Sustainability & Responsible Management Practices in Supply Chain Operations in Nigeria

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Abstract
This study investigates how sustainability and responsible management practices enhance supply chain resilience in Nigeria. Combining surveys and interviews with 284 professionals, it reveals positive links between green, social, and ethical practices with resilience. While firms benefit from concrete sustainability initiatives, challenges like emissions measurement and community engagement persist. This research, unique in focusing on a developing African economy, underscores the need for integrated sustainability practices through policies, partnerships, and operationalizing goals. It demonstrates the business case for proactive sustainability, offering not just moral benefits but also risk mitigation and continuity advantages. Moving forward, avoiding superficial decoupling and resource commitments are crucial for success.
***Keywords**: Supply chain resilience, Responsible management, Sustainability, Green technology, Ethical sourcing, Supply source integrity*

Introduction
Sustainability and responsible management practices have emerged as critical imperatives for organizations globally, driven by escalating stakeholder expectations and pressing environmental and

social challenges (Carter and Rogers, 2008; Kleindorfer et al., 2005). These practices encompass a spectrum of initiatives ranging from environmental stewardship to ethical sourcing policies and fair labour standards. In this study, sustainability refers to initiatives aimed at minimizing environmental impact and fostering societal well-being, while responsible management practices encompass ethical conduct, transparency, and stakeholder engagement within organizational operations and supply chains.

Amid heightened scrutiny from regulators, investors, customers, and civil society, organizations are increasingly compelled to address issues such as climate change, pollution, human rights abuses, and unethical working conditions (Barua et al., 2021). The imperative for ethical and sustainable business conduct has been underscored by high-profile corporate scandals and tragedies, such as the Rana Plaza factory collapse in Bangladesh. Consequently, adopting sustainability and responsible management practices is no longer discretionary but essential for maintaining public trust and securing the social license to operate.

Integrating sustainability into supply chain operations offers multifaceted benefits, including enhanced efficiency, cost reduction, improved brand reputation, and responsible business conduct (Montabon et al., 2016). Research demonstrates that sustainability practices generate both monetary and non-monetary advantages, making them indispensable for competitive advantage (Annarelli et al., 2018). For instance, environmentally sustainable supply chains can reduce energy, waste, and transportation costs through initiatives like green procurement and packaging minimization (Teixeira et al., 2018).

Furthermore, socially responsible practices, such as ethical sourcing policies and community engagement, foster customer loyalty, strengthen supplier relationships, and enhance corporate image. Consumers increasingly favor ethical brands and are willing to pay premiums for sustainable products. Responsible sourcing practices help firms secure reliable suppliers, while community initiatives build trust among local stakeholders.

Despite the compelling benefits of sustainability and responsible management practices, research in this area has predominantly focused on developed economies, with limited investigation in emerging markets like Nigeria (Jiang et al., 2020; Sánchez-Flores et al., 2020). This gap in literature is particularly pronounced given the unique challenges and opportunities that emerging markets present. In Nigeria, factors such as weak environmental policies, underdeveloped logistics networks, and social issues pose distinct barriers to sustainability in supply chains (Orji et al., 2019). Understanding these contexts is essential as global supply chains increasingly pivot towards emerging markets.

Therefore, this study aims to address this knowledge gap by examining the role of sustainability and responsible management practices as potential competitive advantages in supply chain operations in Nigeria. With its extensive market and population bases, Nigeria holds strategic importance for the future of global supply chains. Utilizing a mixed methods approach, combining surveys and interviews, this study seeks to develop theoretical and practical understanding tailored to Nigerian industries. Specifically, the study aims to uncover how sustainability practices influence key supply chain performance indicators in Nigeria, identify effective strategies for integrating ethics and responsibility across supply chain functions, and highlight critical barriers and approaches to overcome them.

To achieve these aims, the study will focus on the following research questions:

RQ1: How do ethical sourcing practices relate to specific dimensions of supply chain resilience in Nigerian industries?

RQ2: What is the relationship between environmental sustainability initiatives and particular indicators of supply chain resilience in the Nigerian context?

RQ3: How do socially responsible practices impact identified aspects of supply chain resilience within Nigerian industries?

Literature Review

Sustainability and Responsible Management Practices

Sustainability and responsible management practices have garnered significant attention in contemporary supply chain operations, driven by escalating stakeholder expectations and environmental concerns (Elkington, 1994; Arowoshegbe et al., 2016). These practices encompass a range of initiatives aimed at promoting long-term sustainability and positive societal impact, including environmentally conscious actions, social responsibility initiatives, and ethical decision-making.

Within supply chain operations, sustainability involves minimizing environmental impacts, promoting resource efficiency, and embracing social responsibility (Sarkis et al., 2012). Studies have demonstrated the positive effects of sustainability practices on supply chain performance, including cost reduction, operational efficiency enhancement, and reputation improvement (Seuring et al., 2008; Carter and Rogers, 2008; Montabon et al., 2016).

Responsible management practices encompass ethical considerations, stakeholder engagement, and corporate social responsibility initiatives (Maignan et al., 2005). Engaging in responsible management practices leads to a positive organizational image, improved customer loyalty, and enhanced brand reputation (Sen et al., 2006; Choi and Ng, 2011).

Benefits of sustainability

The benefits of sustainability practices are multifaceted and encompass various aspects of supply chain operations. By promoting innovation, resource efficiency, and waste reduction, sustainable supply chains drive profitability and competitive advantage (Montabon et al., 2016; Sarkis et al., 2012). Additionally, sustainability aligns with changing customer preferences, attracts socially conscious investors, and fosters long-term business resilience (Gunasekaran and Irani, 2014; Linton et al., 2007).

Implementing green supply chain practices spurs innovation in emerging markets like Nigeria, leading to the development of context-specific solutions for environmental and social challenges (Caiado et al., 2022). These initiatives promote resource efficiency, reduce environmental footprints, and strengthen stakeholder relationships, enhancing operational effectiveness and cost efficiencies (Agyemang et al., 2022; Luthra and Mangla, 2018).

Moreover, proactive sustainability strategies bolster business resilience against rising environmental and social risks in emerging markets (Kumar and Rahman, 2015). By focusing on mitigation and adaptation, firms can navigate challenges such as climate change impacts and regulatory changes, ensuring long-term viability.

Challenges to Implementing Sustainability Practices

While the benefits of sustainability and responsible management practices are evident, challenges and barriers can hinder their effective implementation. These challenges include lack of awareness, inadequate resources, and resistance to change (Walker et al., 2008). Moreover, organizational culture, stakeholder pressures, and regulatory frameworks can influence the degree of sustainability integration (Zhu et al., 2019). Overcoming these challenges requires organizational commitment, supportive leadership, and proactive engagement with stakeholders (Walker and Jones, 2012, Walker et al., 2008)

A prominent challenge is lack of awareness or understanding of sustainability issues and best practices among managers and staff (Liu et al., 2017). Firms in developing countries like Nigeria often have less exposure to global sustainability standards and frameworks. Leadership may lack appreciation of sustainability benefits or commitment to operational change. Insufficient training and guidance on implementation approach also hinders adoption. Inadequate human, technological and financial resources present further hurdles (Luthra et al., 2015). Sustainability initiatives require upfront investments that struggling firms may lack access to. Limited budgets constrain technology upgrades, process improvements and employee training. Hiring sustainability experts or consultants can be prohibitively expensive. Partnering with NGOs, communities and government agencies can help firms access technical and financial support to overcome resource barriers.

Organizational resistance to change poses an additional obstacle (Thanki and Thakkar, 2020). Entrenched attitudes that prioritise cost minimization may dismiss sustainability as an unnecessary expense. Employees accustomed to old workflows resist adopting new green technologies or procedures. Strong leadership commitment along with demonstrations of sustainability's strategic value and cost benefits are imperative to driving cultural change.

External stakeholder pressures also heavily influence sustainability adoption, especially from government regulators and major customer firms (Lee, 2015). Strict government policies mandate higher standards, yet lax enforcement enables violations. Powerful global buyers may expect emerging economy suppliers to comply with codes of conduct. Firms must engage proactively with stakeholders to shape context-appropriate policies and build collaborative partnerships.

Sustainability and Responsible Management within Supply Chain Operations

As Africa's largest economy with a GDP over $500 billion, Nigeria is a pivotal emerging market for global supply chains across sectors like oil and gas, agriculture, light manufacturing, and consumer goods (Pigato and Tang, 2015). Its large population, growing middle class, and increased integration into world trade make it an attractive hub for production and distribution. However, Nigeria faces acute sustainability challenges stemming from its development trajectory that warrant considerable focus from organizations seeking to implement responsible and ethical supply chain practices in the country (Oyedijo et al., 2022).

In particular, Nigeria struggles with energy poverty, as nearly 60% of the population lacks access to regular electricity despite the abundance of fossil fuel resources (Ajaelu and Okereke, 2020). This severely hinders supply chain infrastructure and capabilities for industries, forcing companies to rely heavily on expensive and carbon-intensive diesel generators. Additionally, decades of oil drilling and pipeline operations in the Niger Delta have caused rampant environmental degradation through frequent oil spills that pollute land and marine areas. Lagging development of proper solid waste disposal and recycling facilities also contributes to urban pollution issues across Nigeria's rapidly expanding cities.

These critical sustainability risks around energy, environmental responsibility, infrastructure gaps, and natural resource governance have substantial implications on supply chain operations. For example, the lack of reliable and clean power impedes advanced manufacturing and cold storage capacity while increasing operating expenses. Legacy issues around oil spills and gas flaring in crude oil extraction also harm the country's overall environmental performance and will require responsible remediation. As global stakeholders pressure companies for stricter supply chain ethics and sustainability, these challenges warrant urgent focus from organizations operating in or sourcing from Nigeria on instituting responsible and ethical practices to aid its development. Environmentally and socially progressive approaches will be indispensable for long term operational success and positive impact.

Therefore, managing environmental sustainability remains a key priority. Nigeria depends overwhelmingly on fossil fuels, with about 80% of the population lacking access to regular electricity. Frequent oil spills also cause extensive damage, while lagging solid waste infrastructure leads to pollution issues. For supply chain operations, the energy gap causes reliance on expensive and polluting diesel generators. Poor transport infrastructure further strains logistics. Proactive environmental practices like renewable energy adoption, optimizing logistics, instituting eco-efficiency programs with suppliers, and responsible waste management are imperative.

Ensuring high social sustainability standards across Nigerian supply chains is similarly crucial. Despite having strong labour laws, enforcement remains inconsistent. Issues around workplace conditions, fair wages, excessive hours, and collective bargaining rights persist nationwide and require vigilance. Furthermore, industries like agriculture and apparel face ethical issues around child labour which firms must eliminate from supply chains. Robust social auditing and supplier code of

conduct measures are essential. Building local community goodwill through social investment also promotes sustainability.

In terms of sustainable procurement, Traceability back to raw material sources is necessary to avoid goods linked to conflict, environmental damage or labour abuses. Anti-bribery and anti-corruption policies must feature strongly to navigate Nigerian markets transparently. Overall, instituting ethical sourcing requires high supplier standards through vetting, codes of conduct and responsible procurement choices.

The theoretical foundation of this study lies in the framework of Green Supply Chain Management (GSCM), which posits that integrating sustainability principles into supply chain operations can yield competitive advantages (Hsu et al., 2013). GSCM emphasizes the adoption of environmentally friendly practices, ethical sourcing, and social responsibility initiatives throughout the supply chain to enhance performance and mitigate risks. This framework serves as a lens through which the study examines sustainability and responsible management practices in Nigerian supply chain operations.

Using Connected Papers™, the author was able to trace the prior works done before this paper as well as the succeeding works post this paper to understand the journey researchers have embarked on with respect to sustainability and responsible management practices as competitive advantages within the supply chain industry in emerging markets

Paper	Authors	Year	Citation	References	Similarity to Source
Green supply chain management as a competitive tool in the fast-moving consumer goods manufacturing industry	Chin-Chun Hsu, K. Tan, S. Zailani, V. Jayaraman	2013	335	109	100
Supply chain drivers that foster the development of green initiatives in an emerging economy	Tarig Eltayeb, S. Zailani, Thurasamy Ramayah	2011	667	100	32.7
Green supply chain initiatives among certified companies in Malaysia and environmental sustainability: Investigating the outcomes	S. Zailani, Tarig Eltayeb, Chin-Chun Hsu, K. Tan	2012	265	71	31.3
The impact of external institutional drivers and internal strategy on environmental performance	D. Thaib	2020	5	62	29.8
Drivers of the green supply chain initiatives: Evidence from Indonesian automotive industry	Tarig Eltayeb, S. Zailani	2014	174	58	25.8
Going Green through Green Supply Chain Initiatives Toward Environmental Sustainability	Tarig Eltayeb, S. Zailani, W. Filho	2010	37	84	25
Green business among certified companies in Malaysia towards environmental sustainability: benchmarking on the drivers, initiatives and outcomes	Tarig Eltayeb, S. Zailani, K. Jayaraman	2010	204	85	23.2
The examination on the drivers for green purchasing adoption among EMS 14001 certified companies in Malaysia	Tareq Al Khidir	2011	20	54	22.7
Greening of the Supply Chain Through Supply Chain Initiatives Towards Environmental Sustainability	T. Laosirihongthong, D. Adebanjo, K. Tan	2013	366	71	21.4
Green supply chain management practices and performance	Tarig Eltayeb, S. Zailani	2010	21	66	19.8
Investigation on the drivers of green purchasing towards environmental sustainability in the Malaysian manufacturing sector	Guo-Ciang Wu, Jyh-Hong Ding, Ping-Shun Chen	2012	339	86	19.8
The effects of GSCM drivers and institutional pressures on GSCM practices in Taiwan's textile and apparel industry	M. Iranmanesh, S. Fayezi, Suhaiza Hanim, S. Hyun	2019	30	107	19.6
Drivers and outcomes of eco-design initiatives: a cross-country study of Malaysia and Australia	Joseph Sarkis, Qinghua Zhu, K. Lai	2011	1846	176	19.4
An Organizational Theoretic Review of Green Supply Chain Management Literature	Ali Esfahbodi, Yufeng Zhang, G. Watson	2016	310	79	19.2
Sustainable supply chain management in emerging economies: Trade-offs between environmental and cost performance	D. Holt, A. Ghobadian	2009	438	78	19.1
An empirical study of green supply chain management practices amongst UK manufacturers	Ali H. Diabat, K. Govindan	2011	896	68	18.6
An analysis of the drivers affecting the implementation of green supply chain management	A. Munawwar	2016	4	32	18.3
Supply Chain Drivers that Foster the Development of Green Initiatives in an Emerging Economy	Qinghua Zhu, Joseph Sarkis, K. Lai	2013	850	104	18.2
Institutional-based antecedents and performance outcomes of internal and external green supply chain management practices	Qinghua Zhu, Joseph Sarkis	2007	1092	42	18.2

Initial Conceptual Framework

This study examines the relationship between sustainability and responsible management practices and supply chain resilience within the context of emerging economies. The initial conceptual model is based on three key constructs: Independent variables – Ethical sourcing, Environmental sustainability and Social responsibility. While the dependent variable is Supply chain resilience.

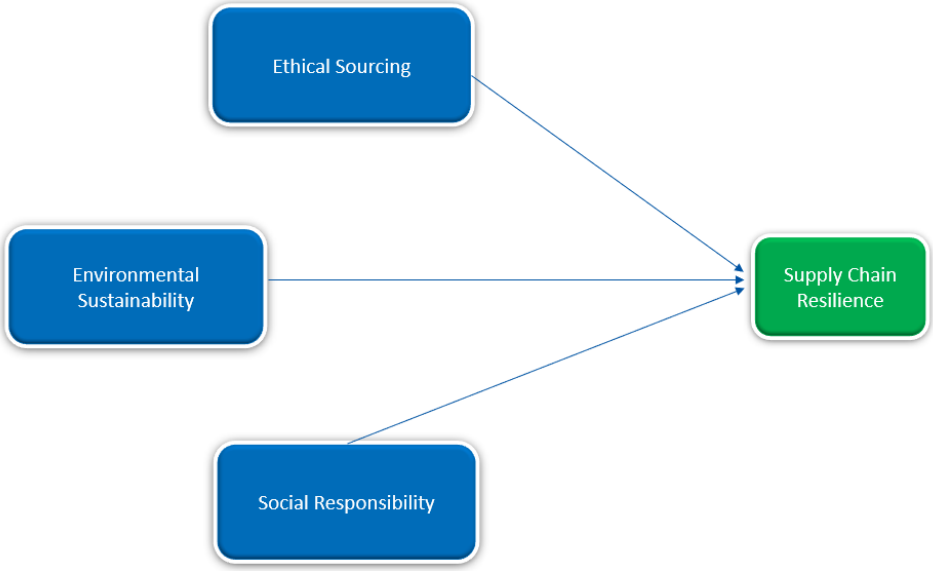


Fig 1.0:. Initial Conceptual Framework for relationship between sustainability and responsible management practices and supply chain resilience within the context of emerging economies
Source: Authors' Conceptualization

H1: There is a positive relationship between ethical sourcing and supply chain resilience

This hypothesis postulates a positive relationship between Ethical Sourcing Practices and Supply Chain Resilience. It asserts that a supply chain's adaptive capacity is significantly enhanced by the conscientious selection of suppliers, rigorous compliance checks, and the implementation of anti-corruption policies. This proposition aligns with existing literature that emphasises the pivotal role of ethical considerations in bolstering supply chain robustness. Studies by Carter and Rogers (2008) underscores the criticality of supplier selection procedures in shaping the ethical landscape of a supply chain. Their findings indicate that a meticulous approach to supplier vetting contributes to the creation of a more resilient supply chain. This aligns with the notion that a robust foundation, rooted in the ethical sourcing of materials and services, establishes a supply chain better equipped to navigate disruptions (Carter & Rogers, 2008).

Moreover, the hypothesis draws support from studies on compliance checks and anti-corruption policies. The study of Beske and Seuring (2014) suggests that stringent compliance checks contribute to risk mitigation within the supply chain, ensuring that all actors adhere to ethical standards. Similarly, anti-corruption policies play a crucial role in fostering a transparent and trustworthy supply chain environment (Beske, 2012).

H2: There is a positive relationship between environmental sustainability and supply chain resilience.

This hypothesis posits a positive correlation between Environmental Sustainability Practices and Supply Chain Resilience, contending that initiatives such as emission reduction, renewable energy utilization, and materials efficiency contribute to the adaptive capabilities of the supply chain. This proposition aligns with extensive research emphasizing the role of environmental sustainability in fortifying supply chain resilience.

Studies by Shevchenko et al. (2022) assert that environmental sustainability practices, particularly those aimed at emission reduction, result in a more flexible and responsive supply chain. By minimizing the carbon footprint, supply chains become better equipped to adapt to disruptions and uncertainties in the operational environment (Pagell & Shevchenko, 2014). Furthermore, research by Wu et al. (2018) underscores the positive impact of renewable energy use on supply chain resilience, highlighting how sustainability practices contribute to energy efficiency and, consequently, operational continuity. The hypothesis is grounded in the argument that a commitment to environmental stewardship not only aligns with corporate social responsibility but also enhances the supply chain's ability to navigate challenges. By

promoting sustainability, firms are better positioned to innovate and adapt, ultimately fostering resilience within the supply chain (Wu et al., 2018; Pagell & Shevchenko, 2014).

H3: There is a positive relationship between social responsibility and supply chain resilience

This hypothesis suggests a positive relationship between Socially Responsible Practices and Supply Chain Resilience, asserting that a commitment to labour rights protection, workplace safety standards, and community development enhances the supply chain's adaptive capabilities. This proposition is supported by a wealth of literature emphasizing the integral role of social responsibility in fortifying supply chain resilience.

Research by (Sarkis et al., 2012) underscores the significance of labour rights protection within the supply chain, arguing that fair and ethical treatment of workers contributes to a more resilient operational environment. The study suggests that fostering positive relationships with employees through ethical labour practices enhances the overall robustness of the supply chain (Sarkis et al., 2012). Additionally, workplace safety standards are recognised as pivotal in reducing disruptions and ensuring the continuity of operations within the supply chain (Closs et al., 2011).

Furthermore, community development initiatives contribute to the overall resilience of the supply chain by fostering strong ties with local stakeholders (Carter and Liane Easton, 2011). This hypothesis aligns with the argument that social responsibility practices go beyond ethical considerations, actively contributing to the supply chain's ability to navigate challenges and uncertainties (Sarkis et al., 2011; Closs et al., 2011).

Methodology

The methodology employed in this study encompasses primary data collection through a combination of survey questionnaires and semi-structured interviews. The survey questionnaire was designed to gather quantitative data on the adoption of sustainable practices, ethical sourcing, and social responsibilities within supply chain operations (Kannan et al., 2020; Pagell and Shevchenko, 2014). The responses from the survey were subjected to analysis using Partial Least Squares Structural Equation Modeling (PLS-SEM) to assess the relationships between hypothesized variables.

A purposive sampling technique was utilized to distribute the survey among employees across various supply chain industries, with a focus on higher cadre officers. The sample size was determined using G*Power analysis, indicating a minimum requirement of 107 responses. However, a total of 284 responses were collected and deemed suitable for final analysis.

Common Method Bias Assessment: To mitigate common method bias, a marker variable technique was employed by including a non-contextual question in the survey. The insignificance of the marker variable's impact on the overall model's R2 indicated the absence of common method bias in this study.

In addition to the survey, semi-structured interviews were conducted with key supply chain stakeholders, including managers, executives, and practitioners. These interviews aimed to provide deeper insights into the experiences and perspectives regarding sustainability practices and their impact on supply chain operations in Nigeria. Each interview session lasted approximately 15-20 minutes, and the discussions were audio-recorded and transcribed for qualitative analysis.

Ethical considerations were meticulously integrated throughout the data collection and analysis stages of the study. Informed consent was obtained from all participants involved in both the questionnaire survey and interviews. The questionnaire was anonymized to ensure the confidentiality of respondents' details. Additionally, participants were informed of the voluntary nature of their participation and their right to withdraw from the study at any point. Non-sensitive questions were prioritized during data collection to safeguard participant comfort and confidentiality.

Analysis

Quantitative Analysis

Table 1: Respondent Demographics

	Frequency	Percentage
Gender		
Male	131	46
Female	88	31
Prefer not to say	43	15
Others	23	8
Educational Qualification		

Secondary School	17	6
First Degree	108	38
Polytechnic/Technical School	74	26
Postgraduate	85	30
Working Experience		
1-5 years	26	9
6-10 Years	94	33
11-15 Years	102	36
16 and above	62	22
Current Cadre		
Entry Level	23	8
Junior Management	77	27
Middle Management	97	34
Senior Management	74	26
Executive Management	14	5

Source: Authors; Field Survey

Measurement Model Evaluation

The measurement model was evaluated by examining item loadings, internal consistency reliability, convergent validity, and discriminant validity. As seen in the results, all item loadings were above the threshold value of 0.7, indicating adequate reliability of the indicators measuring each construct (ETS, EVS, SCR, SRC). The internal consistency reliability was analyzed using Cronbach's alpha (CA) and composite reliability (CR) values. All constructs met the recommendation of CA and CR greater than 0.7. Convergent validity was established with average variance extracted (AVE) measures above 0.5 for all constructs. To assess discriminant validity, the heterotrait-monotrait ratio (HTMT) approach was utilised. All HTMT values were below the 0.9 threshold, demonstrating sufficient construct distinctiveness. Furthermore, the AVE for each construct exceeded the squared correlation between construct pairs, providing additional evidence of discriminant validity.

Table 2: Validity and Reliability

		loadings	**Mean**	**Std dev**	**CA**	**CR**	**AVE**
Ethical Sourcing	ETS1	0.832	5.493	1.002	0.858	0.914	0.779
	ETS2	0.911	5.342	1.069			
	ETS3	0.903	5.273	1.117			
Environmental Sustainability	EVS1	0.835	5.921	1.313	0.800	0.882	0.713
	EVS2	0.862	5.705	1.258			
	EVS3	0.836	5.803	1.268			
Supply Chain Resilience	SCR1	0.73	6.208	1.166	0.735	0.763	0.517
	SCR2	0.701	5.918	1.273			
	SCR3	0.726	5.747	1.387			
Social Responsibility	SRC1	0.866	4.654	1.541	0.742	0.854	0.662
	SRC2	0.824	5.327	1.206			
	SRC3	0.746	4.104	1.355			

Source: Smart PLS 4 Output

Table 3: Discriminant Validity

	ETS	**EVS**	**SCR**	**SRC**
ETS				
EVS	0.474			
SCR	0.599	0.771		
SRC	0.194	0.385	0.718	

Source: Smart PLS 4 Output

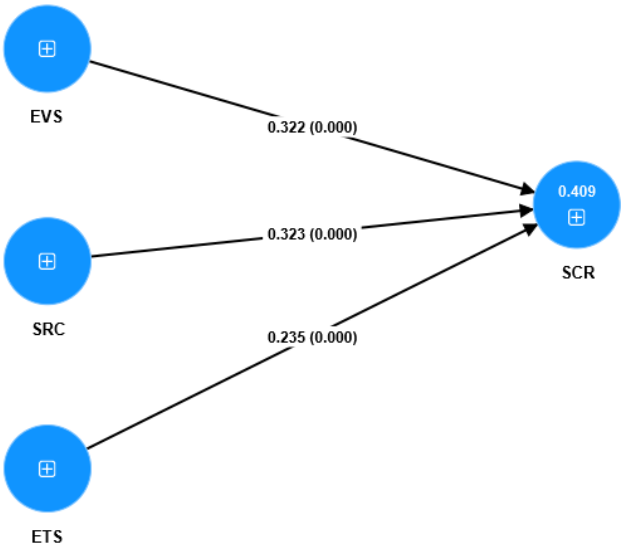


Fig 2.0 Structural Model
Source: Smart PLS 4 Output

Structural Model Evaluation

Table 4: Hypothesis Testing

	B	Std Dev.	T-value	P values	F-square
ETS -> SCR	0.231	0.048	4.784	0.000	0.077
EVS -> SCR	0.321	0.039	8.248	0.000	0.139
SRC -> SCR	0.325	0.043	7.619	0.000	0.163

Source: Smart PLS 4 Output

The structural model was assessed by examining the path coefficients, their statistical significance, and the predictive power of the model through the coefficient of determination (R^2). The path analysis results showed that environmental sustainability ($\beta = 0.321$; $p<0.001$) and social responsibility ($\beta = 0.325$; $p<0.001$) had significant positive effects on supply chain resilience. The path coefficient from ethical sourcing to supply chain resilience was also significant ($\beta = 0.231$; $p<0.001$). All three relationships were significant at the 95% confidence level. Furthermore, the antecedent constructs explained a substantial level of variance in supply chain resilience, with an R^2 value of 0.401. This indicates that 40.1% of the variability in supply chain resilience is accounted for by the sustainability practices of environmental responsibility, social responsibility and ethical sourcing.

Qualitative Analysis

The qualitative analysis in this study aims to explore themes related to supply chain sustainability, ethics, and resilience based on interviews with 10 professionals in managerial roles across various industries in Nigeria. The interviews were conducted to understand the current state of sustainability and ethical practices within Nigerian supply chains, as well as the strategies employed to enhance resilience in the face of challenges. The analysis draws upon concepts from the literature to support the interpretation of the data and provide theoretical insights into the findings.

Analytical Approach:

The qualitative data collected from the interviews underwent a thematic analysis process to identify key themes and sub-themes. This process involved coding the interview transcripts to identify recurring patterns and concepts related to sustainability management, ethics and human rights, and adaptability and resilience building within supply chain operations in Nigeria.

The analysis is guided by concepts from the literature, particularly the framework of Green Supply Chain Management (GSCM), which emphasizes the integration of sustainability principles into supply chain operations for competitive advantage. Concepts such as environmental sustainability practices, ethical sourcing, and resilience building strategies are drawn upon to interpret the interview data and provide theoretical grounding for the findings.

Participant Profile:

The participants in the qualitative aspect of the study were selected based on their managerial roles within industries such as manufacturing, distribution, textiles, pharmaceuticals, and extractives in Nigeria. A table summarizing the profile of the participants is provided below:

Table 5: Profile of the participants

Participant	Industry	Role
R001	Manufacturing	Operations
R002	Distribution	Supply Chain
R003	Textiles	Procurement
R004	Pharmaceuticals	Sustainability
R005	Extractives	Environmental Health & Safety
R006	Manufacturing	Quality Assurance
R007	Distribution	Logistics
R008	Textiles	Production
R009	Pharmaceuticals	Compliance
R010	Extractives	Operations

Source: Authors' Survey output

Analysis of Qualitative Data:

The qualitative analysis revealed several key themes related to sustainability management, ethics and human rights, and adaptability and resilience building within Nigerian supply chains.

Sustainability Management

Managing environmental sustainability through responsible policies and practices emerged as a key theme across the interview data. Nearly all respondents indicated at least a baseline level of green considerations being integrated into supply chain operations in Nigeria. As Respondent 001 stated, "We try to incorporate environmentally friendly practices wherever we can in our Nigerian supply chain operations" (Pg. 1). This demonstrates an overall strategic recognition of the importance of mitigating ecological impacts.

In terms of concrete initiatives, multiple participants **highlighted sustainability-oriented changes** enacted in collaboration with local suppliers and within operational facilities. Examples included working with farmers employing sustainable techniques like crop rotation or integrated pest management to reduce chemical usage (R001, Pg. 1), installing solar panels at distribution centers to transition towards renewable energy (R002, Pg. 1), rolling out recycling and composting programs in cafeterias and production plants to repurpose waste streams (R002, Pg. 1), and upgrading lighting or HVAC technology to more energy and water efficient systems (R005, Pg. 2). These specific eco-friendly practices reflect a pathway of translating high-level sustainability commitments into on-the-ground implementation across the supply chain.

In relation to emissions measurement, around half of respondents indicated some level of actively **monitoring carbon footprints** across their Nigerian operational activities or even through detailed product lifecycle assessments estimating total footprint from raw material extraction through end-of-life (R004, Pg. 2). However, an equal number admitted lacking mechanisms to systematically quantify carbon impacts across their supply chain (R006, R008, Pg. 2). This gap highlights a clear opportunity to improve data utilization for setting targeted emissions reduction goals. Those proactively tracking usage metrics related to electricity, fuel, water and waste at least have a foundation to estimate environmental performance.

Regarding **conservation**, a few participants emphasised **efficiency initiatives** like reusing water in manufacturing processes (R005 Pg. 3) or transitioning towards greater reliance on renewable energy to minimise fossil fuel dependence (R010, Pg. 4). However, most suggested their organizations lacked clear environmental policies or requirements specifically designed for the Nigerian supply chain context around mandating responsible resource usage limits or standards from local suppliers. This indicates noteworthy room for expansion when it comes to conservation compliance.

Over half of professionals interviewed recognised needs to implement more formal sustainable sourcing practices tailored to Nigeria. Proposed approaches included establishing preferential local purchasing programs to reduce transport-related emissions (R005, Pg. 3), setting minimum required usage levels for recycled or sustainably certified lower footprint input materials (R004, Pg. 2), and building strategic partnerships with smallholder farms practicing sustainable agriculture without excessive pesticides or fertilisers (R001, Pg. 3). Several indicated goals to draft comprehensive Nigeria-specific sustainable sourcing policies to encourage these approaches.

Finally, in relation to external **social sustainability engagement** linked to supply chain activities, although most participants admitted lacking clearly structured community development programs currently (R002, Pg 5), a few mentioned avenues to contribute value including funding local non-profits undertaking health, education or environmental initiatives (R005, Pg 5) and encouraging employees to volunteer time towards community causes during paid working hours (R008, Pg 5). However, more strategic partnerships were commonly identified as a desired future priority.

Ethics and Human Rights

Upholding social responsibility through human rights protections and compliance with ethical standards stood out as another major theme across interviews. All participants demonstrated a clear acknowledgment of the fundamental importance of incorporating values-based considerations into supply chain relationships in the Nigerian context. For example, in relation **to monitoring workplace conditions**, regular audits and onsite inspections were commonly described to verify alignment with both local regulations and internal standards around fair living wages, reasonable working hours, collective bargaining protections, and other labor rights (R004, Pg. 4). Some organizations also required formal supplier commitments to ethical principles as a prerequisite for partnerships through localised codes of conduct enshrining human dignity and equity (R001, Pg. 6).

Regarding employee health and safety, participants emphasised multi-level screening mechanisms to guarantee legally and internally compliant systems were in place at supplier sites for factors like protective equipment availability, hygiene protocols, hazardous materials handling procedures and general working conditions without undue physical risks (R005, R006, Pg. 6). Nigeria-specific codes of conduct often outline these safety expectations formally (R009, Pg. 6).

Most interviewees stressed fully vetting suppliers to control risks through extensive due diligence checks. Tactics commonly included background screening questionnaires and data requests on policies and operational controls (R008, Pg 7), along with in-person verification through facility condition assessments and private worker interviews to evaluate compliance (R003, Pg 7). Ongoing monitoring through periodic site visits and engagement also allowed course correction of emerging issues over time.

Interview participants universally conveyed an expectation of full **legal compliance** from suppliers on **labor regulations**, environmental permits, safety standards and all other applicable laws as a basic prerequisite for conducting business (R010, Pg 7). Some deployed internal subject matter experts focused specifically on regulation topics like workplace norms or hazardous materials handling to scrutinise high risk supplier facilities in detail towards supporting conformance (R003, R007, Pg 7).

Most professionals indicated mandating adherence to Nigeria-specific codes of conduct establishing thresholds for integrity, work conditions **meeting human dignity standards**, and responsible environmental performance - with conforming to the outlined expectations required for maintaining partnerships (R004, R006, R009, Pg 6). However, about a third did report lacking these formal policy structures presently (R002, R007, Pg 6), signaling notable potential for expansion to solidify compliance guidelines.

Adaptability and Resilience Building to attain Sustainability

The theme of adaptability, resilience and risk management also featured heavily across interviews, with most emphasizing a growing emphasis on developing robust adaptive capacities and mitigation mechanisms to navigate Nigeria's complex operating landscape. Respondents indicated ***Risk Assessments*** as one of the methods for adaptability and resilience building in sustainable supply practices in Nigeria. Early stage supply chain mapping to identify vulnerabilities (R008, Pg 11), infrastructure stability evaluations, stress testing, and scenario modeling were commonly described tools to quantify operational risks around disruption factors like economic shifts, climate impacts, resource scarcity and community unrest (R003, R010, Pg 10). Also, many respondents indicated establishing emergency response plans like redundant power and water access (R002, Pg 11), developing scenarios covering potential events like port congestion or electric grid outages (R006, Pg 10), and creating options to rapidly shift distribution channels or inventory locations (R005, Pg 10) in case primary supply routes suffer disruptions.

Collaborating closely with domestic suppliers, farms and logistics operators was considered crucial by most interviewees to leverage local knowledge when assessing regional risks (R002, Pg 10) and make contextually-appropriate investments to uplift local business capabilities, infrastructure robustness and continuity planning (R003, R004, Pg 10). More so, interviewees commonly highlighted purposefully

engineering structural **flexibility** into supply chain relationships though contractual mechanisms allowing for dynamic ordering volumes based on demand (R007, Pg 10) and options to shift between transportation modes or routing if required (R005, R006, Pg 10). Proactively stress testing continuity protocols through drills modeling potential scenarios and running **simulations** with suppliers to surface capability gaps was another best practice adopted by select respondents to evaluate and enhance resilience programming (R001, R010, Pg 11).

The qualitative analysis provides valuable insights into the current state of sustainability, ethics, and resilience within Nigerian supply chains. By integrating concepts from the literature and analyzing the perspectives of industry professionals, the study contributes to a deeper understanding of the challenges and opportunities in promoting sustainable and ethical practices within supply chain operations in Nigeria.

Discussion

The findings of this study shed light on the current state of sustainability management practices within Nigerian supply chain operations and provide insights into areas for improvement. Overall, while there is a general acknowledgment of the importance of responsible environmental and social policies among companies operating in Nigeria, there are notable variations in the maturity levels of implementation across different aspects of sustainability.

Quantitative analysis supported the hypothesis that environmental responsibility, social accountability, and ethical sourcing significantly influence supply chain resilience. This aligns with previous research demonstrating the positive impact of sustainability factors on continuity capacities. The emergence of concrete sustainability-oriented changes, such as efficiency upgrades and renewable energy installations, indicates a shift towards decarbonizing operations and responsibly leveraging ecological resources. However, gaps remain, particularly in comprehensive emissions accounting and conservation compliance mechanisms, which threaten effective target setting and policy enforcement.

Strategic sustainable sourcing procedures tailored to the Nigerian context represent a promising avenue for enhancing responsible practices. Initiatives like preferential local purchasing and partnerships with smallholder farmers offer opportunities to drive positive impacts while minimizing environmental footprints. Despite rhetorical commitments to social sustainability principles, structured community development programming remains underdeveloped. This highlights the potential to deploy resources more proactively through health, education, and environmental stewardship partnerships, as well as leveraging employee volunteering support.

The findings confirm an increasing prioritization of developing robust adaptive capacities and risk mitigation systems within Nigerian supply chains. Both quantitative and qualitative results emphasize the importance of vulnerability assessments, stress testing, infrastructure investments, and contractual flexibility mechanisms in enhancing resilience. Continued collaboration with local partners and the purposeful engineering of adaptability into operational networks are identified as ongoing priorities to withstand external shocks and volatility.

These findings are consistent with previous research highlighting the positive relationship between sustainability practices and supply chain resilience. Studies by Ovitz & Johnson (2019) and Karagiannis et al. (2022) have similarly demonstrated the linkages between environmental responsibility, social accountability, and enhanced continuity capacities. Additionally, the identified gaps in emissions accounting and conservation compliance mechanisms resonate with findings by Acquaye et al. (2018), emphasizing the importance of comprehensive sustainability frameworks for effective target setting and policy enforcement.

It is important to acknowledge the limitations of this study, including the relatively small sample size and the focus on specific industries within Nigeria. Future research could explore sustainability management practices across a broader range of sectors and include a larger and more diverse sample to provide a comprehensive understanding of the challenges and opportunities in Nigerian supply chains. Additionally,

longitudinal studies could track the evolution of sustainability practices over time and assess their long-term impact on supply chain resilience and performance.

Theoretical Implications

The findings carry several notable theoretical implications. Firstly, results provide additional empirical evidence to support arguments linking sustainable supply chain practices with enhanced resilience capacities (Beske and Seuring, 2014). Statistically significant relationships between environmental responsibility, social accountability, ethical sourcing and continuity readiness substantiate conceptual positions positing responsible management as a pathway to buffer against external disruption risks (van der Vorst et al., 2013).

It also reinforces contingency theory perspectives emphasizing adaptability to navigate uncertainty (Østergaard et al., 2022). Underscoring vulnerability assessment rigor, infrastructure collaboration, and engineered flexibility mechanisms provides grounded cases demonstrating operational adjustment approaches to handle volatility in practice (Ivanov, 2022). Furthermore, integration of sustainability considerations within standard business decision-making frameworks in the Nigerian context aligns with stakeholder theory outlooks recognizing meeting broader ethical obligations beyond shareholders alone. This manifests through supplier codes of conduct formally encapsulating human rights protections alongside profit-oriented metrics and auditing procedures designed to verify workplace standards align with dignity principles in practice (Aguilar Delgado and Perez-Aleman, 2021)

Additionally, the prioritization of localised policies and protocols tailored specifically to the Nigerian operational landscape corresponds to arguments highlighting increased relevance of contextualizing responsible practices to optimise efficacy rather than applying universalised frameworks (Linton et al., 2007). Adapting programming to leverage procurement for positive impact through mechanisms like smallholder agricultural partnerships demonstrates targeted alignment of sustainability goals with place-based supply chain actors (Meixell and Luoma, 2015).

However, gaps around comprehensive emissions accounting systems and conservation compliance verification procedures indicate potential blind spots undermining sustainability performance management rigor called for within ‘triple bottom line’ oriented models (Svensson, 2022). This signals risks of superficial signaling without systematic impact quantification to substantiate progress claims. Tension also persists between economic and ethical rationales, evidenced through admitting lacking formalised codes of conduct cementing human rights expectations for multiple organizations.

Ultimately, the grounded integration of green and socially accountable supply chain practices among Nigerian firms matched anticipated extensions of contemporary sustainability perspectives (Pagell & Shevchenko, 2014). But theoretical frameworks will continue requiring ongoing adaptation to provide sufficient guidance on translating complex, context-dependent progress into simplified reporting mechanisms able to drive continuous improvement (Beske & Seuring, 2014). Although relationships between variables at a high-level manifest clearly through this analysis, additional research is warranted to disentangle intersectional dynamics between profitability goals, human development priorities and ecological regeneration needs playing out through on-the-ground supply chain decision making.

Revised Conceptual Framework

The study provides a final conceptual framework that builds on existing theory on statistically significant relationships between environmental responsibility, social accountability, ethical sourcing and continuity readiness substantiate conceptual positions positing responsible management as a pathway to buffer against external disruption risks (van der Vorst et al., 2013) as well as reinforcing contingency theory perspectives (Østergaard et al., 2022).

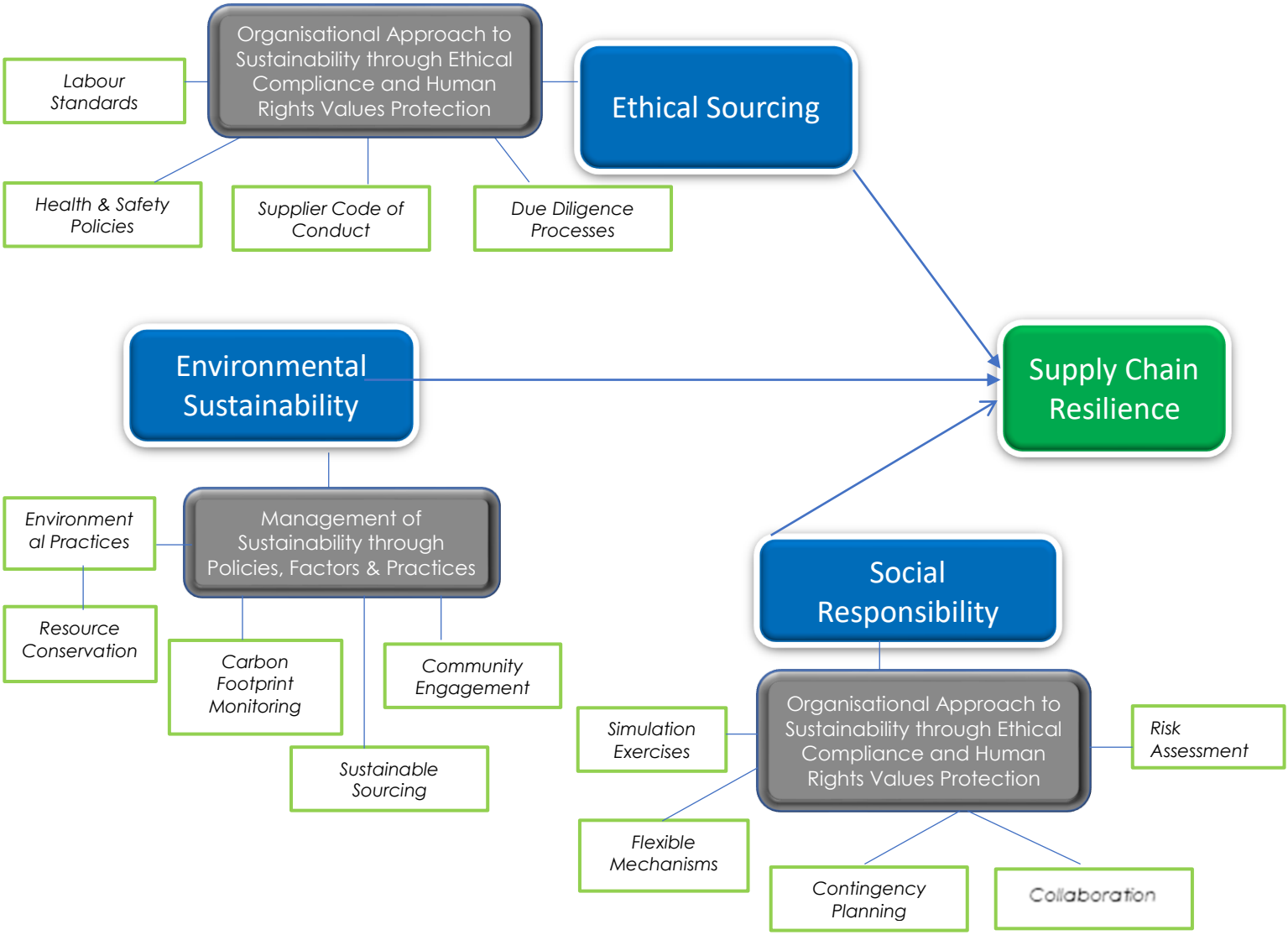


Fig 3.0:. Revised Conceptual Framework for relationship between sustainability and responsible management practices and supply chain resilience within the context of emerging economies

Practical Implications

The findings carry several key practical implications for organizations seeking to drive sustainability progress through Nigerian supply chain operations. Overall, quantitative validation of significant positive relationships between green and socially accountable practices with resilience capacities substantiates arguments for integration based on continuity benefits alone, beyond moral rationales. This provides a pragmatic business case using language familiar to executives (Linton et al., 2007).

However, realizing environmental and social welfare potential necessitates avoiding superficial initiatives isolated from core operations. Interview emphasis on supplier code of conduct policies, human rights auditing procedures and screening mechanisms for workplace protections demonstrates embedding responsible expectations into supplier management processes (Perez-Aleman & Sandilands, 2008). But truly optimizing local impact will require even greater involvement through direct infrastructure investments and smallholder agricultural partnerships (Meixell & Luoma, 2015).

Regarding measurement, the lack of comprehensive emissions accounting systems represents a major barrier to credible public reporting. Methodical data utilization practices tracking electricity, fuel and resource consumption can enable reasonable footprint estimates as a starting point (Acquaye et al., 2014). While third party verification adds credibility, transparency regarding inventory methodologies and progress benchmarks remains feasible without formal certification.

Additionally, an overarching Nigeria specific sustainable sourcing policy framework encompassing guidelines around preferred purchasing criteria, recycled content thresholds and agricultural practice expectations could drive more consistent responsible decision-making. Codified procedures with acknowledgment tied to business continuity concerns can motivate local engagement even absent strong governmental regulatory pressures (Vlajic et al. 2012).

Furthermore, gaps in conservation compliance verification represent another potential liability without establishing clear resource usage limits and efficiency expectations through supplier contracts. Mandating responsible water utilization or fossil fuel consumption rates defends against public relations damage if external scrutiny intensifies regarding ecology stewardship (Svensson, 2022).

Finally, community development programming integrated with supply chain outreach remains an untapped frontier with multiple pathways for engagement including strategic nonprofit partnerships, employee volunteering structures and even preferential sourcing from marginalised agricultural collectives (Porter & Kramer, 2011). As resources flow through local economies via operations, ensuring vulnerable groups benefit directly enables harnessing infrastructure for positive societal returns beyond economic profits alone (Meixell & Luoma, 2015).

Conclusion

In conclusion, the chapter established that sustainability potential in practice will require Nigerian supply chain actors to embrace responsibility not just as an abstract signalling mechanism but rather as an operational imperative ingrained through goal setting, policy frameworks, procurement standards and measurement processes. While economic objectives inevitably dominate decision calculus, emphasizing resilience interlinkages provides rationale to take an expansive view of shareholder obligations spanning both business performance and ethical considerations around environmental and human welfare (Perez-Aleman & Sandilands, 2008). Narrow perspectives isolating enterprise activities from wider impacts must be recast towards recognizing supply chains as drivers of ecological regeneration and inclusive development outcomes, rather than isolated profit engines blind to societal consequences.

Conflict of Interest

The author declares no conflict of interest

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Appendix1

Respondents Profile

Respondent Code	Gender	Firm Type	Educational Qualification	Working Experience	Current Cadre
R001	Male	Extractive Industry	Postgraduate	15 Years	Senior Management
R002	Female	Manufacturing	Postgraduate	12 Years	Senior management
R003	Female	Supply Chain	Postgraduate	16 Years	Senior Management
R004	Male	Large Distribution (FMGC)	Bachelor and Professional (ICAN)	14 Years	Senior Management
R005	Male	Large Distribution (Construction Materials)	Postgraduate and ICAN	15 Years	Senior Management
R006	Female	Textile	Bachelor	10 years	Middle Management
R007	Male	Supply Chain (Pharmaceutical)	Postgraduate	11 years	Middle Management
R008	Male	Supply chain	Postgraduate Diploma	8 years	Middle management
R009	Female	Manufacturing (Pharmaceutical)	Postgraduate	16 Years	Senior Management
R010	Female	Distribution (Home care products)	Postgraduate	13 Years	Senior Management

Source: Researchers' Survey output

Appendix2: Themes and Subthemes Coding

S/No.	Major Theme	Sub-Themes	Reference Respondent Code and Page Number
1	Management of Sustainability through Policies, Factors and Practices	Environmental Practices	• We try to incorporate environmentally friendly practices wherever we can in our Nigerian supply chain operations. [R001] (Pg. 1) • We found that manufacturing and materials accounted for the largest share of emissions for many products, so we focused efforts on renewable energy procurement and low-carbon materials sourcing to bring those numbers down. [R004 Pg. 2) • Some key elements will be preferential sourcing from local producers to reduce transport miles; working with farmers and producers that utilise renewable energy, manage water efficiently, and repurpose waste streams; minimizing packaging by opting for reusable or recyclable materials (R005 Pg. 3) • Our organization's ultimate aim is to achieve 100% renewable energy usage and zero waste across our global operations, including Nigeria [R010 pg. 4).
		Carbon Footprints Monitoring	• … we utilise detailed lifecycle assessment software to estimate our product carbon footprints from raw material extraction all the way through end-of-life disposal or recycling. By modeling our products' full lifecycles, we get a data-driven breakdown of emissions at each stage - materials, manufacturing, transport, packaging, use phase, and disposal [R004 pg. 2] • Our organization currently does not have a system in place to actively measure and monitor our overall carbon footprint across the entire supply chain [R006 Pg. 2] • While we have not yet calculated our total carbon footprint across the full supply chain, we do have robust mechanisms to monitor environmental performance at our owned facilities [R009. Pg. 2]
		Resource Conservation	• Currently our organization conducts annual environmental audits at our Tier 1 supplier facilities and our owned manufacturing plants. These onsite evaluations examine factors like energy systems, waste management, and water conservation. [R010 Pg. 3] • Our organization has developed a comprehensive sustainable supplier code of conduct... This code covers criteria like targets for increasing use of renewable energy in production processes, responsible water use practices, waste minimization through reduction, recycling and re-use, and conservation of natural resources. [R006 Pg. 3] • …also sets standards for environmental management, waste and emissions controls, conservation of resources like water and energy [R008 pg. 6)
		Sustainable Sourcing	• We recognise that implementing a more comprehensive code of conduct would allow us to better enforce responsible sourcing practices consistent with our sustainability commitment (R002 Pg. 6) • Our organization does not yet have a fully formalised and documented supplier code of conduct tailored specifically to our operations in Nigeria. However, we do incorporate some basic responsible sourcing standards into our contracts [R003 Pg. 6) • Holding our Nigeria suppliers to high ethical standards is integral to our sourcing process [R006 Pg. 7)

			• Our organization highly values transparency when it comes to disclosing information about the origin and sourcing practices related to our products from Nigeria [R001 Pg. 8) • …we aim to be as open as possible about our sourcing origins so that customers can make informed decisions. [R002 Pg. 8)
		Community Engagement	• …we have policies to preferentially purchase from local suppliers and farms that use renewable resources and sustainable growing methods when possible. This minimises transport emissions and supports the community. [R001 Pg. 3) • Some key elements will be preferential sourcing from local producers to reduce transport miles; partnering with vendors who provide good labor conditions and community benefits; [R005 Pg. 3) • Our organization does not currently have any formal community development programs or corporate social responsibility initiatives related to our supply chain presence specifically in Nigeria [R002 Pg. 5] • While our organization does not yet directly engage in formal community development programs related to our supply chain activities in Nigeria, our global corporate foundation does provide grants and funding to reputable non-profits operating locally across Nigeria. [R005 Pg. 5) • While we do not yet have formalised community development programs, our local managers encourage and make time for our employees to periodically volunteer at schools, orphanages, clinics, and farms near our supplier facilities [R008 Pg. 5)
2.	Organizational Approach to Sustainability Through Ethical Compliance and Human Rights Values Protection	Labour Standards	• We conduct regular comprehensive audits at all our supplier facilities in Nigeria to verify fair treatment of workers and compliance with our ethical labor standards and local regulations [R004 Pg. 4] • … our organization has a global supplier code of conduct that extends to all suppliers we work with for our operations in Nigeria. It covers important criteria like labor standards, human rights protections… [R001 Pg. 6] • We provide thorough information on our website about every facility – locations, factory conditions, labor sources, and environmental policies [R006 Pg. 8] • We aim for full transparency from our suppliers in Nigeria when it comes to labor sources, recruitment practices, wages, and overall human rights policies [R002 Pg. 4] • Once partnerships are established, suppliers must provide regular data reports on labor sources, wages, and employee retention rates [R006 Pg. 4]
		Health and Safety Policies	• … establishes standards and policies our suppliers must adhere to around labor conditions and worker rights, waste and environmental management, occupational health and safety of employees, business ethics, confidentiality, and more [R004 Pg. 6] • Yes, we have instituted a comprehensive code of conduct specifically for our suppliers in Nigeria that establishes standards on human rights protections, workplace health and safety, labor practices, environmental management, ethics, data privacy [R006 Pg.6] • Yes, we have a very detailed, localised code of conduct for all of our suppliers in Nigeria that provides standards on human rights protections, dignified labor conditions, occupational health and safety, environmental stewardship [R009 Pg. 6] • Our organization takes a proactive, multilayered approach to ensuring ethical sourcing from our Nigeria suppliers. Prior to engagement, we screen suppliers' practices related to labor, health & safety, environment and business integrity [R005 Pg. 7]
		Due Diligence Processes	• We take supplier due diligence very seriously at our organization. [R001 Pg. 7] • We have a rigorous supplier due diligence process for our Nigeria supply base. It starts with vetting and background checks performed by our in-house experts on risks, regulations and potential for misconduct [R008 Pg. 7] • Once approved, suppliers must provide transparency into facility practices and undergo unannounced audits. Internal teams perform investigative due diligence following any allegations of wrongdoing. [R004 Pg. 9] • We perform in-depth due diligence on potential suppliers, followed by ongoing audits [R008 Pg. 9]
		Regulatory Compliance	• We openly share third-party audit results on workplace conditions, employment terms, worker treatment and regulatory compliance for each site. [R008 Pg. 8] • We conduct regular audits on regulatory compliance, workplace policies, hiring practices and environmental impact [R010 Pg. 10] • For high-risk suppliers, we perform extensive background checks into their operations, workforce policies, and regulatory adherence. [R003 Pg. 7] • Short-listed suppliers undergo intensive on-site audits by our trained team, covering regulatory compliance, workplace conditions, HR practices, environmental impact and business ethics [R007 Pg. 7]

		Supplier Code of Conduct	• We mitigate ethical risks in Nigeria through our Supplier Code of Conduct, qualification process emphasizing ethics, and ongoing audits of facilities and policies. [R003 Pg. 9] • All partners must sign our Supplier Code of Conduct addressing labor, environmental and anti-corruption policies [R006 Pg. 9] • Our long term goal is to implement a formal sustainable sourcing and supplier code of conduct program tailored to Nigeria to further drive adoption of renewables and more responsible practices. [R004 Pg. 3] • Currently our organization does not have a Nigeria-specific supplier code of conduct with standards beyond basic legal compliance in areas like labour, environmental regulations, ethics, etc. [R002 Pg. 6] • Currently our organization does not have a documented, Nigeria-specific supplier code of conduct beyond compliance with local labor, environmental and other laws [R007 Pg. 6]
		Ethical Sourcing	• Our organization takes a proactive, multilayered approach to ensuring ethical sourcing from our Nigeria suppliers [R005 Pg. 7] • Ensuring ethical sourcing from Nigeria is a high priority. Our diligence process evaluates potential suppliers' compliance procedures, record keeping, employee relations and operating facilities [R010 pg. 7] • also provide a hotline to address any additional supply chain questions. We are proud of our ethical sourcing origins. [R010 Pg. 8]
3	Adaptability and Resilience Building to attain Sustainability	Risk Assessment	• we have invested significant resources into collaborating with our partners in Nigeria. We work with them to map our supply chain end-to-end and perform risk assessments [R008 Pg. 11] • We assess risks associated with sectors, geographies and potential partners [R003 Pg. 7] • We mitigate ethical risks in Nigeria through our Supplier Code of Conduct, qualification process emphasizing ethics, and ongoing audits of facilities and policies [R003 Pg. 9] • We take a proactive approach to managing risks in Nigeria [R010 Pg.8]
		Contingency Planning	• We also work closely with suppliers on contingency planning for different risk scenarios and help them implement continuity best practices [R001 Pg. 10] • Enhancing resilience starts with understanding risks through supply chain mapping, stress testing and scenario modeling. We then develop targeted contingency protocols and continuity best practices [R010 Pg. 10] • We manage resilience through diversification of suppliers, locations and transportation modes. We assess each node for contingency capabilities and infrastructure stability • We manage resilience through diversification of suppliers, locations and transportation modes. We assess each node for contingency capabilities and infrastructure stability [R006 Pg. 10]
		Flexibility Mechanisms	• We help suppliers implement resilience practices like redundancy, flexibility and collaboration [R003 Pg. 10] • To drive resilience, we look for structural flexibility and redundancy in our Nigerian supply chain. Our contracts allow for demand variability. [R007 Pg. 10] • We develop flexibility in sourcing, inventory and transportation to mitigate volatility and obstacles [R005 Pg. 10]
		Collaboration	• We invest in supplier capabilities and facilities to close infrastructure gaps that cause bottlenecks. [R003 Pg. 10 • We fund upgrades to help suppliers add redundancy to their infrastructure. This collaborative approach is crucial for supply chain resilience. [R003 Pg. 10] • we develop collaborative corrective action plans with partners focusing on training and communication to prevent recurrence. [R008 Pg. 9] • Close collaboration enables us to adapt smoothly together [R002 Pg. 10]
		Simulation Exercises	• Together we identify infrastructure gaps, develop continuity plans, and run response simulations to minimise disruptions [R001 Pg. 10] • We organise regular working sessions, simulations and training programs with Nigerian suppliers and logistics operators to uplift capabilities and resilience [R010 Pg. 10] • We partner closely with our Nigerian suppliers to implement continuity practices like emergency response protocols, redundant power and water supplies, and scenario simulations [R002 Pg. 11]

Source: Researchers' Compilation