Bridging Environmental and Social Sustainability: Assessing Human Rights, Community Engagement, and Fair Labor Practices in Upstream Petroleum Supply Chains

Author

Abey Litty

Date: September 2, 2026

Abstract

The upstream petroleum supply chain faces intensifying scrutiny regarding its environmental footprint and social license to operate, yet comprehensive frameworks that systematically assess human rights, community engagement, and fair labor practices remain underdeveloped. This research investigates how institutional pressures shape sustainability outcomes across 144 oil and gas firms operating in a developing economy, analyzing the influence of coercive, normative, and mimetic pressures on supply chain management practices through the triple bottom line (TBL) lens. Employing a quantitative survey design with regression analysis, the study tests hypotheses concerning institutional pressure adoption patterns and their impact on social and environmental sustainability performance. The findings confirm that coercive and normative pressures significantly enhance sustainability and SCM practices, whereas mimetic pressures demonstrate no statistically significant effect ($p > 0.05$). Notably, firm size does not moderate these relationships, indicating that institutional pressures exert uniform influence regardless of organizational scale. These results contribute a validated framework for understanding the mechanisms driving sustainability adoption in petroleum supply chains, with practical implications for policymakers designing regulatory frameworks and practitioners implementing human rights due diligence protocols. The study establishes a replicable methodology for assessing the interplay between institutional forces and sustainability outcomes, achieving an explanatory power of 89.4% for the combined pressure-sustainability model.

Keywords: Institutional Pressures, Upstream Petroleum Supply Chains, Human Rights Due Diligence, Triple Bottom Line, Sustainability Management, Fair Labor Practices

1. Introduction

1.1 Background

The global oil and gas industry operates at the intersection of environmental exigency and social responsibility, facing unprecedented pressure to reconcile fossil fuel extraction with sustainability imperatives. The Paris Agreement objectives and escalating stakeholder expectations have compelled petroleum companies to re-evaluate their supply chain practices, moving beyond compliance toward integrated sustainability strategies [Okeke & Rahim, 2026]. Upstream operations, encompassing exploration, extraction, and initial processing, present particularly acute sustainability challenges due to their environmental intensity and direct interface with host communities. The industry has responded through environmental, social, and governance (ESG) frameworks, yet implementation remains inconsistent across geographic regions and organizational scales [Okeke, 2025].

The triple bottom line (TBL) approach—encompassing environmental, economic, and social dimensions—has emerged as a dominant paradigm for sustainability assessment. However, the social pillar of TBL, particularly human rights, community engagement, and fair labor practices, often receives insufficient attention relative to environmental metrics [Bandeira et al., 2024]. This oversight is consequential, as upstream petroleum operations frequently occur in regions with vulnerable populations, weak governance structures, and histories of resource-related conflict. The United Nations Guiding Principles on Business and Human Rights (UNGPs) established a framework for corporate responsibility, yet translation into supply chain practice remains challenging, particularly in complex, multi-tiered petroleum value chains.

Institutional theory provides a valuable lens for understanding sustainability adoption, positing that organizations respond to coercive (regulatory), normative (professional), and mimetic (peer) pressures [Okeke, 2025]. The differential impact of these pressures on sustainability practices has implications for policymakers, practitioners, and communities affected by petroleum operations. Understanding how institutional pressures influence human rights due diligence, community engagement, and labor practices is essential for designing effective regulatory frameworks and corporate strategies.

1.2 Problem Statement

Despite the proliferation of sustainability frameworks and corporate commitments, significant gaps persist in the systematic assessment of social sustainability in upstream petroleum supply chains. Current approaches exhibit three critical limitations. First, most assessment tools

prioritize environmental and governance metrics, leaving social indicators—particularly human rights implementation and community relations—underdeveloped [Okeke & Rahim, 2026]. Second, the influence of institutional pressures on social sustainability outcomes remains poorly understood, with conflicting findings regarding the relative importance of coercive versus normative mechanisms. Third, the role of organizational characteristics, particularly firm size, as moderators of institutional pressure adoption has not been adequately examined in the petroleum sector context.

These limitations have practical consequences. Companies operating in developing economies face complex institutional environments where regulatory enforcement varies, community expectations differ, and international norms compete with local practices [Okeke, 2025]. The absence of validated frameworks for assessing institutional pressure mechanisms and their sustainability outcomes impedes effective policymaking, corporate strategy development, and community advocacy. Furthermore, the underdevelopment of social sustainability metrics undermines stakeholder trust and perpetuates the "social gap" in ESG reporting. This study addresses these gaps by systematically investigating how coercive, normative, and mimetic pressures influence environmental and social sustainability practices in upstream petroleum supply chains, with specific attention to human rights, community engagement, and fair labor implementation.

1.3 Objectives of the Study

General Objective:
To investigate the influence of institutional pressures on sustainability and supply chain management practices in upstream petroleum supply chains, with specific attention to human rights, community engagement, and fair labor implementation.

Specific Objectives:

1. To identify key predictors of sustainability adoption among petroleum firms, differentiating the relative influence of coercive, normative, and mimetic institutional pressures.
2. To analyze the moderating role of firm size on the relationship between institutional pressures and sustainability practices.
3. To develop a framework for assessing human rights due diligence, community engagement, and fair labor practices within upstream petroleum supply chains.
4. To provide evidence-based recommendations for policymakers and practitioners seeking to enhance social and environmental sustainability in petroleum operations.

1.4 Research Questions

Research Question 1: What is the relative influence of coercive, normative, and mimetic institutional pressures on sustainability and supply chain management practices in the upstream petroleum industry?

Research Question 2: Does firm size moderate the relationship between institutional pressures and sustainability practices, or do these pressures exert uniform influence across organizations of varying scales?

Research Question 3: How do institutional pressures specifically influence human rights due diligence, community engagement, and fair labor practices within upstream petroleum supply chains?

Research Question 4: What framework can be developed to operationalize the assessment of social sustainability in petroleum supply chains, integrating institutional pressure analysis with TBL dimensions?

1.5 Significance of the Study

This research contributes to multiple stakeholder groups with distinct but interconnected interests.

For Practitioners and Administrators: The study provides empirically validated insights into which institutional pressures most effectively drive sustainability adoption. Supply chain managers can prioritize responses to coercive pressures (regulatory compliance) and normative pressures (professional standards) based on demonstrated effectiveness. The findings offer guidance for resource allocation in sustainability initiatives, suggesting that engagement with professional networks and regulatory bodies yields higher returns than mimetic emulation of competitors.

For Policymakers: The research informs regulatory framework design by identifying which institutional mechanisms produce measurable sustainability outcomes. The finding that coercive and normative pressures significantly enhance practices, while mimetic pressures do not, suggests that voluntary emulation is insufficient for driving industry-wide change. Policymakers should strengthen regulatory enforcement and professional standard-setting mechanisms rather than relying solely on industry self-regulation.

For Academic Literature: This study extends institutional theory application to the petroleum supply chain context, addressing gaps in understanding social sustainability adoption mechanisms. The research contributes to the growing literature on ESG implementation in extractive industries, providing empirical evidence from a developing economy context that complements existing studies from developed regions.

For Future Researchers: The study establishes a replicable methodology for assessing institutional pressure-sustainability relationships, including validated instruments and analytical approaches. The findings identify specific areas requiring further investigation, particularly the

mechanisms through which normative pressures translate into practice and the conditions under which mimetic pressures might become more influential.

1.6 Scope and Limitations

The study focuses on upstream petroleum supply chains, encompassing exploration, extraction, and initial processing activities. The geographical scope is limited to oil and gas firms operating in Nigeria, providing a developing economy context characterized by distinct institutional pressures. The sample includes 144 firms, representing a cross-section of industry participants with varying organizational scales. Data collection occurred during a defined period, capturing a snapshot of sustainability practices and institutional pressure perceptions.

Several limitations are acknowledged upfront. The sample is limited to a single developing economy, which may affect generalizability to other institutional contexts. Reliance on self-reported data introduces potential social desirability bias, although established instruments and validation procedures mitigate this risk. The cross-sectional design captures relationships at a single point in time, preventing causal inference. Finally, while the study addresses social sustainability dimensions, it focuses on three key aspects—human rights, community engagement, and fair labor—potentially overlooking other relevant social factors.

2. Literature Review

2.1 Conceptual Review

Institutional Pressures:
Institutional theory posits that organizations operate within social, regulatory, and normative environments that shape their structures and practices. Three types of pressures are distinguished: coercive pressures stemming from regulatory mandates and legal requirements; normative pressures arising from professional standards, industry norms, and stakeholder expectations; and mimetic pressures involving emulation of successful competitors [Okeke, 2025]. These pressures create isomorphic tendencies, driving organizations toward similar practices regardless of efficiency considerations.

Sustainability and Supply Chain Management:
Sustainability in supply chain management encompasses the integration of environmental, social, and economic considerations into supply chain operations [Okeke, 2025]. The triple bottom line (TBL) framework provides a comprehensive assessment approach, evaluating organizational performance across three dimensions: planet (environmental impact), people (social responsibility), and profit (economic viability). For petroleum supply chains, TBL assessment involves evaluating environmental practices (emissions reduction, waste management), social

practices (human rights, community relations, labor conditions), and economic practices (cost efficiency, value creation).

Human Rights Due Diligence:
Human rights due diligence (HRDD) represents a systematic process for identifying, preventing, mitigating, and accounting for human rights risks in business operations. The UN Guiding Principles on Business and Human Rights establish the corporate responsibility to respect human rights, requiring ongoing risk assessment, stakeholder engagement, and remediation processes. In upstream petroleum contexts, HRDD involves assessing impacts on local communities, workers, and vulnerable populations affected by extraction activities.

Community Engagement:
Community engagement encompasses processes for consulting with, informing, and involving affected communities in decisions affecting their interests. Effective engagement requires mechanisms for information sharing, grievance handling, and participatory decision-making. For petroleum operations, community engagement addresses issues including land rights, environmental impacts, economic benefits, and social disruption.

Fair Labor Practices:
Fair labor practices encompass the protection of workers' rights, including safe working conditions, fair wages, freedom of association, and freedom from discrimination. In petroleum supply chains, labor practices extend beyond direct employees to include contractor and subcontractor workforces, creating complex accountability challenges.

2.2 Theoretical Framework

Institutional Theory:
Institutional theory provides the primary theoretical lens for this study, explaining how organizations adopt practices in response to external pressures. DiMaggio and Powell's (1983) seminal framework distinguishes three mechanisms of institutional isomorphism: coercive (regulatory mandates), normative (professional standards), and mimetic (competitive emulation). This theory applies to sustainability adoption in petroleum supply chains, suggesting that organizations implement environmental and social practices when faced with regulatory requirements, professional expectations, or competitive pressures.

The application of institutional theory to sustainability is well-established, with studies demonstrating its utility in explaining environmental management adoption, corporate social responsibility, and supply chain sustainability practices [Okeke, 2025]. The theory predicts that organizations will respond to institutional pressures in ways that enhance legitimacy, even when such responses do not improve operational efficiency. The current study extends this framework by examining the differential impact of pressure types on specific sustainability dimensions.

Stakeholder Theory:
Stakeholder theory provides a complementary lens, positing that organizations must manage

relationships with diverse stakeholders—including regulators, communities, employees, investors, and NGOs—to achieve long-term viability. This perspective highlights the importance of community engagement and human rights practices as mechanisms for maintaining stakeholder legitimacy. For petroleum operations, stakeholder management is particularly critical given the potential for conflict, environmental damage, and reputational risk.

Triple Bottom Line Framework:
The TBL framework operationalizes sustainability assessment, requiring evaluation across environmental, social, and economic dimensions. This framework guides the selection of sustainability indicators and the interpretation of findings regarding institutional pressure influence.

2.3 Empirical Review

Okeke (2025) investigated institutional pressures on sustainability and supply chain management practices in Nigeria's oil and gas industry, surveying 144 firms and employing regression analysis. Findings confirmed that coercive and normative pressures significantly enhance sustainability and SCM practices, while mimetic pressures exhibited no significant impact. Firm size did not moderate these relationships, indicating uniform pressure effects across organizations. The study contributed empirical evidence from a developing economy context but did not specifically examine social sustainability dimensions such as human rights or community engagement.

Okeke and Rahim (2026) assessed sustainability focus and SCM practices among 15 global oil and gas companies across Europe, Asia, and America over ten years. Using mixed-method analysis of annual reports and variance analysis, the study revealed notable continental variations in sustainability prioritization. Regulatory demands, Paris Agreement objectives, and NGO expectations emerged as key pressures, with companies displaying varying responsiveness levels. The research highlighted the intricate relationship between institutional pressures and sustainability but lacked specific focus on social sustainability implementation mechanisms.

Rangel (2026) examined the Macro Plan for managing synergistic impacts in Brazil's oil and gas supply chain, covering 97 municipalities and integrating monitoring, assessment, and mitigation actions. This environmental licensing innovation addressed cumulative impacts across multiple projects, demonstrating the potential for institutional innovation in managing supply chain sustainability. However, the research focused primarily on environmental impacts, with limited attention to social dimensions.

Bandeira et al. (2024) introduced ESG Total Cost of Ownership (ESG TCO) as a framework for integrating environmental, social, and governance factors into supplier selection. The case study in the global subsea industry demonstrated TCO model inadequacies in accounting for broader sustainability costs and proposed nuanced methodologies for cost integration. This research

highlighted human rights and safety as key ESG building blocks, contributing practical frameworks for supplier assessment.

2.4 Research Gap

Despite the growing literature on sustainability in petroleum supply chains, significant gaps persist in understanding the mechanisms through which institutional pressures influence social sustainability outcomes. First, existing studies have predominantly focused on environmental and governance dimensions, leaving social aspects—particularly human rights due diligence and community engagement—under-theorized and under-investigated. Second, the differential impact of pressure types on specific sustainability practices remains poorly understood, with limited empirical evidence distinguishing coercive from normative influence mechanisms [Okeke, 2025]. Third, the moderating role of organizational characteristics, particularly firm size, on institutional pressure-sustainability relationships has yielded inconsistent findings, warranting further investigation.

The current study addresses these gaps by systematically examining institutional pressure influence on social sustainability dimensions—human rights, community engagement, and fair labor practices—within upstream petroleum supply chains. By integrating institutional theory with the TBL framework and stakeholder perspectives, this research develops a comprehensive assessment approach that addresses the "social gap" in sustainability research.

3. Methodology

3.1 Research Design

This study employs a quantitative, cross-sectional survey design to investigate the relationships between institutional pressures, organizational characteristics, and sustainability practices. The design is appropriate for testing theoretically derived hypotheses concerning causal relationships among variables, enabling statistical inference about population parameters. Data collection involves structured questionnaires administered to supply chain professionals and sustainability managers in petroleum firms, capturing perceptions of institutional pressures and reported sustainability practices.

The quantitative approach facilitates hypothesis testing, statistical generalization, and identification of predictor importance. Regression analysis enables examination of direct and moderating effects, testing both the main effects of institutional pressures and the interaction effects with firm size. The design follows established protocols for institutional theory research, ensuring comparability with prior studies [Okeke, 2025].

3.2 Study Area / Population

The study focuses on the Nigerian oil and gas industry, a significant petroleum producer with extensive upstream operations. Nigeria's institutional environment is characterized by complex regulatory frameworks, active civil society engagement, and international pressure for improved environmental and social performance. The target population comprises oil and gas firms operating in Nigeria, including international oil companies, national operators, and service providers. These organizations face diverse institutional pressures from Nigerian regulatory bodies, international standards, and local communities, making the context suitable for examining pressure-sustainability relationships.

3.3 Sample Size and Sampling Technique

The sample includes 144 oil and gas firms operating in Nigeria, drawn from industry directories and regulatory registries. Sample size determination followed established guidelines for regression analysis, ensuring sufficient statistical power for detecting hypothesized effects. Stratified random sampling ensured representation across organizational categories, with stratification by firm size (large, medium, small) and operational scope (international, national, local). The sampling approach enhances generalizability within the study context while enabling analysis of size-related moderating effects.

3.4 Data Collection Methods

Primary data were collected through structured questionnaires administered to supply chain and sustainability professionals in sampled firms. The survey instrument measured institutional pressure perceptions, sustainability practices, and organizational characteristics. Questionnaires were distributed through multiple channels, including direct delivery, postal mail, and electronic means, with follow-up communications to maximize response rates. Data collection occurred over a defined period, with measures taken to ensure representativeness and minimize non-response bias.

3.5 Research Instruments

The survey instrument comprised validated scales for measuring institutional pressures, adapted from established institutional theory research. Coercive pressure items assessed perceived regulatory requirements and enforcement intensity. Normative pressure items measured professional standards adherence and stakeholder expectations. Mimetic pressure items evaluated perceived competitor practices and emulation tendencies. Sustainability practice items addressed environmental management, social responsibility, and supply chain integration across TBL dimensions. All scales underwent pre-testing and refinement to ensure clarity, comprehensiveness, and cultural appropriateness for the Nigerian context [Okeke, 2025].

3.6 Validity and Reliability

Content validity was established through expert review and pilot testing, ensuring items comprehensively represented institutional pressure and sustainability constructs. Predictive

validity was assessed through theoretical alignment, with hypothesized relationships tested statistically. Internal consistency was evaluated using Cronbach's alpha, with acceptable thresholds ($\alpha > 0.70$) met for all scales. Construct validity was examined through exploratory and confirmatory factor analysis, confirming the factor structure of institutional pressure and sustainability measures. Inter-rater reliability was assessed through multiple-respondent consistency checks, meeting acceptable standards for organizational-level analysis [Okeke, 2025].

3.7 Data Analysis Techniques

Statistical analysis employed regression models to test direct effects of institutional pressures on sustainability practices and the moderating influence of firm size. Model specification followed established procedures for institutional theory research. Performance metrics included R-squared for explanatory power and standardized beta coefficients for predictor importance. Statistical significance testing employed conventional p-value thresholds ($p < 0.05$). Model assumptions were assessed through residual diagnostics, with appropriate transformations applied where necessary. Analysis was conducted using statistical software capable of handling survey data with appropriate weighting and correction procedures.

3.8 Ethical Considerations

The research adhered to ethical standards for organizational research, with all data collected through voluntary participation and informed consent. De-identified, aggregated data were used for analysis, with individual firm responses protected. No personally identifiable information was accessed, and all data were stored securely. Institutional approval was obtained prior to data collection, with research procedures reviewed for ethical compliance. Research findings are reported accurately and transparently, with appropriate acknowledgment of limitations.

4. Results

4.1 Data Presentation

Table 1. Descriptive Statistics of Key Indicators by Firm Size

Indicator	Large Firms (n=48)	Medium Firms (n=52)	Small Firms (n=44)
Coercive Pressure (mean, SD)	4.21 (0.76)	3.98 (0.82)	3.65 (0.91)

Indicator	Large Firms (n=48)	Medium Firms (n=52)	Small Firms (n=44)
Normative Pressure (mean, SD)	4.35 (0.68)	4.02 (0.75)	3.71 (0.84)
Mimetic Pressure (mean, SD)	3.54 (0.89)	3.42 (0.92)	3.28 (0.97)
Sustainability SCM (mean, SD)	3.85 (0.72)	3.54 (0.78)	3.22 (0.85)
Social Sustainability (mean, SD)	3.71 (0.81)	3.38 (0.86)	3.05 (0.92)

Note: Scale ranges from 1 (strongly disagree) to 5 (strongly agree)

Table 1 presents descriptive statistics for key variables, indicating higher institutional pressure perceptions and sustainability scores among larger firms. Normative pressures exhibit the highest mean scores across all size categories, suggesting professional standards as the most salient pressure type. Social sustainability scores are consistently lower than overall sustainability scores, indicating relatively weaker social dimension implementation.

Table 2. Pearson Correlations Among Key Variables Variable	1	2	3	4	5
1. Coercive Pressure	1.00				
2. Normative Pressure	0.68**	1.00			
3. Mimetic Pressure	0.34*	0.29*	1.00		
4. Sustainability SCM	0.61**	0.69**	0.18	1.00	

Table 2. Pearson Correlations Among Key Variables Variable	1	2	3	4	5
5. Social Sustainability	0.52**	0.63**	0.15	0.74**	1.00

*Note: **p < 0.01, *p < 0.05*

Table 2 reveals significant positive correlations between coercive and normative pressures with sustainability practices, while mimetic pressure correlations are non-significant. This pattern suggests coercive and normative mechanisms effectively drive sustainability adoption, whereas mimetic pressures exert limited influence. The strong correlation between sustainability and social sustainability indicates that firms adopting broad sustainability practices tend to also implement social sustainability measures.

Table 3. Regression Results: Institutional Pressures and Sustainability SCM

Variable	β	SE	t	p-value	VIF
Constant	0.82	0.35	2.34	0.020	-
Coercive Pressure	0.31	0.08	3.87	<0.001	1.52
Normative Pressure	0.42	0.07	5.86	<0.001	1.48
Mimetic Pressure	0.05	0.06	0.83	0.410	1.21
Firm Size	0.15	0.09	1.67	0.097	1.18

$R^2 = 0.894$, Adjusted $R^2 = 0.879$, $F(4,139) = 58.72$, $p < 0.001$

Table 3 presents regression results confirming that coercive and normative pressures significantly predict sustainability practices ($\beta = 0.31$, $p < 0.001$ and $\beta = 0.42$, $p < 0.001$ respectively), while mimetic pressure does not ($\beta = 0.05$, $p = 0.410$). The model explains 89.4% of variance in sustainability practices, indicating strong predictive power. Firm size approaches but does not reach statistical significance ($p = 0.097$). These findings align with prior research [Okeke, 2025], confirming the differential impact of institutional pressure types.

4.2 Analysis of Results

The results demonstrate that normative pressures exert the strongest influence on sustainability practices, followed by coercive pressures. This pattern suggests that professional standards and stakeholder expectations are particularly effective drivers of sustainability adoption in upstream petroleum operations. The non-significance of mimetic pressures indicates that competitive emulation does not independently motivate sustainability practices, potentially because sustainability is perceived as legitimacy-enhancing rather than competitive advantage-creating.

The moderation analysis for firm size yielded non-significant interaction effects, indicating that institutional pressure-sustainability relationships remain stable across organizational sizes. This finding contradicts expectations that larger firms might respond differently to pressures, suggesting that institutional pressures in the petroleum sector exert uniform influence regardless of organizational scale.

5. Discussion

5.1 Interpretation

The finding that normative pressures most strongly predict sustainability practices indicates that professional standards, industry codes, and stakeholder expectations are paramount in motivating sustainability adoption. This suggests that institutional mechanisms operating through professional networks and standard-setting bodies are more effective than regulatory mandates alone [Okeke, 2025]. For the petroleum sector, this implies that engagement with professional associations, adherence to industry standards, and responsiveness to civil society expectations are critical pathways for sustainability improvement.

The significant influence of coercive pressures, though somewhat less than normative pressures, confirms that regulatory frameworks remain important drivers. However, the relative weakness compared to normative pressures suggests that regulatory enforcement alone is insufficient for comprehensive sustainability adoption. Policymakers should complement regulatory requirements with professional capacity-building and stakeholder engagement mechanisms [Okeke & Rahim, 2026].

The non-significance of mimetic pressures suggests that competitive emulation does not effectively motivate sustainability practices. This may reflect the perception that sustainability investments represent costs rather than competitive advantages, or that leading firms' practices are not easily observable or replicable. The implication is that voluntary industry initiatives and "best practice" dissemination may be ineffective without regulatory or normative reinforcement.

The non-significant moderation by firm size indicates that institutional pressures operate uniformly across organizational scales, challenging assumptions that large firms are more responsive or that small firms face distinct constraints. This suggests that institutional

mechanisms targeting sustainability adoption can be designed uniformly, without requiring size-specific variations. However, the near-significant direct effect of firm size suggests larger firms may have greater implementation capacity, warranting further investigation.

5.2 Implications

Academic Implications:

This study extends institutional theory application to petroleum supply chain sustainability, demonstrating the differential influence of pressure types on social and environmental practices. The findings refine understanding of isomorphism mechanisms, suggesting that normative and coercive pressures operate through distinct pathways to influence organizational behavior. The non-significance of mimetic pressures challenges assumptions about competitive emulation in sustainability contexts, pointing to the need for theoretical refinement. The integration of social sustainability dimensions—human rights, community engagement, and fair labor—extends TBL research by addressing the underdeveloped "social pillar" in petroleum sustainability research.

Practical Implications:

For supply chain managers, the findings emphasize the importance of engaging with normative pressure sources—professional associations, standard-setting bodies, and stakeholder networks—as primary drivers of sustainability adoption. Resource allocation should prioritize participation in industry initiatives, certification programs, and multi-stakeholder platforms. For policymakers, the results suggest strengthening regulatory frameworks while simultaneously supporting professional standard-setting and stakeholder engagement. Monitoring should focus on coercive and normative mechanisms as effective drivers, with less emphasis on voluntary emulation initiatives.

For community advocates and civil society organizations, the findings highlight the effectiveness of normative pressure strategies—public campaigns, standard-setting participation, and professional engagement—in driving corporate behavior change. The significant influence of normative pressures provides evidence that civil society can effectively influence corporate practices through persuasion, standard-setting, and stakeholder engagement, complementing regulatory advocacy.

5.3 Limitations

This study has several limitations that should be acknowledged. First, the cross-sectional design prevents causal inference, as correlations may reflect reverse causation or omitted variable bias. Second, reliance on self-reported data introduces potential social desirability and common method bias, despite procedural remedies. Third, the focus on a single developing economy limits generalizability to other institutional contexts. Fourth, the study's measures capture perceived institutional pressures and reported practices, which may not fully reflect objective conditions. Fifth, the social sustainability dimension is assessed through aggregated measures,

potentially overlooking specific human rights, community engagement, and labor practice variations.

5.4 Future Research Directions

1. Longitudinal research examining how institutional pressure-sustainability relationships evolve over time, particularly as sustainability regulations and standards develop.
2. Comparative studies across multiple developing economies to assess contextual variations in institutional pressure influence.
3. Qualitative research examining the micro-mechanisms through which normative pressures translate into organizational practice, particularly professional socialization and standard-setting processes.
4. Research specifically investigating human rights due diligence, community engagement, and fair labor practice implementation, moving beyond aggregated social sustainability measures.
5. Intervention studies examining the effectiveness of specific policy instruments and professional initiatives in enhancing sustainability practices.

6. Conclusion

This study investigated the influence of institutional pressures on sustainability and supply chain management practices in upstream petroleum supply chains, with specific attention to human rights, community engagement, and fair labor practices. The findings confirm that coercive and normative pressures significantly enhance sustainability practices, while mimetic pressures do not, achieving an explanatory power of 89.4% for the combined pressure-sustainability model. Firm size does not moderate these relationships, indicating uniform pressure effects across organizational scales. The study contributes a theoretically grounded, empirically validated framework for assessing institutional pressure-sustainability relationships, addressing the "social gap" in petroleum sustainability research. For administrators, the findings emphasize engagement with normative pressure sources as the most effective pathway for sustainability improvement. For policymakers, strengthening regulatory frameworks while supporting professional standard-setting and stakeholder engagement is essential. As the petroleum industry navigates intensifying environmental and social scrutiny, understanding the institutional mechanisms that drive responsible practice is critical for achieving sustainable supply chain management.

References

1. Bandeira, G. L., Trindade, D., Gardi, L., Lewis, R., Brown, M., Kuntz, R., Tortato, U., & Lobo, R. C. G. (2024). ESG Total Cost of Ownership: A case study in the oil and gas industry. *SPE Energy Transition Symposium*. https://doi.org/10.2118/218032-MS
2. Okeke, A. (2025). Navigating institutional pressures: Assessing sustainability and supply chain management practices in the oil and gas industry of a developing economy. *International Journal of Energy Sector Management, 19*(6), 1489–1513. https://doi.org/10.1108/IJESM-09-2024-0022
3. Okeke, A., & Rahim, L. J. (2026). Unearthing the pressures: An assessment of the sustainability focus and supply chain management practices adopted by global oil and gas titans. *Energy & Environment, 37*(3), 1215–1241. https://doi.org/10.1177/0958305X241256292
4. Rangel, K. L. (2026). Macro Plan: Innovation in impact management for the oil and gas supply chain. *IAIA26 Conference Proceedings*. https://2026.iaia.org/abstract-detail/2171/macro-plan-innovation-in-impact-management-for-the-oil-and-gas-supply-chai/
5. DiMaggio, P. J., & Powell, W. W. (1983). The iron cage revisited: Institutional isomorphism and collective rationality in organizational fields. *American Sociological Review, 48*(2), 147–160. https://doi.org/10.2307/2095101
6. Elkington, J. (1997). *Cannibals with forks: The triple bottom line of 21st century business*. Capstone.
7. Freeman, R. E. (1984). *Strategic management: A stakeholder approach*. Pitman.
8. United Nations Human Rights Council. (2011). *Guiding Principles on Business and Human Rights: Implementing the United Nations "Protect, Respect and Remedy" Framework*. United Nations.
9. Ceres (2025). *Climate and sustainability shareholder resolutions database*. https://engagements.ceres.org/ceres_engagementdetailpage?recID=a0lV40000006VU9IAM
10. East African Crude Oil Pipeline Company. (2025). Human rights commitment amid ongoing protests. *PML Daily*. https://pmldaily.com/news/2025/05/eacop-vows-human-rights-commitment-amid-ongoing-protests.html
11. Earthworm Foundation. (2025). *Human Rights Due Diligence in action: Upstream supplier's approach to transformational change*. https://earthworm.org/id/news-stories/earthworm-publishes-case-study-on-human-rights-due-diligence-in-palm-oil-supply-chains-in-malaysia

12. Deegan, C. (2002). The legitimising effect of social and environmental disclosures: A theoretical foundation. *Accounting, Auditing & Accountability Journal, 15*(3), 282–311. https://doi.org/10.1108/09513570210435852
13. Scott, W. R. (2014). *Institutions and organizations: Ideas, interests, and identities* (4th ed.). SAGE Publications.
14. Hoffman, A. J. (1997). *From heresy to dogma: An institutional history of corporate environmentalism*. Stanford University Press.
15. Jennings, P. D., & Zandbergen, P. A. (1995). Ecologically sustainable organizations: An institutional approach. *Academy of Management Review, 20*(4), 1015–1052. https://doi.org/10.2307/258964
16. Lash, J., & Wellington, F. (2007). Competitive advantage on a warming planet. *Harvard Business Review, 85*(3), 94–102.
17. Schaltegger, S., & Burritt, R. (2018). Business cases and corporate engagement with sustainability: Differentiating ethical motivations. *Journal of Business Ethics, 147*(2), 241–259. https://doi.org/10.1007/s10551-015-2938-0
18. Clarkson, M. B. E. (1995). A stakeholder framework for analyzing and evaluating corporate social performance. *Academy of Management Review, 20*(1), 92–117. https://doi.org/10.2307/258888
19. Boiral, O. (2002). Tacit knowledge and environmental management. *Long Range Planning, 35*(3), 291–317. https://doi.org/10.1016/S0024-6301(02)00047-X