and enhance efficiency in public procurement. (Enejo & Isa, 2014).

2.4.2. National Policy on Public Procurement (NPPP). The NPPP was designed to complement the PPA and provide guidance on ethical procurement, promoting sustainable and socially responsible practices. The policy outlines requirements for engaging suppliers who comply with environmental and social standards, although enforcement of these aspects has been a challenge. (Akinbowale & Oyegoke, 2019)

2.4.3. Environmental Impact Assessment (EIA) Act: The Act mandates that procurement projects likely to impact the environment undergo environmental assessment before approval. This law ensures that projects adhere to sustainable practices and that environmental protection is a priority in project planning and procurement. (Ogunba, 2019).

2.4.4. Local Content Act of 2010: The Nigerian Oil and Gas Industry Content Development Act (commonly known as the Local Content Act) aims to promote local sourcing and the participation of Nigerian businesses in procurement, especially in the oil and gas sector. By encouraging local content, the Act seeks to boost economic growth and reduce dependence on foreign suppliers, which aligns with sustainability goals by reducing environmental costs associated with long-distance transport.

2.4.5. National Policy on Sustainable Procurement, Environment and Social Standards (SPESS): This policy was introduced to embed sustainability in procurement. It focuses on ensuring that procurement activities align with environmental and social standards. It seeks to promote resource efficiency, reduce environmental harm and improve social outcomes, particularly in public sector procurement. (BPP, 2019).

2.4.6. Economic Recovery and Growth Plan (ERGP) 2017 – 2020: While not solely a procurement policy, the ERGP outlined key strategies for boosting economic growth, part of which included promoting sustainable procurement practices to increase efficiency in government spending and improve infrastructure (Adekunle, 2018).



2.5 The Global Context of Sustainable Procurement Practices

Sustainable Procurement Practices have gained significant global attention, driven by an increased focus on environmental protection, social equity and economic resilience. Key trends and frameworks in the global context include:

2.5.1 Integration of Sustainable Development Goals: Sustainable Procurement aligns with the United Nation's SDGs, especially Goal 12, which calls for responsible consumption and production. Many countries and organisations have integrated SDG principles into procurement practices, using their buying power to promote products and services that reduce environmental harm and promote social well-being. (UN 2015).

2.5.2 ISO 20400: Sustainable Procurement Standard: ISO 20400 published in 2017, provides international guidelines for integrating sustainability into procurement processes. It promotes sustainability across supply chains by outlining practices that address environmental, social and economic impacts. This standard has been widely adopted by companies worldwide as a benchmark for responsible procurement (ISO, 2017).

2.5.3 Green Public Procurement (GPP): Several countries, especially in the European Union have adopted Green Public Procurement policies. These policies require government agencies to prioritize products and services with lower environmental impacts. GPP has been instrumental in reducing greenhouse gas emissions, minimizing waste and encouraging markets for sustainable products (Testa *et al.*, 2016).

2.5.4 Circular Economy Initiatives: Sustainable procurement is closely tied to circular economy practices, which aim to keep resources in use for as long as possible. The European Green Deal, for example promotes circularity in procurement by encouraging the selection of products designed for durability, recyclability and minimal environmental impact. This approach reduces resource depletion and waste generation (Geissdoerfer *et al.*, 2017).

2.5.5. Socially Responsible Procurement: Beyond environmental impact, global sustainable procurement increasingly emphasizes social responsibility, addressing issues like fair wages, labour rights and supplier diversity. For example, the UK and U.S. governments have incorporated social criteria in procurement policies to ensure ethical labour practices and inclusivity in supply chains (McCrudden, 2004).

2.5.6. Sustainable Supply Chain Management (SSCM): Companies like Walmart, IKEA, and Unilever have incorporated SSCM into their operations, requiring suppliers to meet sustainability criteria. These organisations use procurement practices to reduce carbon footprints, promote responsible sourcing and uphold labour standards. SSCM initiatives highlight how private sector players can set industry benchmarks for sustainability (Carter & Easton, 2011).

2.5.7. Sustainable Procurement in International Development: Organisations like the World Bank and the United Nations have embedded sustainable procurement in their operations, ensuring that projects in developing regions meet environmental and social standards. This approach promotes local sustainability by prioritizing low-impact technologies and encouraging capacity-building in these regions (UNEP, 2012). These global trends reflect a shift toward procurement practices that balances environmental, social and economic objectives, achieving a holistic approach and promoting a sustainable future.



2.6 Sustainable Procurement Guidelines and Best Practices.

Sustainable Procurement guidelines and best practices aim to help organisations incorporate environmental, social and economic considerations into purchasing decisions ensuring long-term positive impacts. Below are some widely recognized guidelines and best practices. 2.6.1 Establishing Clear Sustainability Criteria: Organisations should define sustainability criteria based on the product lifecycle, including energy efficiency, resource conservation and recyclability (Walker & Brammer, 2012). By setting these criteria upfront, organisations can ensure that products or services meet environmental and social standards and facilitate suppliers' alignment with sustainability goals (ISO, 2017).

2.6.2 Supplier Engagement and Collaboration: Engaging suppliers to promote sustainable practices is essential. This can involve working with suppliers to reduce emissions, adopt fair labour practices and improve energy efficiency. Building strong relationships enables companies to ensure sustainable practices across the supply chain (Carter & Easton, 2011). Supplier assessments, audits and training sessions are also effective in driving sustainable behaviour among vendors.

2.6.3 Lifecycle Cost Analysis (LCA): Using LCA allows procurement teams to assess products and services based on total cost, including initial price, maintenance, disposal and environmental impacts. This approach enables decision-makers to choose options that may be more sustainable and economical over time (Tesla et al., 2016).

2.6.4 Adopting Green Public Procurement (GPP): Many government entities worldwide use GPP to incorporate environmental criteria into their purchasing. GPP practices involve choosing products that are energy-efficient, less polluting and generate minimal waste. This is a best practice for public sector procurement and is increasingly recognised as a powerful tool for reducing environmental impacts (Kunzlik, 2013).

2.6.5 ISO 20400 Sustainable Procurement Standard: ISO 20400 provides an internationally accepted framework for sustainable procurement practices. It emphasizes integrating sustainability throughout the procurement process, from setting policies to managing contracts. Following ISO 20400 helps organisations standardize their sustainability efforts and align them with global best practices (ISO, 2017).

2.6.6 Risk Management in Supply Chains: Sustainable procurement includes identifying and managing risks related to environmental damage, social non-compliance and governance issues in supply chains. Regular risk assessments help organisations anticipate and mitigate potential negative impacts associated with their suppliers, supporting resilience and reputation management (Giunipero *et al.*, 2012).

2.6.7 Encouraging Circular Economy: Sustainable procurement also involves promoting a circular economy by choosing suppliers and products that support reuse, recycling and resource conservation. This approach reduces waste and maximizes resource efficiency, fostering a shift from a linear to a circular procurement model (Geissdoerfer et al., 2017).



2.6.8 Transparency and Accountability: Clear documentation, reporting and transparency in procurement decisions enhance accountability. Organisations can adopt sustainability reporting frameworks to regularly assess and communicate procurement-related environmental and social impacts, thereby enhancing stakeholder trust and aligning with global standards (Luzzini et al., 2015)

2.7 Analysis of Existing Sustainable Procurement Practices in Nigeria.

In the public sector policies and Initiatives, the Public Procurement Act (PPA) OF 2007 is Nigeria's foundational law on procurement. It mandates transparency, accountability and competition, although it does not directly address sustainability. However, some Nigerian states like Lagos have integrated sustainable criteria in procurement, particularly in environmental sectors such as waste management and public infrastructure (Ogunba, 2019). This shows a growing recognition of sustainable procurement's importance yet sustainability criteria are not universally adopted across all levels of government.

Nigeria's Environmental Impact Assessment (EIA) Act requires projects with potential environmental impacts to undergo assessment before approval. This law indirectly affects procurement decisions, particularly for large infrastructure projects, by emphasizing the selection of environmentally friendly materials and practices (Ogungbile, 2020). Despite this, enforcement remains limited, with some procurement processes not consistently aligning with environmental standards (Akinyele et al., 2018).

Some Nigerian corporations have voluntarily adopted sustainable procurement practices. The Dangote Group, for example integrates sustainability into its supply chain by sourcing from suppliers who meet environmental and social standards. This approach reduces the company's ecological footprint and aligns with global sustainable supply chain management practices (Ogungbile, 2020). However, such initiatives are primarily concentrated among larger corporations with smaller enterprises often lacking the resources or awareness to prioritize sustainability.

International bodies like the United Nations Environment Programme (UNEP) and the World Bank have introduced sustainable procurement guidelines in Nigeria. For example, UNEP's pilot programs with local agencies have promoted sustainable procurement by encouraging environmentally responsible supplier selection and compliance with social standards (UNEP, 2018). These initiatives are often tied to development projects, which helps to set sustainability benchmarks but lacks broader applicability without consistent national policies. Sustainable procurement in Nigeria however, faces significant barriers including limited regulatory enforcement, inadequate awareness of sustainability benefits and a lack of technical capacity. Many procurement officials have limited training in sustainable procurement practices making it difficult to incorporate environmental and social criteria in supplier evaluations (Adebanjo & Adeola, 2019). Furthermore, cost concerns often drive procurement decisions, making it challenging to justify higher initial expenses for sustainable products despite their long-term value.



The Bureau of Public Procurement (BPP) has shown interest in developing frameworks for sustainable procurement, particularly through the National Policy on Sustainable Procurement, Environment and Social Standards (SPESS). This policy aims to formalize sustainability requirements in procurement processes, encouraging public agencies to prioritize suppliers with strong environmental and social records (BPP, 2019). While the policy is promising, its effectiveness will depend on consistent implementation and monitoring.

2.8 The Criteria for assessing Sustainable Procurement Effectiveness in Nigeria.

2.8.1. Environmental Impact: The degree to which procurement practices reduce environmental harm including carbon emissions, energy use, resource depletion and waste generation is a critical criterion. For example, adopting green procurement policies that prioritize eco-friendly materials and energy efficient products can minimize the environmental footprint (Akinyele et al., 2018)

Metrics such as reductions in greenhouse gas emissions, resource conservation and adherence to Environmental Impact Assessment (EIA) requirements can be used to evaluate effectiveness.

2.8.2 Social Equity and Inclusivity: Sustainable procurement should promote social equity by addressing issues like fair labour practices, human rights and inclusivity in supplier selection. It is crucial to assess whether procurement supports local suppliers, fosters community development and avoids exploitation (Adebajo & Adeola, 2019). The inclusion of small and medium-sized enterprises (SMEs) and the adherence of suppliers to labour laws are measurable indicators.

2.8.3 Economic Sustainability: Effective sustainable procurement should result in cost savings over the long term through lifecycle cost analysis (LCA). This criterion examines whether procurement decisions balance initial costs with long-term benefits, such as reduced maintenance and disposal costs (Walker & Brammer, 2012). Assessing economic sustainability also involves evaluating the contribution of procurement practices to local economic development, such as job creation and the use of local materials.

2.8.4 Compliance with Policies and Regulations: The alignment with Nigeria's regulatory framework, including the Public Procurement Act, and the National Policy on Sustainable Procurement, Environment and Social Standards (SPESS) is a key criterion (Ogunba, 2019). Regular audits and reviews of procurement processes can ensure adherence to these laws and policies.

2.8.5 Supplier Sustainability Performance: The sustainability practices of suppliers including their environmental management systems, social responsibility initiatives and compliance with sustainability criteria are essential indicators of procurement effectiveness (Carter & Easton, 2011). Organisations can use supplier evaluation metrics such as the use of eco-certifications, waste reduction and initiatives and ethical labour practices.

2.8.6 Stakeholder Engagement and Awareness: The extent of stakeholder involvement, including government agencies, private sector actors and civil society in the procurement



process is another assessment criterion. Effective sustainable procurement should include training and awareness programs for procurement officers and suppliers (UNEP, 2018). Metrics include the frequency of training sessions, stakeholder feedback and the level of public awareness about sustainable procurement policies.

2.8.7 Performance Monitoring and Reporting: Monitoring and reporting mechanisms are vital to assess the progress and outcomes of sustainable procurement practices. This involves tracking procurement activities against sustainability goals and publishing regular reports (Luzzini et al., 2015). Key performance Indicators (KPIs) include the number of sustainable products purchased, energy saved and waste reduced.

2.8.8 Integration of Circular Economy Principles: Evaluating whether procurement supports a circular economy by prioritizing products and services designed for durability, reparability and recyclability is essential (Geissdoerfer et al., 2017). The percentage of recyclable or reusable materials procured and waste reduction through product lifecycle management are key measures.

2.8.9 Capacity Building: Assessing whether sustainable procurement practices are supported by adequate training, resources and institutional capacity is vital. Capacity-building initiatives for procurement officers and suppliers can improve compliance and effectiveness (Akinyele et al., 2018).

3.0 METHODOLOGY

3.1 Materials

The materials used to conduct this research are structured questionnaires (surveys) and interviews. The Questionnaire was structured in sections that addressed Economic, Social and Environmental criteria of Sustainable Procurement Practices. Questions that addressed the use of technology, innovations and e-procurement in procurement practices (economic criteria), Questions that addressed the consideration of human rights, fair labour practices and sustainability conscious suppliers and vendors of organisations and suppliers with eco-friendly products. For the interviews conducted, the interviewees discussed how their organizations impacted their communities positively as a result of their sustainable procurement practices.

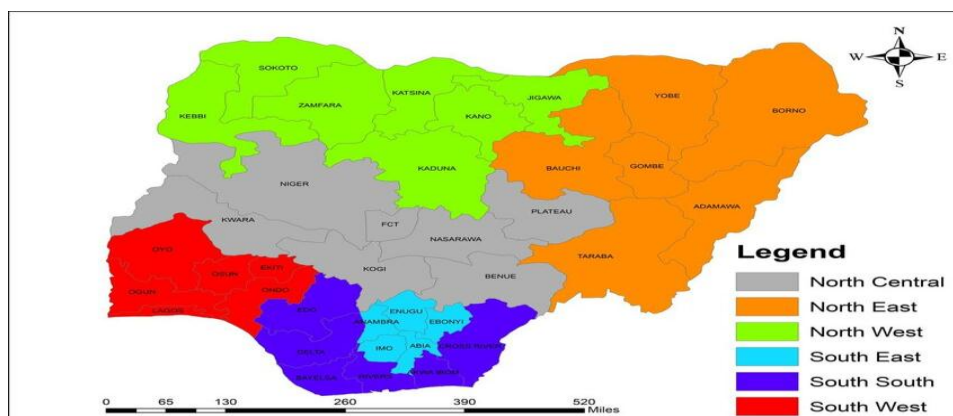
3.2 Description of Study Area.

The South South region of Nigeria is one of the six geopolitical zones of Nigeria. It points out both a geographical and political region of Nigeria's Eastern coast. The region spans approximately 85,303 square kilometres. It comprises of six states which are: Akwa-Ibom, Bayelsa, Cross Rivers, Delta, Edo, and Rivers States. The zone stretches along the Atlantic Ocean from the Bight of Benin coast in the west to the Bight of Bonny coast in the east. It covers much of the Niger Delta which is significant in the Environmental and Economic development of the region.

Geographically, the zone is known for the Central African Mangroves in the coastal far south while the major inland regions from east to west, the Cross-Sanaga-abaioko coastal forests, Cross-Niger transition forests, Niger Delta swamp forests and Nigerian lowland forests. The

South-South is only 5% of Nigerian territory but it contributes immensely to the Nigerian economy due to extensive oil and natural gas reserves. 26 million is the region's population comprising about 12% of the entire population of Nigeria.

The South West region of Nigeria is located in the south western corner of the country. It covers an area of approximately 79,665 square kilometres, representing about 8.5% of Nigeria's total landmass. This region is characterized by a mix of lowlands and uplands. The landscape includes undulating plains, rocky outcrops and ridges, particularly in Ekiti and Ondo States. The region is rich in natural resources including limestone, granite, bitumen and clay. This geographic diversity makes the South West region one of Nigeria's most resourceful and agricultural productive areas. Its coastal location also enhances trade and economic activities.



Map of Nigeria showing boundaries of six geopolitical zones.png

The questionnaires were distributed to the selected samples to gather quantitative data on sustainable procurement practices. Interviews were conducted with key stakeholders for in-depth qualitative insights and experiences regarding sustainable procurement practices.

Section A is used to obtain the demographic information of respondents which include age, sex, work designation, academic qualification, years of work experience and region of work location.

Section B gets information about the economic dimension of sustainability in the workplace. They are cost savings, impact of corruption, technology and innovation in sustainable procurement practices.

Section C helps to gather information about the social integration, human rights, fair labour practices.

Section D is used to get information about the Environmental criteria. They are the impacts of operations and procurement activities on the environment, environmental degradation, greenhouse gas emissions and eco-friendly products.



Section E is used to gather information on personal challenges in incorporating sustainability to our processes, adaptability, opinions on how developed Nigeria has been in terms of sustainable procurement.

The Researcher solely distributed hard copies of questionnaires to Procurement officers and staff of Delta State Procurement Commission and online copies to various procurement officers and workers across the selected States. The filled copies were collected and compiled without the help of a Research Assistant.

4.0. RESULTS AND DISCUSSION

Presentation of Results

Table 4.1: Analysis of Demographic Representation of Data Gathered

Characteristics	Category	Frequency	Percentage
Age	25-34	32	24
	35-44	68	52
	45-54	20	15
	55-64	0	0
	65+	12	9
	TOTAL	132	100
Sex	Male	92	70
	Female	40	30
	Total	132	100
Work Designation	Engineer	32	24.2
	Procurement Officer	32	24.2
	S/P Manager	8	6.1
	Info Technologist	12	9.1
	Others	48	36.4
	Total	132	100
Academic Qualification	HND	4	3
	BSc/BEng	92	70
	MSc/MBA	32	24
	PhD	4	3
	Total	132	100

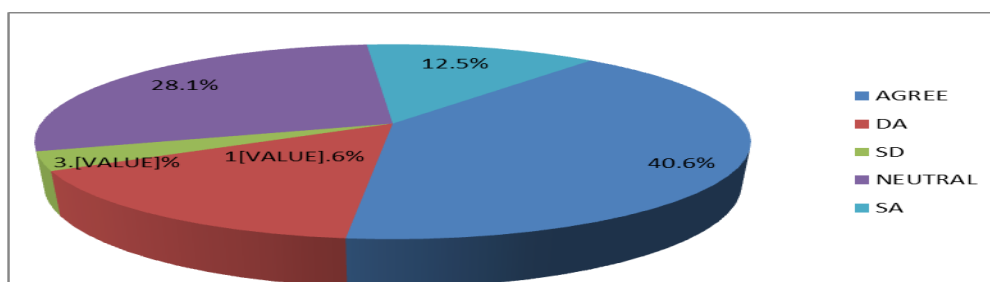


Chart 4.1.1 showing the percentage of Respondents agreeing that their organisation's procurement activities and operations contribute to environmental degradation.

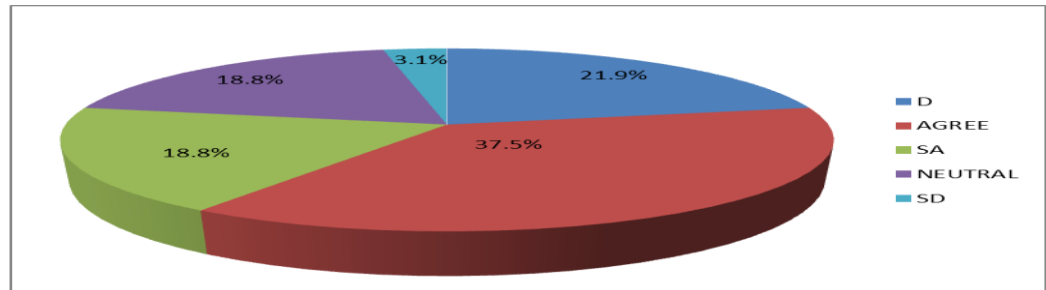


Chart 4.1.2 showing the percentage of Respondents agreeing that Suppliers and Vendors selected in their organisations are based on availability of eco-friendly products.

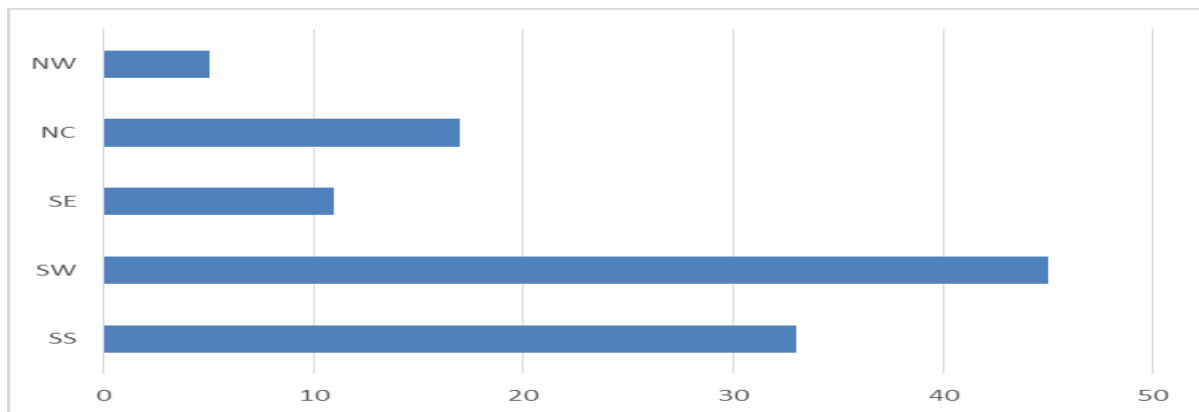


Chart 4.1.3 showing the representation of Respondents in different regions of Nigeria agreeing that Suppliers and Vendors selected in their organisations use eco-friendly products. NW is North West region, NC is North Central region, SE is South Eastern region, SW is South Western Region while SS is South-south region of Nigeria.

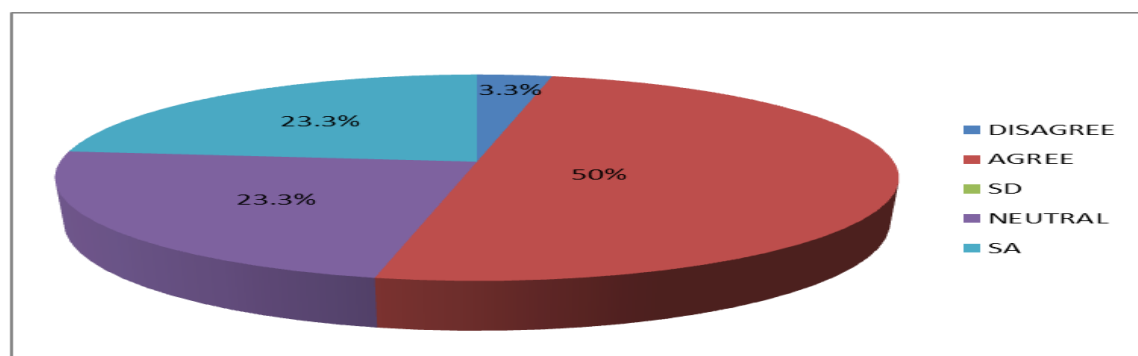


Chart 4.1.4 showing the percentage of Respondents agreeing that there is an increasing awareness of Environmental impacts in their organisations made by unsustainable procurement practices.

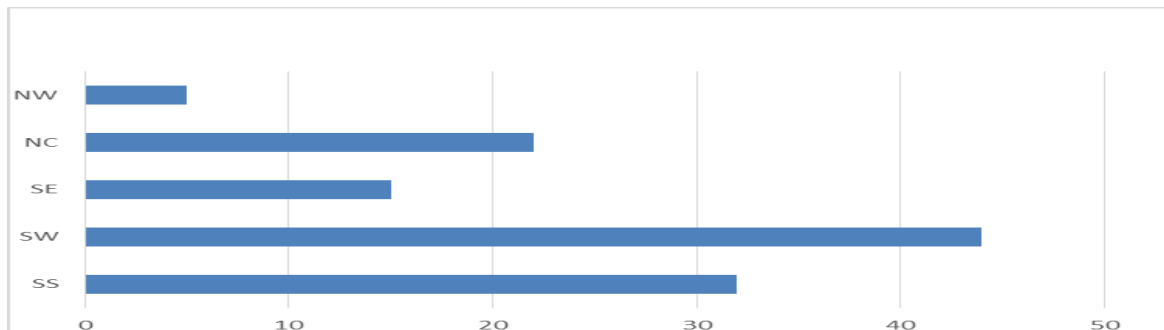


Chart 4.1.5 showing a pictorial representation of Respondents in different regions in Nigeria agreeing that there is an awareness of environmental impacts made by unsustainable procurement practices.

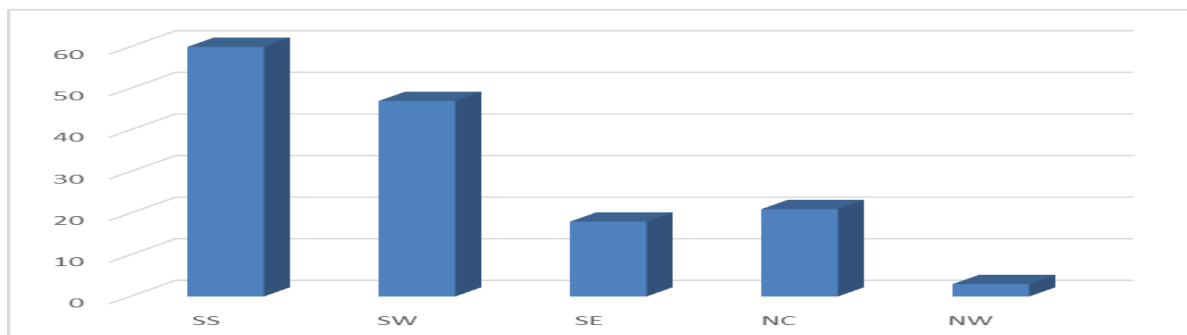


Chart 4.1.6 showing a pictorial representation of Respondents in different regions in Nigeria whose organisations integrate sustainability in their procurement processes.

4.2. Discussions

The findings of this study are consistent with those of previous research. For example the 60% of respondents in the South South who cited that their organisations are beginning to integrate sustainability in their procurement processes is in line with Ojo, E., & Gbadebo, A.M. (2022) whose study highlights the importance of prioritizing sustainability in procurement practices within developing countries, focusing on Nigeria. It discusses environmental implications of current procurement methods and advocates for adopting sustainability frameworks to enhance environmental performance which agrees with the result in Chart 4.1.1

Chart 4.1.4 shows that 50% of respondents agree that there is now an increasing awareness of environmental impact which are climate change and impacts made by unsustainable procurement practices. This finding is now in contrast with Akinraedewo & Ojo (2019) that



identified challenges such as inadequate legal frameworks, lack of awareness and financial constraints, emphasizing the need for strategic policy implementation to mitigate environmental degradation. This study agrees with Brammer and Walker (2011) who studied sustainable procurement in developing economies and its role in mitigating environmental degradation present in procurement practices which is in consonant with Chart 4.1.2 where 37.5 percent agree that vendors and Suppliers are selected consciously with availability of eco-friendly products to minimise environmental impact.

Thematic Analysis of Interview on Sustainable Procurement

The interview with Okiemute Imonifano, the Technical Lead and Chief Procurement Officer at Glintpoint Automobile in Lagos, South West Nigeria, explores the challenges and prospects of sustainable procurement practices in Nigeria. Here's a thematic analysis of the key points:

Challenges of Sustainable Procurement:

- **Supply Chain Disruptions:** Economic factors create a deficit in parts availability, hindering smooth procurement.
- **Waste Management:**
 - Non-biodegradable waste generation poses environmental challenges.
 - Lack of readily available recycling plans increases waste storage and disposal issues.
- **Limited Access to Sustainable Materials:**
 - Quality, locally produced sustainable products are scarce.
 - Reliance on imports of lower-quality materials due to cost pressures.
- **Weak Regulatory Enforcement:** Regulatory bodies like SON (Standards Organization of Nigeria) need stronger enforcement to ensure product quality.
- **Procurement Mindset:**
 - Procurement officers often focus on short-term gains and cost-cutting, neglecting long-term sustainability.
 - Lack of awareness about the environmental and social impacts of procurement decisions.

Prospects for Sustainable Procurement:

- **Waste Recycling:**
 - Partnerships with individuals who repurpose waste materials into artworks create value and reduce waste.
 - Collaboration with foundries to recycle metallic waste.
- **Social Benefits:**
 - Funds from recycling initiatives can be used for social causes like supporting schools.
- **Improved Regulations:** Stronger enforcement of quality standards by regulatory bodies can ensure procurement of durable products.



- **Education and Awareness:** Educating procurement officers on the long-term benefits of sustainable procurement practices.

Impact of Sustainable Procurement:

- **Improved Job Quality:** High-quality materials lead to better product quality and performance.
- **Market Stability:** Sustainable practices can stabilize costs and pricing.
- **Environmental Benefits:** Reduced waste and responsible waste management improve the environment.
- **Social Development:** Recycling initiatives and social causes supported through sustainable procurement contribute positively to society.
- **Economic Growth:** Sustainable procurement practices can lead to cost savings and improved efficiency in the long run.

Overall, the interview highlights the need for a multi-pronged approach to promote sustainable procurement in Nigeria. This includes addressing supply chain challenges, strengthening regulations, raising awareness among procurement officers, and developing robust waste management strategies.

5.0 CONCLUSION AND RECOMMENDATIONS

5.1. Conclusion

From the study, the South West region of Nigeria are the most environmentally friendly in their suppliers and vendors' selection as they seek only those with eco-friendly products and practices. The South-west region of Nigeria also have the most awareness of environmental impact caused by procurement practices. In essence, the South West region shows the highest level of adoption of sustainable procurement practices which is attributed to better policy enforcement and awareness. Regions with clear policies and awareness campaigns achieve better environmental outcomes. The absence of stringent regulations and incentives for adopting green practices limits progress in some areas. The South South region according to this survey integrates sustainability in their procurement practices with a holistic approach the most with 60% of respondents agreeing to it.

5.2. Recommendations

Strengthen Policy Frameworks: Region-specific sustainable procurement regulations should be introduced and enforced. Policies targeting oil industry practices should be prioritized in the South South while the South-West should focus on urban infrastructure sustainability.

5.2.2 Capacity Building and Awareness Campaigns: Organise training programs and public awareness campaigns to educate stakeholders about the benefits of sustainable procurement practices.



5.2.3. Provide Incentives for Green Procurement: Encourage organisations to adopt green practices by offering tax breaks, subsidies and recognition awards.

5.2.4 Promote Collaborative Governance: Establish regional councils to foster collaboration between public, private and community stakeholders to design and monitor sustainable procurement initiatives.

5.2.5 Leverage Technology: Implement technology-based monitoring systems to track and measure the environmental impacts of procurement activities, ensuring transparency and accountability.

5.2.6 Encourage Research and Innovation: Support studies and innovations that explore region-specific sustainable solutions especially in addressing oil pollution and waste management in the South-South region.

Competing Interest

The authors declare that no conflicting interest exist in this paper.

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