

**Assessing the Social Impacts Arising from Oil and Gas Exploration and Production in the Niger Delta
Region of Nigeria: Including Proposals for Solution.**

**A thesis submitted in fulfilment of the requirements for the Degree of Master of Philosophy (MPhil).
Kingston University, London. The United Kingdom.**

Faculty of Science, Engineering, and Computing

School of Engineering and the Environment

Department of Geography, Geology, and the Environment

Leonard Oluwole Olaitan Romiluyi

Director of Studies: Dr Mary Kelly

Supervisors:

Prof. Nigel Walford

Prof. Gavin Gillmore

Emeritus Prof. Ian Jarvis

March 2024

CERTIFICATE OF ORIGINALITY

This is to certify, that the research paper submitted by me is an outcome of my independent and original work. I have duly acknowledged all the sources from which the ideas and extracts have been taken. The project is free from any plagiarism and has not been submitted elsewhere for publication.

Leonard Romiluyi Candidate:-----

Dr Mary Kelly Director of Studies: -----

Prof. Nigel Walford First Supervisors: -----

Prof. Gavin Gillmore Second Supervisor: -----

Emeritus Prof. Ian Jarvis Third Supervisor: -----

Abstract

The economic stability of Nigeria has significantly improved in the past few decades due to the petroleum production activities and the export of oil and gas sources by businesses operating in the petroleum industry. The Niger Delta Region (NDR) has been a prime centre for the commencement of most of these operations because of the vast availability of oil and gas resources in the region. However, these operations have made detrimental impacts on the region by destroying the environmental, soil and marine health. The outcomes are largely attributed to unsustainable discovery and production activities of oil and gas businesses in the region. The unsustainable activities of oil and gas companies are leading to the release of petroleum-derived and petroleum hydrocarbon waste streams that are causing environmental pollution, socio-economic issues, degradation of local communities and declining human health in nine oil manufacturing regions in NDR. Environmentalists and regulatory authorities have proposed the implemented of various strategies to minimise the environment impacts of activities associated with the production and discovery of oil and gas resources in Nigeria. Several laws have also been defined to regular the activities of businesses and ensure sustainable oil operations in Nigeria. However, the current laws and regulations in Nigeria for environment sustainability seem inefficient in light of the ongoing environmental crisis that has only increased in the past decades due to the unethical and unsustainable operations of oil and gas businesses in Nigerian regions, especially in NDR.

The purpose of this study is to analyse the outcomes of MNCs operations and activities on the environment of Nigeria and also describe the existing and previous environmental concerns associated with the production and exploitation of oil reserves in NDR of Nigeria. The study will further highlight issues associated with environmental degradation and determine their correlation with the activities and operations of oil and gas MNCs in the region. The improvement in the environment and financial status of Nigeria can only be observed through the application of sustainable strategies and regulatory operations aimed at targeting and calling out businesses for their involvement in unethical activities. In addition to this, the implementation of effective risk-management practices is also crucial for mitigating the adverse impacts of oil production and exploration activities on the health and wellbeing of Nigerian people and the overall population of the region.

A mixed-method strategy will be used to analyse underlying factors that shape the perception of the public about the development of oil and gas and provide an improved understanding of the reasons that must be considered in supporting and opposing the production and development of oil and gas in Nigeria.

The mixed method approach is applied using both qualitative and quantitative methods. The data is collected through field experts operating in different industries in Nigeria and from public participants comprising age groups across NDR's Bodo community. The findings have revealed mixed responses of to the support and risks of oil and gas management activities in the region. The quantitative data has also shown mixed responses from different age groups about the benefits and drawbacks of these activities. The research highlights diverse perspectives towards the development of oil and gas activities in Bodo communities. The findings have filled the literature gap by examining the potential implications of policies that emerge through these outcomes.

Acknowledgements

To accomplish the goal of completing this dissertation, I would like to thank my esteemed supervisors- Dr Mary Kelly, Prof. Nigel Walford, Prof. (Emeritus) Ian Jarvis and Prof. Gavin Gillmore, who supported me unconditionally throughout the time. The motivation and trust you people had in me has helped me achieve this academic goal. Your support made my study and life in Kingston University an incredible experience time.

I extend my gratitude to my friends, Dr Bridget Irene, for training me in qualitative and quantitative research techniques, and Dr Promise Opute Abdullah, for erudite discussions on the research topic and Dr Julius Irene for your friendship, love, encouragement, and support all through my studies. Without their contribution, this study would not have been possible.

Last but not the least, I would like to thank my family, Abimbola Okunola, Aaron Wole-Romiluyi, Daniel Wole-Romiluyi, Nathaniel Wole-Romiluyi and Joah Dideoluwa Abiodun, for their constant encouragement and endurance during this dissertation, you are the best part of my life. I sincerely thank you all for believing in me and encouraging me all the way to the end. My success reflects the love and encouragement they have given me throughout my life. I am forever grateful to God for blessing me with such a wonderful family.

Table of Contents

Abstract	3
Acknowledgements	5
1. Chapter One: Study Framework.....	16
1.1. Introduction.....	16
1.2. Study Background.....	17
1.3. Statement of Problem.....	19
1.4. Study Aim and Objectives.....	20
1.5. Research Questions.....	21
1.6. Study Expectations	22
1.7. Methodological Approach Used in the Study.....	22
1.8. Previous Work.....	22
1.9. Scope of Work.....	26
1.10. Gap in Literature.....	26
1.11. Significance of the Study	27
1.12. Research Major Areas of Contributions.....	28
1.13. Theoretical Framework	29
1.14. Structure of the Study	30
1.15. Conclusion	31
2. Chapter Two: A Brief Description of Nigeria and Demography of the Study Area (Niger Delta Region)	32
2.1. Introduction	32
2.2. A Brief Overview of the Federal Republic of Nigeria	33
2.3. The Study Area (Niger Delta Region)	35
2.4. Target Population for the Study	37
2.5. Rationale to Gather Data from Expert and Public	40
2.6. Demography of the Study Area (Niger Delta region)	41
2.6.1. The geography	41
2.6.2. The People	41
2.6.3. Education in Niger Delta Region	42
2.6.4. Climate	43

2.6.5.	Settlement Patterns.....	43
2.6.6.	Occupations	43
2.6.7.	Infrastructure and Social Services	43
2.7.	Nigeria Oil Industry: An Overview.....	44
2.8.	Nigeria Oil Industry and Economy.....	45
2.9.	Oil and Gas Manufacturing and Discovery.....	48
2.10.	Challenges Associated with Oil and Gas Exploration and Production.....	48
2.10.1.	Gas Flaring.....	48
2.10.2.	Gas Flaring in Nigeria.....	50
2.10.3.	Gas Flaring Impact on the Economic and Sustainable Development of Nigeria	53
2.11.	Oil spillage	58
2.11.1.	Reasons of Oil Spills in Nigeria	59
2.11.2.	Incidence of Oil Spills in Nigeria	59
2.11.3.	Oil Spillage Impact on Nigeria	64
2.12.	Conclusion	65
3.	Chapter Three: Social Impacts of Oil-induced Environmental Degradation in the Niger Delta Region: A Review of the Literature.....	66
3.1.	Introduction	67
3.2.	Social Influence of OED	69
3.2.1.	Poverty	70
3.2.2.	Cultural Deterioration	72
3.2.3.	Food Security	73
3.2.4.	The Association between Youth Restiveness and Oil	74
3.2.5.	Climate Change	74
3.2.6.	The Correlation of Oil and Human Rights Violation	75
3.2.7.	Unemployment and Crimes	76
3.2.8.	The Correlation of Oil and Corruption	77
3.2.9.	Impacts on Education	78
3.2.10.	Impacts on Fishing	79
3.2.11.	Impacts on Farming	80
3.2.12.	Oil and Its Links to Forced Resettlements and Displacements	82
3.2.13.	Politicizing of Environmental Issues	83
3.2.14.	Health Impacts of Oil Spillage	84

3.2.15.	Institutional and Regulatory Failure in Oil and Gas Sector in Nigeria	86
3.2.16.	Impacts on Economy	87
3.2.17.	The Provision of Projects for Community Development.....	88
3.3.	Conclusion.....	89
4.	Chapter Four: Stakeholder Engagement and Sustainable Development Issues in the Niger Delta Region of Nigeria	90
4.1.	Introduction	90
4.2.	Stakeholder Theory	92
4.3.	Stakeholder Engagement.....	94
4.4.	Studies on Stakeholder Engagement	95
4.5.	The Significance of Stakeholders in Sustainability Literature	98
4.6.	Stakeholder and Organisational Sustainability	100
4.7.	Integrating Stakeholder Engagement	101
4.8.	Nigerian Petroleum Industry	103
4.9.	Oil Extraction and CSR	103
4.10.	Structure and Management of Oil and Gas Industry of Nigeria	106
4.10.1.	Structure of the NPI	108
4.11.	Sustainability in Nigeria	111
4.12.	Sustainable Development	113
4.13.	Sustainability Efforts Made by Different Countries	115
4.13.1.	Role of Switzerland	115
4.13.2.	Role of USA	116
4.13.3.	Role of European Unions	116
4.14.	Oil MNCs and the Sustainability Paradox in the NDR.....	116
4.15.	Challenges to Sustainable Development in Nigeria	121
4.15.1.	Poverty	122
4.15.2.	Policy Implementation	124
4.15.3.	Institutional efficiency	124
4.15.4.	Legislation and Enforcement	125
4.15.5.	Corruption	126
4.15.6.	CSR and Information Accessibility	127
4.15.7.	Government Strategy and Governance Reform	128
4.15.8.	Comprehensive, Comprehensible, and Enforceable Environmental Enactment.....	130

4.16.	Conclusion	130
5.	Chapter Five: Research Design and Methodology	131
5.1.	Introduction	131
5.2.	The Study Area	132
5.2.1.	Target Population for the Study	132
5.3.	Geographic Proximity and Public Attitudes toward Energy Development	134
5.4.	Rationale to gather Data from Expert and Public.....	134
5.5.	Questionnaire Sample Size Determination.....	135
5.6.	The Scope of the Research.....	135
5.7.	Research Design	136
5.8.	The Rationale of Mixed Method Approach	137
5.9.	Quantitative Study	138
5.9.1.	Design of the Survey Questionnaire	138
5.9.2.	Survey Format	140
5.9.3.	Quantitative Data Analysis - Kruskal–Wallis (KW) Test.....	142
5.10.	Qualitative Study.....	142
5.10.1.	Design of the Research Instrument- Qualitative Study	142
5.11.	Data Collection Instruments.....	143
5.12.	Selection Criteria and Qualitative Data Collection Technique	144
5.13.	Pilot Study	146
5.14.	Data Organization Technique	147
5.15.	Data Analysis	148
5.16.	Triangulation and Computer Aided Analysis	148
5.17.	Data Transcription	149
5.18.	Qualitative Data Analysis – Content and Thematic Analysis	150
5.19.	Reliability and Validity	152
5.19.1.	Reliability of data.....	152
5.19.2.	Validity	152
5.20.	Ethical Considerations	153
5.21.	Conclusion	154
6.	Chapter Six: Findings and Discussion	154
6.1.	Introduction	154
6.2.	Quantitative Study	155

6.2.1.	Sociodemographic Profile	155
6.2.2.	Descriptive Statistics	158
6.3.	Inferential Statistics	202
6.3.1.	Statistical Analysis and Findings across the Age Groups.....	202
6.3.2.	Public Perceptions	203
6.3.3.	Communities Concern about Oil Exploration Activities	207
6.3.4.	Oil Company’s Roles in Environmental Abuse in The Niger Delta Region	218
6.4.	Qualitative Analysis	225
6.4.1.	Sociodemographic Information – Qualitative Study	225
6.4.2.	Qualitative Analysis and Themes	227
6.4.3.	Opinions of a Number of Experts About the Consequences of Oil Production and Exploration in Niger Delta	227
6.4.4.	Sustainability and Stakeholder Involvement in the Niger Delta Region	235
6.4.5.	Nigeria and Its Environmental Policies Associated with Oil and Gas	239
6.5.	Conclusion.....	246
7.	Chapter Seven – Summary of Findings, Conclusions and Recommendations	246
7.1.	Summary of Findings and Conclusions	246
7.2.	Filling the Knowledge and Literature Gaps	247
7.3.	Contributions and Implications of Study	247
7.4.	Recommendations and Areas for Further Research	249
7.4.1.	Recommendations for Action	249
7.4.2.	Limitations and Scope for Further Research	250
8.	References.....	252
9.	Appendices	331
9.1.	Appendix 1: Survey Questionnaire	331
9.2.	Appendix 2: Interview Guide.....	342
9.3.	Appendix 3: SPSS tables.....	345
9.4.	Appendix 4: Ethics Approval	350
9.5.	Appendix 5: Consent form	351
9.6.	Appendix 6: Participant Information Sheet-Survey	354
9.7.	Appendix 7: Participant Information Sheet- Interview	356
9.8.	Appendix 8: Invitation to Interview Participants.....	358
9.9.	Appendix 9: PhD Report Upgrade.....	360

List of Figures

Figure 1: Geographic Map of Nigeria. (Source: Ite et al. 2013)	35
Figure 2: NDR maps of nine states. Sourced by Department of Geography, Minna, Nigeria (2022)	36
Figure 3: The Bodo region. Source: BBC News, (2014).....	39
Figure 4 NDR map in the southern Nigeria (Ebhuoma et al., 2020).....	41
Figure 5 Disruptions in production of natura crude oil in Nigeria (Short-term Energy Outlook, 2016)	47
Figure 6 The location of Gas flaring in NDR (Seiyoboh and Izah, 2017).....	51
Figure 7 Production and usage of crude gas and oil in Nigeria 2006-2014.....	52
Figure 8 Financial loss caused by gas flaring in Nigeria (Olujobi and Yebisi, 2022)	56
Figure 9 Hybrid model to reduce gas flaring in oil and gas industry Nigeria (Olujobi and Yebisi, 2022)....	57
Figure 10 Summary of spill incidences Source: Department of petroleum resources (DPR), 2014	61
Figure 11 Oil spill in NDR (Kadafa, 2012; World Bank Group, 2015).....	63
Figure 12 Oil spillage impact on vegetation loss in Ogoni land in NDR (A) (Greyl, 2018), Russia's waste of millions of tons of oil from pipelines (B) (Achebe et al., 2012).....	63
Figure 13 Incidents of oil spills in Nigeria	65
Figure 14: Structure of NPI (Nigerian Oil and Gas Industry 2017).....	108
Figure 15: Main actors in the upstream petroleum market of Nigeria (NNPC, 2016).....	109
Figure 16: Primary activites of Nigerian midstream petroleum market (NNPC, 2016).....	110
Figure 17: Activities of downstream petroleum market in Nigeria (NNPC, 2016)	111
Figure 18: The Bodo region. Source: BBC News, (2014)	133
Figure 19: Workflow Mixed Methods Research (Choy, 2014)	138
Figure 20: Flow Chart of Participants in the Survey	140
Figure 21: Data Design and Processing.....	149
Figure 22: A streamlined Codes-to-Findings for the Qualitative Inquiry.....	152
Figure 23: Ethnicity Profile	152
Figure 24: Occupation Profile	156
Figure 25: Monthly income Profile.....	157
Figure 26: Educational qualification Profile.....	158
Figure 27: Children at Greater risk	159

Figure 28: high rates of unemployment in the oil-producing region	160
Figure 29:oil and gas development projects resulted in the displacement of the host community.	160
Figure 30: Exploration Projects and cost of living	161
Figure 31: Oil and gas will be safe if properly regulated and monitored	162
Figure 32: Exploration activities need to be more regulated.....	162
Figure 33: oil discovery brought a great wealth to Nigeria	163
Figure 34: oil and gas explorations are biggest threat to our existence	163
Figure 35: provision of social amenities in Niger Delta communities.....	164
Figure 36: the increase in rural-urban migration	165
Figure 37: switching to renewable energy will benefit the society more	165
Figure 38: Statutory laws and regulations are ineffective in Nigeria	166
Figure 39: Improved understanding of sustainability for delivering sustained social change.	167
Figure 40: Water Contamination.....	167
Figure 41: Air Contamination.....	168
Figure 42: Human and Animal Health.....	169
Figure 43: Exploration activities are threat to existing economies.....	169
Figure 44: Surface Disruption.....	170
Figure 45: Water Shortage	170
Figure 46: Conflict is a major threat to Nigeria’s unity.	171
Figure 47: Water Overflow	171
Figure 48: Marginalisation.....	172
Figure 49: Displacement	173
Figure 50: Global Warming.....	173
Figure 51: Entire landscape in the region have been degraded	174
Figure 52: Water Contamination.....	175
Figure 53: Community suffer from administrative neglect	175
Figure 54: Oil companies provide indigenous people with financial assistance in Niger Delta region	176
Figure 55: Job creation to indigenous people	177
Figure 56:Community elders in the Niger delta were corrupt or not.....	178
Figure 57: Sabotage and theft through oil siphoning has become a major issue	178
Figure 58: Environmental degradation increases poverty Niger delta region.....	179
Figure 59: Negotiating table to tackle the problems.....	179

Figure 60: Impacts of oil and gas exploitation on Nigerian economy.....	180
Figure 61:Multinational oil companies need to refrain from various activities damaging environment .	181
Figure 62:Scholarship provision to students at all levels of education	182
Figure 63: Oil company’s role in the environmental abuse.....	183
Figure 64: High Levels of Poverty	183
Figure 65: Unemployment.....	184
Figure 66: Non-Involvement of Local People	185
Figure 67:Marginalised	185
Figure 68: Poor Governance in Nigeria.....	186
Figure 69: Exploitation in the Region.....	187
Figure 70: Unsustainable Activities.....	188
Figure 71:Ineffective Environmental Regulation	189
Figure 72:Statutory laws and regulations	189
Figure 73Oil Spills.....	190
Figure 74:Climate change.....	191
Figure 75:Air pollution	191
Figure 76:Niger Delta communities are poor manage by the oil producing company	192
Figure 77:Compensation can solve environmental-related problems	193
Figure 78: Provision of social amenities	194
Figure 79: Government inaction has contributed to Niger Delta crisis	194
Figure 80:Nigerian government should adopt international laws and regulations.....	195
Figure 81: Declined crop yields, leading to a significant decrease in food security	196
Figure 82:Multinational Oil Companies gives management jobs/promotions.....	196
Figure 83: Unemployment among the youths	197
Figure 84:Displacement	198
Figure 85:Drift in rural-urban region	198
Figure 86:Poor Human Wellbeing	199
Figure 87:Benefits of oil and gas development projects	200
Figure 88: Greatest impact of oil and gas companies in the regions.....	200
Figure 89: Key beneficiaries from the activities of the oil and gas companies.....	201
Figure 90: Oil producing companies influence	202
Figure 91:Public Response to Regulatory Institutional Vulnerabilities Nigeria's Oil and Gas Industry	204

Figure 92:Public Response regarding provision and Improve Infrastructure and Social Services in the Niger Delta Region.....	206
Figure 93:Public Response on environmental degradation and its link to poverty	209
Figure 94:Public Response Regarding the need to keep all the parties around the negotiating table to tackle oil-related problems in the Niger Delta region.....	212
Figure 95: Public Response Regarding the key consequences of oil exploration in Niger Delta	214
Figure 96:Public Response regarding environmental destruction host communities	217
Figure 97:Public response regarding the keys Impacts of climate in the Niger Delta Region.....	219
Figure 98: Public Response on the government roles in the Niger delta crisis	221
Figure 99:Public Response regarding the needs for adopting international laws and regulations for monitoring various petroleum activities.....	223

List of Tables

Table 1: Research Instrument Development – Survey.....	141
Table 2: Research Instrument Development – Interview:.....	143
Table 3: Review of Steps used in Thematic and Content Analysis	151
Table 4:Ranks	205
Table 5:Hypothesis Test Summary	205
Table 6 Ranks.....	207
Table 7: Hypothesis Test Summary	207
Table 8:Rank Table	210
Table 9:Hypothesis Test Summary	210
Table 10: Rank Table	213
Table 11: Hypothesis Test Summary.....	213
Table 12: Rank Table	215
Table 13: Hypothesis Test Summary.....	215
Table 14: Rank Table	220
Table 15: Hypothesis Test Summary.....	220
Table 16: Mean Rank of the Groups	222
Table 17: Hypothesis Test Summary.....	222
Table 18: Mean Rank of the Groups	224
Table 19: Hypothesis Test Summary.....	225
Table 20: Demographic Characteristics of the Qualitative Sample ($n=18$)	226
Table 21: Participant’s (Experts) Information.....	227

1. Chapter One: Study Framework

The first chapter will provide a general framework for the research. It will cover the problem statement, research aims and objectives, research expectations, research significance and a brief account of methodologies used in the study. The following chapter will also provide an outline of the research and a brief background of literature on problems associated with oil in the Delta region of Nigeria.

1.1. Introduction

The demand for natural gas and oil is increasing across the globe. The increasing demand can become a threat to the sustainable growth of society if governments and oil manufacturers fail to incorporate proper corrective and proactive environmental control strategies to minimise the influence of their activities on the overall environment. Researchers and scholars review the production of oil and gas and associated problems in Niger Delta as controversial topics with diverse opinions and views. Environmental threats have increased in recent years.

The degradation of environmental resources is creating threats to the long-term sustainability of the planet Earth. The oil and gas sector must be examined to identify their contribution and impact on the declining environmental conditions across the globe. A lack of preventive measures has evidently become a primary reason for poor environmental health and wellbeing. Nigeria is among the many regions in the world that have suffered from the degradation of natural resources for diverse purposes. Nigeria is a part of OPEC (Organisation of Petroleum Exporting Countries), which comprises the largest 8 oil manufacturing countries in the world. However, the dependence on oil and natural gas in Nigeria has also led to the violation and degradation of available sources in this region. The oil production procedures have harmed almost all elements of the natural climate in Nigeria. Not a single place in Nigeria is protected from the adverse impact of the degradation process, including the offshore aquatic bodies and biodiversities in various forms and shapes. Not just this, islands have also suffered in the region due to oil pollution, pipeline explosions, gas flaring, cancer and various other health conditions, leaching of poisonous substances, acidic rains, communal crises and spillages (Friends of the Earth, 2004 and 2008; Amnesty International, 2005; E&P Forum/UNEP, 1997).

The production and discovery of oil and natural gas resources is a threat to global environmental sustainability. This process is among the primary contributors to CO₂ emissions, greenhouse gases, global warming and depletion of the ozone layer. It also includes pollution in the article and anthracitic regions due to geological diffusion and relief drift.

Despite the harmful impacts of the manufacturing and discovery of oil and gas resources, the world is relying on these energy carriers to fulfil the daily routine requirements and carry out operations. A primary reason behind the dependence on these harmful procedures is the absence of renewable and sustainable processes to perform the same operations without causing environmental degradation. As a result of this, the global environment has become prone to natural calamities caused by the process of producing and exploring oil and natural gas resources.

Niger Delta has witnessed some of the major social impacts of the oil and gas manufacturing process. These consequences include intra and inter-communal tension, inter and intra-tribal tension, increasing challenges for youngsters, militancy, violation of justice and human rights and the implementation of foreign inventories. Some of these problems have become endemic in the region. Niger Delta requires proactive and corrective measures to minimise the influence of environmental and social issues on its health and protect mankind from the increasing challenges in environmental sustainability.

The following research will take account of a range of problems caused by oil and natural gas identification and production processes. This information will be used to discuss potential corrective and proactive measures and emphasise the petroleum production and identification activities in West Africa's Niger Delta region in Nigeria.

1.2. Study Background

The production and exploration of crude oil has acquired millions of dollars invested by multinational oil corporations (MNOCs) to import advanced technologies and perform challenging operations to generate successful outcomes from this process. Multinational businesses have invested huge sums of money in this process to obtain millions of oil barrels and generate significantly higher returns for their business (Odoemene, 2011; Oguduvwe, 2013). But, the profitable outcomes of MNOCs have not made any positive impacts in Niger Delta despite the region being a leading source of oil in Africa (Oguduvwe, 2013; Oluduro and Oluduro, 2012).

Despite obtaining millions of dollars in profits, the population of the Niger Delta Region (NDR) claims that industrial activities, including gas flaring, ineffective disposal of chemicals, oil wastes and other types of toxins, are externalities caused by the ineffective production mechanisms of MNOCs (Donwa, 2011). The people of NDR believe that MNOCs should not only consider the direct costs and profits in their operations, but they should also think about additional expenses that can be important to the local communities and environment through their activities. In addition to this, these extra expenses should also be considered in the decision-making and finance management plans (Ogula, 2012; Omojimate, 2012).

Concerning this, Aras and Crowther (2009) have stated that ineffective outcomes of technical externalities are an indicator of industrial failure. Hence, MNOCs should identify and accept the financial duty of their business associated with the outcomes of their operations (Donwa, 2011; Olufemi, 2010).

Amadi and Abdullah (2012) utilised the triple bottom line (TBL) approach to suggest that the NOR demands must be acknowledged by MNOCs within the financial and economic structure of embracing the values of stakeholder groups. Considering the TBL approach, the stakeholders comprise any organisation, individual or group that is influenced by business operations (Amadi and Abdullah, 2012). According to Edino et al. (2010) and Odoemene (2011), negative externalities from the exploration process of oil and gas resources are a leading cause of increasing health issues, forced immigration, social crisis, deprivation of resources and harm to agricultural farmland. The indirect cost of externalities is implied by indigenes that are not associated with the systems, contracts of internal transactions of MNOCs (Oguduvwe, 2013; Ogula, 2012). In this context,

Amadi and Abdullah (2012) implemented the TBL approach and mentioned that businesses should focus on providing benefits to their stakeholders instead of just their shareholders. The local population of NDR believes that the economic challenges of the region can be resolved if MNOCs fairly distribute revenue from the oil and gas production process (Iniaghe et al., 2013; Ogula, 2012). Moreover, Carney et al. (2011) agreed that all stakeholders must receive equal incentives and benefits from businesses. The fair distribution of economic benefits and sustainability will provide a mechanism to minimise the impacts of capital distribution and provide alternative strategies to boost the host economy that suffers from environmental degradation caused by MNOC operations (Ogula, 2012).

Various MNOCs, including Shell Petroleum Development Company (SPDC), are relying on TBL as a key framework to guide sustainable operations (Amadi and Abdullah, 2012). The TBL approach was developed to create a balance in the economic, social and environmental factors (Amadi and Abdullah, 2012). The local populations have faced displacement in large numbers due to the environmental degradation caused by oil manufacturing and exploration (Onwubiko et al., 2013). The local population of NDR are not satisfied with the way MNOCs and the Nigerian government are conducting development initiatives in the region (Akhigbe, 2013). This dissatisfaction is leading to conflicts in the internal region (Chukwuemeka and Aghara, 2010). However, MNOCs are also helpless in NGR due to the strong hegemonic alliance between the government, elites and oil companies, which adds barriers to the implementation of sustainable initiatives in the region (Obi, 2011).

Environment accounting can reduce the negative impact of business activities by closely monitoring natural resources and their associated impacts on the global environment (Donwa, 2011). The process

focuses on the wellbeing of residents living in resource regions and ensures effective utilisation of resources to ensure their sustainable impacts (Donwa, 2011). Most NDR residents believe that oil and gas production and exploration activities are the primary contributors to the declining sustainability and productivity of the area (Ebegbulem et al., 2013). The degradation of the natural environment has caused a decline in agricultural activities and fisheries like lumber and farming corporations that dominate the traditional economic setup (Oshwofasa et al., 2012). The nutritional value of crops in NDR is affected by oil spillage and gas flaring in the region (Edino et al., 2010). The underground water resources are contaminated by acid rains and heatwaves caused by gas flairs (Edino et al., 2010). Environment degradation has restricted the ability of local communities in NDR who used to operate independently to meet their requirements (Snapps, 2011). The ongoing crisis in Niger Delta is caused by environmental degradation that has transformed the rich ecology of the region into a wasteland despite the presence of rich natural resources (Okpara, 2011).

The environmental laws associated with regulating the activities of MNOCs are not being implemented and followed by government bodies, due to which most oil companies disregard their legal responsibilities towards the environment and society (Idemudia, 2009). Nigeria is a rentier region that accounts for more than half of the government income for nontax resources and tax on profit and whose financial stability relies on a one-export economic process (Akinde, 2011). A rentier state is characterised by the presence of arbitrary rules, authoritarian laws, and a focus on loyal and close relationships instead of efficiency and merit (Bagaji et al., 2011; Emuedo, 2010).

The local population of NDR has relied on rich resources and subsistence for centuries. However, these resources have become almost extinct in the region causing financial, environmental and social problems in the region (Odoemene, 2011). The population of NDR relies on farming, hunting and fishing as their key professions; all these professions require environmental sustainability to ensure the survival of natural habitat (Obi, 2011). The people of NDR are now facing poverty and crisis due to the inability of the Nigerian government to enforce laws that protect and monitor environmental health (Obi, 2011; Omojimate, 2012).

1.3. Statement of Problem

The present study aims to explore questions that arise due to environmental degradation and abuse in NDR due to the activities of MNOCs. The study will investigate the influence of excessive consumption of non-renewable energy sources causing harmful environmental impacts, including the generation of solid wastes, air emissions and liquid effluent discharges (Eweje, 2007; Idemudia and Ite, 2006).

Another motivation for the present study is the analysis of corporate social responsibility (CSR) in only theoretical contexts and frameworks, which still lacks solutions that can be identified through empirical strategies (McWilliams et al., 2006). Even though an organisation's primary goal is to maximise income and benefits of shareholders (Freeman, 2001), the senior management must strategically consider groups that are crucial for the long-term success of their business (Jamali, 2008; Friedman, 1970).

Multinational oil corporations (MOC) are going beyond their primary aim of generating profit and considering the interests of stakeholders who can potentially be impacted by their activities (Carroll, 2004). A big percentage of the credit for this change in this perspective of MOCs goes to the percentage of studies that have reviewed CSR and its impacts on society and the environment. Businesses operating in the oil sector have been accused of involving in unethical operations that have harmed society in so many ways by promoting extortion, kickbacks, commission fees and bribery (World Bank, 2005).

Therefore, the following research will examine the influence of stakeholder management and CSR on the corporate social activities of MOCs in Nigeria. The literature on CSR in Nigeria is very limited despite the relevance of CSR in the Nigerian sector due to environment degradation and social crisis (Eweje, 2007; Idemudia and Ite, 2006; Frynas, 2005). Some previous studies have explored the corporate social activities and CSR of SPDC in the oil sector of Nigeria (e.g. Boele et al., 2001; Eweje, 2006b). The present research will investigate the influence of stakeholder management and CSR on the corporate social activities of MOCs, focusing on the MOC workers and hosting communities by relying on the sample of MOCs in Nigeria such as Chevron and Shell, independent oil companies and the representations of host communities. Moreover, the study will also analyse ways to fill gaps in stakeholder management and CSR in the previous literature.

1.4. Study Aim and Objectives

The idea for the present study was generated through the identification of existing issues in Nigeria, such as a negative influence on the livelihood of oil and gas manufacturing communities, environmental degradation, the negligence of environmental health by the Nigerian government and oil companies, ineffective integration of environment justice, abuse of human rights and economic discrimination.

The research objectives and aims are primarily focused on conveying a study's intentions to the target audience. The aim is to express what the study wants to achieve. While on the other hand, the objectives describe how the aims are going to be achieved. Study objectives can also give critical information on the steps taken to answer pertinent research questions. This study on the oil and gas sector of Nigeria came about after a long look at environment problems caused by the exploration of crude oil in NDR. The oil

exploration problems associated with crude oil are found in the oil manufacturing areas of NDR, which pose significant socioeconomic problems. Solutions are therefore imperative to deal with these oil pollutions that impact the physical environment and give rise to socioeconomic problems. To solve these problems, the study establishes appropriate aims and objectives, which form the main focus of the research.

The present study will examine the social impacts of oil and gas manufacturing and exploration in NDR Nigeria to develop an appropriate mechanism to reduce these impacts. Within that aim, this study seeks to achieve five objectives, namely:

1. To review the extent of environmental degradation in oil manufacturing regions within the context of effects, causes and patterns.
2. To identify and describe the primary influence of oil and gas production in NDR of Nigeria with reference to the impacts of environmental degradation on the community.
3. To examine the extent to which the public sector is playing a role in improving CSR for environment and development programmes.
4. To analyse the impact of CSR activities by MOC on community perception in Nigeria.
5. To examine the perceptions of the different stakeholders about the operations associated with oil and gas production in NDR.
6. To review challenges that are currently affecting good sustainable management systems in Nigeria and how these can be addressed.

1.5. Research Questions

In line with the above-mentioned aim, the present research questions are mentioned below to obtain the goals of the study:

RQ 1. To identify the levels of degradation of the local environment in oil manufacturing regions within the context of effects, patterns and causes.

RQ 2. What are the key influences of oil and gas production and exploration in the NDR of Nigeria with reference to the impacts of environmental degradation on the community?

RQ 3. To what extent does the public sector play a role in strengthening CSR for the environment and development program?

RQ4. To examine the impact of CSR activities by MOC on community perception in Nigeria.

RQ 5. What are the perceptions of the different stakeholders about operations associated with oil and gas production in NDR?

RQ 5. What are the challenges that are currently affecting good sustainable management systems in Nigeria, and how can these be addressed?

1.6. Study Expectations

It is expected that the research will provide detailed guidelines to policy developers and other relevant stakeholders in NDR to make informed choices about the implementation of strategies focused on promoting sustainable development in the region. Upon its completion, the study will also assist in updating current interventions and policies focused on the financial empowerment of local residents of NDR. In addition to this, the research will provide recommendations that can assist relevant authorities in mitigating water pollution and reducing the degradation of agricultural land, which will ultimately contribute to the wellbeing of the local residents of Niger Delta Region.

1.7. Methodological Approach Used in the Study

The present research will be a useful addition to the literature because it adopts a variety of strategies to investigate the environmental health of NDR, which will also assist in the analysis of hydrocarbon pollution of the financial strength of local communities.

The study is focused on collecting and analysing data available through both quantitative and qualitative data procedures. A constructive research method will be applied to answer the research questions and identify solutions to the identified problems. By using constructive research, the research will primarily focus on the primary research approach and rely on data collected through different forms such as online interviews and questionnaires.

1.8. Previous Work

Previous literature has extensively focused on finding measures to identify the best approach to improve environmental sustainability and provide energy to fulfil the increasing energy demand on a global scale. Some prominent studies in the literature comprise the studies by Eteng (1997), Staney (1990), Osuntokun (1997), Gbadegesin (1997) and Onwuka (2005). The findings of the mentioned studies and various other researchers have immensely helped in structuring and strategising measures of management of the social and environmental issues concerned with the exploration of oil and gas resources. Onwuka (2005) has studied the impact of oil extraction on poverty and environmental challenges in the NDR of Nigeria. The study has explored damages to agricultural lands, inland pollution, harm to atmospheric air and biodiversity loss in NDR (Onwuka, 2005). The findings are focused on finding ways to promote growth without causing harm to the environmental health of the region.

Despite the commercial advantages of the petroleum sector, there are some problems associated with the functioning of this sector. According to George et al. (2016), the oil and gas industry is recognised for its environmental impacts and degradation of the livelihood of people by destroying natural resources such as land, water and air. The increasing requirement for oil in various industries, such as the transport industry, has led to a 3-fold increase in carbon emissions by the oil sector, which is significantly high for the sustainability of the natural environment (Saswattecha et al., 2015). Previous researchers, environmentalists and non-government corporations have criticised the petroleum sector for its adverse environmental impacts and damages and contribution to increasing health issues across the globe (Krupnick and Gordon, 2015).

According to various researchers, including FAO (2017), Inoni *et al.* (2006) and FAO (2003), more work must be centred around the adverse impacts of oil spillage or marine life because it will not only provide insight into the long-term sustainability of water resources but also offer details on the ideological perspective of the correlation between environmental health and oil spillage. In this context, Kadafa (2012) has examined the impact of oil exploitation and exploration on the environmental stability of NDR by using a tabular analysis of the obtained data from already published resources. The researcher identified that the oil sector has enormously contributed to the financial development of Nigeria. However, the unsustainable activities of MNOCs have severely damaged the ecosystem of NDR (Kadafa, 2012). Adati (2012) also explored the impact of oil spillage and exploration in NDR through a comparative analysis of published information from 1976-2000 on the descriptive procedures such as bar and line graphs and identified a decline in the quantity of oil spillage but a visible increase in the times and percentage of oil spills. Inoni et al. (2006) have found a decline in agricultural yield in recent times due to environmental degradation caused by the vandalisation of oil pipelines and oil spills.

Ojimba (2012) conducted a study using a sample population of 296 residents of 17 local regions in Nigeria and implemented a stochastic trans-log manufacturing mechanism to explore the impact of oil pollution on the production of crops in the rivers state of the country. The study identified that crude oil pollution has resulted in a significant reduction in the farmland size, reduced marginal physical product and a further increase in the output of non-polluted farms. The results revealed that farmlands that were affected by the pollution of crude oil and the correlation between physical inputs were leaning towards strong negative scale returns in comparison to farmlands that were not affected by this pollution shared a comparatively positive correlation with physical inputs (Ojima, 2012). It indicates that productivity increases with the addition of resources. However, the addition of resources to polluted lands will reduce the productivity percentage in the regions (Ojima, 2012). The efficiency of crop farmers is also affected by

crude oil pollution. For example, Ojima (2012) also identified that not even 22% of farmers were technically efficient in utilising resources in polluted farmlands, in comparison to 33% of technically efficient farmers in non-polluted farmlands. Ojima (2012) identified that environmental degradation is a primary threat to farmers because it negatively impacts their physical capabilities and desires to invest in their farms. It will defeat the purpose of farming even before the process is properly initiated, particularly in cases where individuals have no hopes of receiving compensation from the farmland due to pollution and degradation of natural resources. Top of Form

The effects of oil and gas exploration on the financial wellbeing of NDR residents were critically evaluated by Ebegbulem et al. (2013). An extensive analysis of the previous literature was conducted by Ebegbulem et al. (2013), who identified regional neglect and adverse impacts of pollution on the economic health of the local population. The study has further mentioned that oil and gas exploration is a primary contributor to environmental degradation in NDR. In this context, Sam et al. (2017) suggests that funding to clean oil spillages and soil screening is essential for enhancing the wellbeing of the contaminated land. The cleanup initiative by the Nigerian government will positively impact most areas of NDR and also generate positive environmental impacts in the region (Sam et al., 2017).

Akpotodje and Salau (2015) conducted an empirical analysis through a unique, yet measurable production mechanism based on the production function framework of Ramon Lopez's Cobb Douglas to analyse agricultural productivity and oil pollution in NDR. The study concluded that an increase in the oil spill levels, and degradation of natural green resources adversely impact agricultural productivity in NDR because land, capital and labour are key sources of agricultural productivity in NDR. Concerning this, Ogwu et al. (2015) explored the impacts of petroleum policies and operations on the environmental wellbeing in Nigeria using descriptive methods to obtain logical outcomes. The results revealed that oil companies in NDR are the key contributors to harmful impacts on the biodiversity and ecosystem in the region.

The impacts of oil spills on the safety of seafood in the coastal regions of Ibeno and Akwa Ibom State were examined by Ekpenyong and Udeme (2015) in their study. The researchers identified that toxic petroleum hydrocarbons were consumed by marine species due to oil spills. The activities of petroleum companies on different forms of economic challenges in Nigeria were examined by Aminu and Abdul Rahman (2012) and Paul (2015), who utilised the descriptive analysis technique to obtain data from secondary sources. The authors identified that the economic crisis in Nigeria was primarily triggered by the unethical and unsustainable activities of petroleum businesses in the region. Ekanem and Nwachukwu (2015) further contributed to the literature by exploring the level of environmental degradation in NDR and analysing the activities of the oil business in management that affect farmlands in the region. Oil pollution was

identified as a primary reason for damaging agricultural land, fishponds, ecological wellbeing and even the health of the human population in NDR (Ekanem and Nwachukwu 2015).

A further addition to the literature is the study of Atubi et al. (2015), who examined the influence of environmental degradation on the wellbeing of the human population in nine communities in the Delta State of Nigeria. Atubi et al. (2015) identified that gas flaring has a prominent and dangerous influence on human health in the studied region, which gives rise to extreme emissions and temperature levels. Environmental degradation and oil spillage are mainly caused by illegal vandalisation and bunkering of oil pipelines. Concerning this, Odalonu (2015) also observed that most of the time, illegal vandalisation and bunkering of petroleum resources are caused by the destructive activities of the youth, who are frustrated due to the neglecting attitude of government and oil manufacturing companies towards the demands of the local population. Corruption and violation of human rights lead to behaviours that further add to social and environmental challenges in regions (Aliyu and Ammani, 2011). In most cases, social vices adversely impact the production of land and water resources and cause an increase in oil spills in oil-producing countries.

The impact of petroleum businesses on the economy of Nigeria was also examined by Abdullahi et al. (2010), who utilised Nigeria's annual data from 2000-2009 and applied a linear regression approach to identify a direct impact of petroleum on the economy of Nigeria. However, the mismanagement of petroleum resources has caused financial challenges due to the improper accessibility of rich resources in Nigeria (Aliyu and Ammani, 2011). Considering the current situation in NDR, there is a need to instant improvement in economic initiatives for the local population and identify strategies to reduce the environmental impacts of MNOCs. The policymakers and relevant authorities should consider ways to improve the quality of marine life, increase the sustainability of water resources, and save local agricultural land and farming resources to ensure the economic growth of the region. The latest quantitative studies on the impact of oil spills on the fish market for different regions, particularly in the Arctic, divided fish into two unique ways; Nevalainen et al. (2017) defined the pelagic fish as a unique type of fish in terms of the way this type is impacted by oil spills in its natural habitat. Nevalainen et al. (2017) identified that pelagic fish eggs can directly contact oil spills. However, oil spills can hardly reach demersal fish and spill into the depths of the seabed.

The literature review in the present study will explore the influence of environmental degradation caused by the ineffective options of MNOCs in managing the extraction process of natural resources, especially oil and gas, in NDR. The analysis of oil manufacturing companies like Nigeria and other countries that have faced economic and environmental challenges with extractive sectors will contribute to improved

awareness of the promotion of sustainable practices for improved environmental wellbeing (Orogun, 2010). The present research will provide insights into the interactions of the local population of NDR with MNOs and their response to economic and environmental decline in the region. The result will potentially assist policymakers in MOCs and government authorities to obtain the required information to shape the decision-making process and prepare a strategy to improve and efficiently manage ecological conditions and integrate effective corporate social practices. The study results will expose the social and economic conditions that influence NDR and also contribute to the literature by providing details of different aspects of environmental sustainability.

1.9. Scope of Work

The research primarily emphasises environment control in the oil and gas businesses operating in upstream areas, such as production and exploration in NDR, with a brief analysis of downstream procedures that comprise distribution, refining, manufacturing, transportation and marketing operations of businesses. It must be noted that the present research will not interfere with the corporate and national politics of the oil and gas sector in NDR and overall Nigeria. The study is primarily focused on the evaluation of environmental and social issues associated with upstream operations of NDR and the resolution of identified issues in this area. The hallmark of the present research is to identify sustainable strategies to resolve environmental and social problems in NDR.

1.10. Gap in Literature

The NDR of Nigeria is facing numerous issues, including riots, kidnapping, restiveness and several other problems that have led to the formation of protesting groups in the region. Some groups are stealing oil tanks and kidnapping workers from oil and gas companies to obtain some sort of financial aid for their families (Odemene, 2013). Even though Odemene (2013) examined current issues in NDR, the author did not discuss the impact of effective utilisation of CSR strategies by oil and gas companies to resolve these issues.

Some authors like Tobor (2014) examined leading tribes like Urhobo in NDR and also discussed the Niger Delta amnesty scheme. Tobor (2014) focuses on widespread problems in the region and potential solutions that can improve the condition of these tribes in NDR. However, Tobor (2014) did not mention the influence of local cultural and population preferences on the existing problems in the region. However, Tobor (2014) did discuss the potential role of effective CSR practices in reducing conflicts and crises in NDR. A gap in the literature has been identified in the assessment of the perception of landlords about

the impact of ineffective CSR practices of MNOC's managers on the sustainability and maintenance of agricultural land in NDR. A detailed analysis of the impact of effective CSR practices has not been provided by researchers in the context of oil and gas operations in NDR.

A literature gap is identified in the assessment of a deeper understanding of effective CSR strategies in NDR. The present study will fill this gap by examining the impact of CSR practices on the satisfaction of landlords in NDR. By obtaining this understanding, the research will provide a more reasonable approach that can be accepted by landlords in NDR to understand CSR and its influence on the land. The research will also evaluate ways to eliminate knowledge gaps and potentially help landlords to accurately perceive CSR and identify the ineffective and harmful impact of corporative activities on the region. In addition to this, some insights on facilitating a better understanding in the minds of the local population will be provided to encourage a revolution in NDR about the unsustainable operations of MOCs in the region.

1.11. Significance of the Study

A literature gap is identified in the myriad economic and psychological impacts of environmental issues caused by oil production in NDR (Obi, 2010). According to Agwu (2013) and Emeseh (2009), studies on sustainability in NDR have not described diverse perspectives of the impact of environmental degradation, considering potential factors that impact the environment at different levels in NDR. For instance, Mustapha (2010) mentioned that corruption in Nigeria caused by the past and present ruling parties, civilian authorities and military had triggered this decline in social and environmental well-being in NDI. Even though such studies have highlighted different factors that are leading to a decline in the long-term stability of NDR, the studies have not explored the diversity of conditions that are associated with declining environmental conditions in NDR (Kew and Phillips, 2013; Agwu, 2013).

Oshwofasa et al. (2012) studied the role of oil authorities that are appointed by the regional government in the existing conditions of the NDR. Oshwofasa et al. (2012) applied a qualitative method and used secondary data sources in their study to identify how government-appointed authorities in the oil and gas sector are contributing to the economic well-being of NDR. However, Oshwofasa et al. (2012) only highlight ineffectual government and corruption as the leading factors without mentioning underlying social and economic factors associated with the crisis in NDR. In this context, Orogun (2012) mentioned that for the past thirty years, the Nigerian government has struggled to come up with solutions to

increasing violence in the region and increasing the production of oil and associated revenues in the sector.

The focus on increasing financial outcomes is derailing sustainability initiatives in host regions. The results have largely contributed to business practices that influence sustainability in NDR by reviewing the CSR initiatives of a single firm and addressing its impacts on the region. The literature on the sustainability initiatives of MNOCs in NDR has focused on economic gains, business reputation, environmental degradation, sustainability disasters and poverty in the region. Even though these studies make unique contributions to the literature, a gap is still present in the assessment of the role of MNOCs' degradation of land and water and the overall sustainability of NDR. In conclusion, the adoption of sustainability recommendations and integration of these suggestions into organisational plans can improve corporation activities in NDR by displaying improved commitment of businesses to enhancing life quality in the region. The results of the present study will contribute to business sustainability in Nigeria by encouraging change, installing a growth mindset and examining the interdependence of society and business elements in NDR. According to Gharajedaghi (2011) and Hart and Milstein (2003), the local population suffers due to individual organisational decisions; there is a need to rethink business choices and adapt changes in the requirements of the population to encourage regional sustainability.

1.12. Research Major Areas of Contributions

The primary areas of contribution are:

The research will contribute to a reduction in gas flaring and venting by examining associated natural gas in the production of petroleum. The natural gas can be utilised through gas turbines for electricity production and heating. It can also contribute to the sustainable growth of the industry.

The research will contribute to waste reduction and its environmental impacts by analysing manufacturing and explorational waste and dumping processes of oil and gas companies.

The research will contribute to a significant reduction in the violation of human rights and footprint pollution. The research will examine the impact of restoring sites after decommissioning on the abuse of human rights and footprint pollution. The findings will help oil corporations implement site restoration as a pilot scheme in the production and exploration process from the designing phase of new projects.

The research will contribute to an improved understanding of gaps in existing laws in Nigeria and the potential influence of improvement in the development and implementation of these laws on social and environmental structure. The research will analyse environmental laws to identify the influence of government involvement in unsustainable and unethical operations of oil and gas companies.

The research will contribute to an improved understanding of environmental degradation caused by social vices such as militancy and sabotage fuelled by federalised mineral rights. It is also because of the dependence of Nigeria on oil and gas sources for earnings and economic stability. However, the research will examine measures that can be adopted by the Nigerian government to support landlords in the region to promote sustainable development.

The research contributions will be relevant to different groups, including social scientists, energy experts and policymakers.

1.13. Theoretical Framework

The theoretical framework of this research is developed to identify literature gaps in the operations and negotiations of companies. The stakeholder approach is applied as a base for this research. According to Freeman (1994), the stakeholder theory is a competing approach where organisational managers are considered to be the stockholder agents. The application of this approach to the business industry enables corporate leaders to identify stakeholders who guide organisational operations and stakeholder groups who must be considered in the CSR operations of the company. According to the stakeholder theory, effective management depends on balanced attention and consideration of the interests of different stakeholders (Freeman, 1994). A stakeholder is a person or group that can be directly or indirectly influenced by organisational operations (Schiller et al., 2013). These individuals or groups have some claim or stake in the organisation (Hasnas, 2013). The stakeholder theory has highlighted managerial responsibilities that provide long term benefits to the organisation along with considering the interests of its stakeholders (Dhir, 2007). Even though various researchers have defined stakeholders in different terms and definitions, in the present research, the term stakeholder is used to define an individual or group have claims or obtains ownership rights in the short and long-term activities of an organisation (Paki and Ebiefa, 2011). Organisations fulfil the demands of stakeholders as a strategic investment for their growth (Paki and Ebiefa, 2011). According to Ventriss and Kuentzel (2005), the involvement of the general public in decisions related to environmental well-being will contribute to improved communication and representation of the public, which will contribute to the development of a healthier and sustainable society.

The NDR crisis has become a public concern. O'Donnel (2007) has described three axes of conflict. These axes, including ecological conflicts, nation-state, and transformation business, share the responsibilities of a polarised world. Hence, a recurrent violence cycle against MNOCs in NDR indicates the failure of oil companies to identify the importance of stakeholder value to their business.

MNOCs in NDR have strategically engendered the development of new social campaigns and movements by erasing the concept of stakeholder management in corporate judgements (Omojimate, 2012). In this context, O'Donnell (2007) mentioned that profit maximization is used as a tool to manage the dimensions of capitalist growth, which results in an overall spill by these elements on areas that are no longer associated with material development. Odoemene (2011) further elaborates on this view and suggests that various consequences of environmental degradation are observed in the social structure of NDR that range from increased violence, poverty, underdevelopment, crime, deconstruction of the social and moral fabric of the community and despondency. The traditional ways of living are threatened when power and money take hold of society and penetrate cultural traditions, such as the norms and values of people, by defining ways of life, such as the terms of resource consumption (O'Donnell, 2007). The concept of citizen participation and social values are the two key factors of a social system that assist in understanding controversies that emerge in the local population. Social values are used to understand internal conflicts, whereas citizen participation is used as a way to divide different levels of interests in a pluralistic setup (Ventriss and Keuntzel, 2005). A major reason for the crisis in the material production areas is the increasing involvement of businesses in threatening the sustainability of the natural environment (O'Donnell, 2007).

1.14. Structure of the Study

The present study will address the social and environmental impacts of the oil and gas exploration process in NDR Nigeria. The research will incorporate a detailed analysis of industrial literature and peer-reviewed journal articles including the official details released by the government of Nigeria. There will be a total of seven chapters in this dissertation.

1. The first chapter provides a general idea of what the research will be about and what inspired the researcher to conduct the research. The chapter contains different sections, including research background, questions and objectives, expectations, significance and methodologies strategies.
2. The second chapter is based on a brief overview of Nigeria and NDR's demography.
3. The third chapter provides an overview of previous studies focused on the process of oil and gas manufacturing and the impact of this process on the social and environmental health of NDR. This chapter will also incorporate studies that provide remedies to restore environmental health.
4. The fourth chapter will examine issues in sustainable development and stakeholder engagement in Niger Delta Region.

5. The fifth chapter will prepare the methodology for the research by applying a combination of research strategies. This chapter will provide a generate idea of methods that will be used to collect and analyse data in the study.
6. The sixth chapter is focused on the analysis of results obtained through qualitative and quantitative analysis. It also includes the analysis of data to ensure the validity and consistency of the applied procedures.
7. The last chapter will highlight the contributions of the present study to the exploration of oil and gas resources. This section will highlight gaps in the study and provide recommendations to future researchers to explore the current topic in more detail.

1.15. Conclusion

The first chapter has set the foundation of the study. The research is focused on evaluating the social consequences of oil and gas production and exploration in NDR. This section has discussed the research motivation, aims and objectives and research questions. A brief background is also provided to highlight factors and studies that motivated the researcher to explore the research topic.

2. Chapter Two: A Brief Description of Nigeria and Demography of the Study Area (Niger Delta Region)

Nigeria has the highest percentage of black population in the world. It is local in the African continent and endowed with rich natural resources. Nigeria is the 5th leading export of crude oil to America and 6th largest manufacturer of crude oil in the OPEC region. The Nigerian economy depends on oil exports and sales for its financial stability. However, poverty has taken a form of an endemic in Nigeria despite the present of rich natural resources in the region. As per the World Bank report, a large percentage of the Nigerian population survives on a maximum of one dollar a day. Nigeria was ruled by the military authority for more than 30 years before a democratic ruling was passed in the region in 1999. This chapter will shed light on key facts about oil exploration and the economic state of Nigeria.

2.1. Introduction

Nigeria has relied on the production, exploitation and exploration of crude oil as its primary source of income for more than fifty years (Sam and Zabbey, 2018). This process accounts for more than 90% of FEE (foreign exchange earnings) in the region (Tukur Umar and Hajj Othman, 2017). Nigeria is the 6th leading provided of crude oil, with NDR accounting for more than 37.4 billion crude oil barrels and serving as one of the richest ecosystems in the world in terms of the availability of rich natural resources (Albert et al., 2018; Chikere and Fenibos, 2018; Atubi, 2015). The NDR in Nigeria has one of the biggest mangrove forests that provides salt and freshwater swamps and blooms with a wide range of plants and unique animal species (Anejionu et al., 2015; Kuenzer et al., 2014). However, NDR is also among the regions that have faced extreme environmental degradation due to the unsustainability activities of crude oil companies (Tukur and Hajj, 2017; Sam and Zabbey, 2018). The environmental degradation in NDR is also an attitude to the operations of unofficial refiners working in the oil industry, who are also among the major contributors of pollution in the region (Dominic, 2016; Gundlach, 2018).

Oil and gas companies release petroleum substances into water and land, which destroys the natural ecosystem and becomes toxic for marine life (Ojewumi et al., 2018; Lopes et al., 2009; Eneh, 2011). The coastal environmental and agricultural land of Nigeria has witnessed massive destruction since the identification of crude oil sources in the region (Sam and Zabbey, 2018). The petroleum companies have released more than 13 million tonnes of toxic substances into the environment and caused the degradation of natural resources in the region (Sam and Zabbey, 2018). Anthropogenic and natural resources both contribute to this extent to pollution in a region (Mahjoubi *et al.*, 2018; Aislabie *et al.*, 2004; Marinescu et al., 2011; Brakstad *et al.*, 2017). Oil spills caused by accidental leaks, mishandling

of products, and pipeline ruptures contaminate the water and soil and affect the natural environment sites (Ojewumi *et al.*, 2017).

The unethical and unsustainable activities of oil and gas companies' extent to wasting nonstandard refined material without any precautions into rivers, which causes significant harm to marine life and surrounding agricultural land (Asimiea and Omokhua, 2013). Kuenzer *et al.* (2014) declared in their study that hydrocarbons are the primary threat to environmental stability and human health in NDR. In this context, Yabrade and Tanee (2016) also mentioned that the crude oil refining process in NDR is contributing to an increasing percentage of toxicity levels in the land, which is altering natural chemical properties and can further lead to the devastation of saltwater ecosystems if authorities do not take timely actions to prevent climate degradation in the region.

A proper understanding of community requirements and environmental health must be the first priority of corporations in Nigeria. In this context, ICSU (2015) and Hasan *et al.* (2019) have mentioned that the UN sustainability development goals (UNSDG) must be incorporated by businesses to support the environmental well-being of the region. The UNSDG 14 and 15 can be implemented to efficiently conserve natural resources including marine, ocean and sea and protect, promote and restore the natural ecosystem in the region (ICSU, 2015). The present research aims to identify the impact of local oil refineries in NDR on the hosting communities and recommend measures to minimise the negative impact of these refineries on the natural environment of the region.

2.2. A Brief Overview of the Federal Republic of Nigeria

The climate conditions of Nigeria vary from one region to another. For example, the country has a tropical climate in the centre and experiences more arid conditions in the North and equatorial conditions in the South. Nigeria falls between 4oN and 14oN and 30e AND 15oE in West Africa (figure 2). Nigeria's north side is connected with the Republics of Niger and Chad; the West side connects to the Republic of Benin, the East is associated with the Republic of Cameroon, and the South connects with the Atlantic Ocean (Dublin Green *et al.*, 1999). The total area of Nigeria is around 923,768 km², which comprises 13000 km² of water and 910 768 km² of land. It is also among the most populous regions in Africa, with a population of more than 216.7 million (Akinyemi and Isiuqo-Abanihe, 2014). Nigeria has the highest percentage of population in Africa and 7th largest population percentage in the World (CIA World Factbook, 2018). The urbanisation rate in Nigeria is around 4.3%, which shows that more than 50% of Nigerians are urban dwellers (CID World Factbook, 2018). There are more than 250 ethnic groups in Nigeria, with more than

500 languages spoken by a diverse population of the region (CID World Factbook, 2018). The customs, traditions and beliefs also depict diversity in the values and preferences of a diverse population of Nigeria. Nigeria's population has increased rapidly in the past fifty years due to increasing birth rates in the region. The birth rate was recorded at its highest in the 1980s after child mortality rates dropped rapidly in the region and slowed slowly with a slight decline in the birth rate in the region. As per the statistics of 2017, the total population of Nigeria in 2016 was recorded at 185,989,640 in comparison to the figures of the 1950s, which were around only 37,860,000. The percentage of children between the ages of 15 was around 44% in 2010, 53.2% between the ages of 15 and 65 and 2.7% for people aged 65 or above. The population momentum has increased with 3.2% growth, which leads to a potentially rapid increase in the population (LeVan and Ukata, 2018). The cultural preferences and lower political support in Nigeria have discouraged birth control programs because these programs are considered controversial and unacceptable in the region. An increase in healthcare programs and educational awareness can potentially enable family planning and reduce the increasing percentage of population growth in Nigeria.

According to Eze Duruiheoma (National Population Commission Chairman of Nigeria), Nigeria is the most populated region in Africa and 7th most populated country in the world, with a population of more than 198 million. If the population continues to increase at this pace, Nigeria will have the third-highest population in the world by 2050. In the past five decades, the urban population of Nigeria has increased rapidly, with a growth rate of 6.5% annually, without any significant improvement in restructuring and social amenities (NPC, 2018). The population of Nigeria has grown rapidly from 1967-2017, increasing from 17.3% to 49.9% (NPC, 2018).

Nigeria has a variety of rich mineral resources that include metallic minerals such as gold, zinc, iron, tin, lead and columbite; fossil fuels such as coal, lignite, natural gas and petroleum; non-metallic minerals like clay, limestone, shale and gravel, radioactive minerals like zircon, uranium and monazite and arable land.

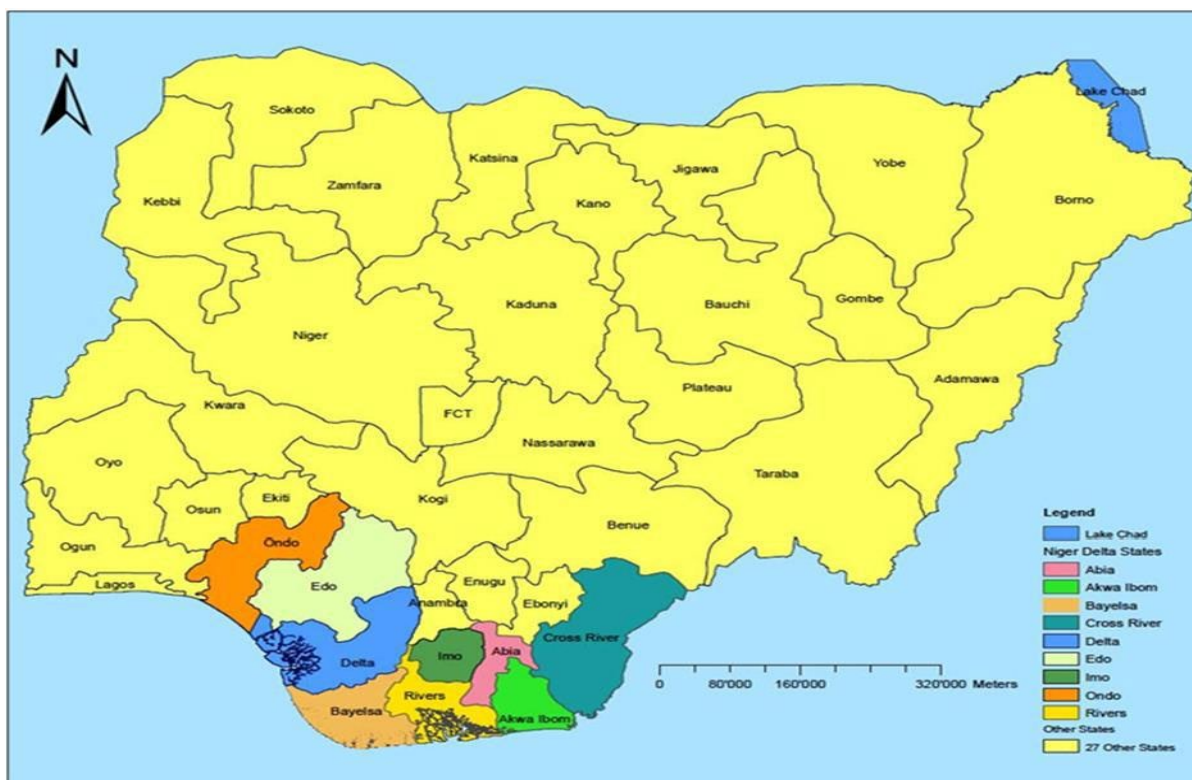


Figure 1: Geographic Map of Nigeria. (Source: Ite et al. 2013)

2.3. The Study Area (Niger Delta Region)

The NDR is the most inhabited area in Nigeria, located in South-South Nigeria on the West Coast of Africa (Nazmum-Sakib, 2021; UNCEP, 2011). NDR is located on the tip of the Guinea Gulf on the Atlantic Ocean. The NDR is a low-lying area where the Niger River is divided into different drains and tributaries of Guinea Gulf (Akpogheli et al., 2017; Ogeleka et al., 2017). The NDR spreads on the coastline of Benin River's west bank to the Imo River's east bank (Akpogheli et al., 2021). The NDR comprises nine administrative regions with various ethnicities (Odalonu, 2016). The ethnic groups in NDR include Akwa, Edo, Rivers, Ibom, Onbo, Cross River and Imo. Figure three shows these states in Nigeria that are significantly contributing to the Nigerian economy through oil production (Sanchez et al., 2021; Wizor and Wali, 2020; Bashir, 2021; Lindén and Palsson, 2013). The people of NDR mainly use fishing and farming through a creek, which mainly serves fishermen and provides a travelling route to neighbouring communities. Basically, NDR is a huge arcuate delta, with the largest west land in Africa and some huge reserves of freshwater, coastal islands, lowland forests and mangrove swamps (Edino et al., 2010; Nwaejije et al., 2017). Around 250 dialects can be found in NDR, with 40 ethnic communities comprising a total population of approximately 31 million people divided into different groups, including Igbo, Ijaw, Annang, Efik and Ibibio (Jike, 2004 and NPC,

2006). There is a faunal zone in NDR, which is a region with abundant hydrocarbon and Belta basins (Akpogheli et al., 2021). Faunal zone is the wealthiest area of Nigeria due to the availability of various natural resources and hydrocarbon reserves (Sanchez et al., 2021).

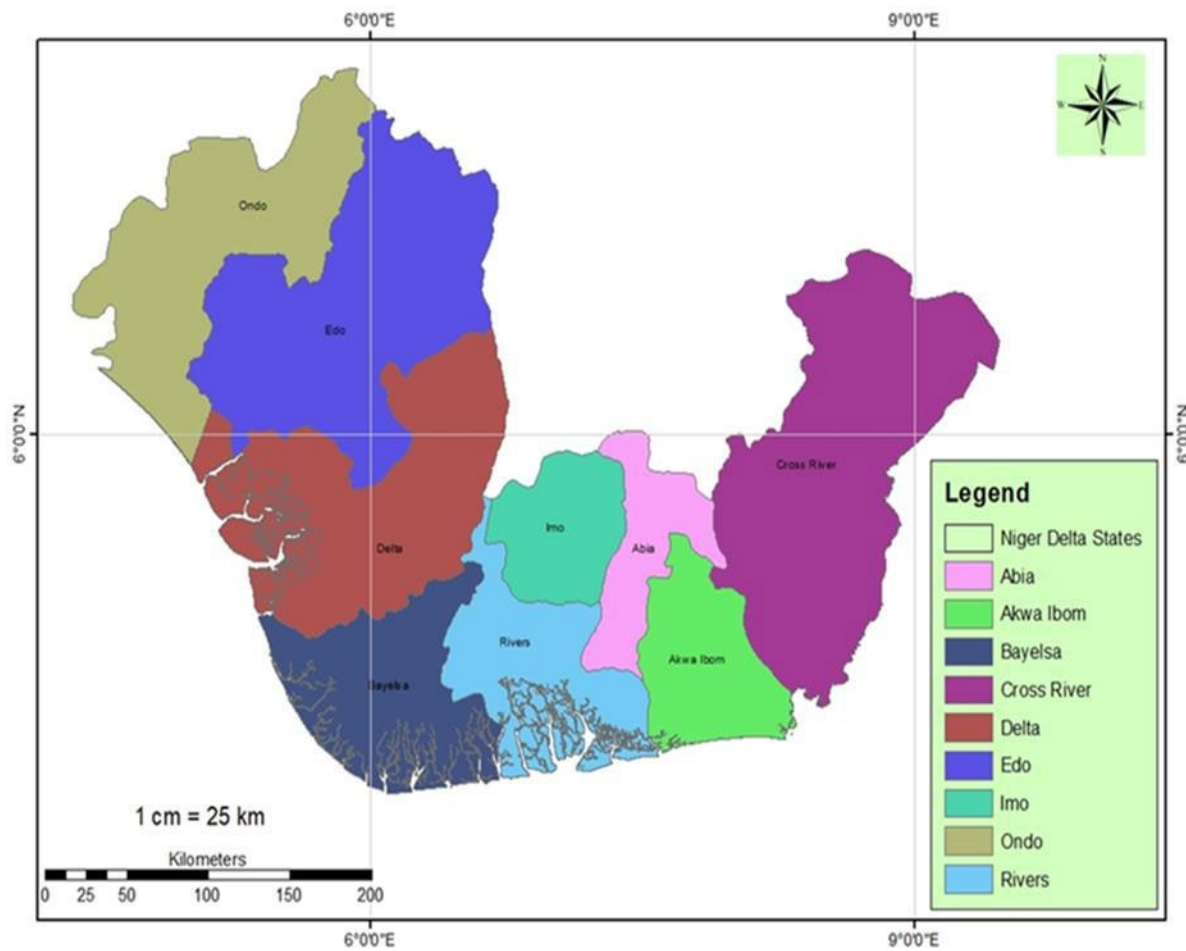


Figure 2: NDR maps of nine states. Sourced by Department of Geography, Minna, Nigeria (2022)

Most of the coastal waters and energy resources of Nigeria are located in the NDR of Nigeria (Bashir, 2021; Lindén and Palsson, 2013). Nigeria was the 5th leading export of liquefied natural gas in 2018. The crude oil in Nigeria is called 'sweet oil' because of the presence of limited sulphur content in the oil. Due to the limited sulphur percentage, the oil creates a pleasant scent and a sweet taste as compared to oils with large sulphur percentages. The oil and gas companies and the Nigerian government have drilled more than 1182 wells in NDR and discovered around 400 oilfields of different sizes and quantities in the region. There exists a huge network of more than 900 active oil wells and petroleum infrastructure in NDR (Nazmuz-Sakib, 2021). NDR is the most important and significant region of Africa because of its relevance to the high numbers of oil exports of the region. Nigeria is also an investment attraction for a large

percentage of businesses because of the availability of rich natural resources. Nigeria has a rich historical and cultural history with diverse natural resources, which is a key factor behind the economic development of the country (Akpogheli et al., 2021).

The oilfields in NDR have been used by companies for several decades now. Despite the cultural and socioeconomic different, all states of NDR are affected by the petroleum extraction activities of oil and gas companies with massive and detrimental consequences for the local population (Yakubu, 2017; Agbaji et al., 2020). The process of crude oil discovery and manufacturing is associated with drastic adverse impacts on host communities that have been ignored by MNOCs and the government in Nigeria (Nazmum-Sakib, 2021). However, the MNOCs have only obtained financial benefits, whereas the local population has faced increased social and environmental issues due to unsustainable business activities in the region (Aniefiok et al., 2018). The first oil field was discovered in 1956 in Oloibiri in NDR. Since then, the petroleum issues and their environmental impacts have been a subject of consistent friction between host communities and oil corporations because many business projects have overlooked the environmental and social impacts of their activities with sole emphasis on financial gains and business expansion in the region (Ekpo et al., 2018). It can be assumed that authorities have only focused on the exploration of petroleum reserves in the region and ignored the social, environmental and even economic requirements of host communities who have faced the consequences of business activities on their sustainability and well-being (NDDC, 2014).

The NDR residents engage in only basic activities associated with sustaining agriculture because of the presence of rich natural reserves such as the adjacent Atlantic Ocean, ponds and water resources that provide favourable conditions for fishing in the region (Ofoegbu et al., 2014). Not only this, over 70% of locals in NDR solely rely on natural resources to meet basic necessities (Osugwu and Olaifa, 2018; Ebegbulem et al., 2013).

2.4. Target Population for the Study

Population is a group of individuals have share common traits and characteristics (Fraenkel and Warrern, 2002). In the research context, the population comprises people, events or subjects with similar interests who are relevant to the research. The population for the present research comprises the local community, opinion leaders, policymakers, residents, industry experts, NGO members, journalists and academicians in NDR of Nigeria. The population group will be selected through the random sampling approach . The research is conducted in the Bodo community, which is an Ogoni society based in the Gokana Local Government regions of the Rivers State (see Figure 3). The Bodo community comprises a population of

more than 69,000 locals, which makes it the most indigenous community in the region (Maconachie and Gavin, 2013). The Bodo community is local in the southern coastal side of Gokana Kingdom, based in the east of NDR in Ogoniland, Nigeria. Bodo is located seaward to the east side by Andoni, on the southern end by the Atlantic Ocean and Bonny and west by Boloy (Tanen, 2005; Piegbara and Kedei, 2003).

There are 35 villages in Bodo that are managed by the central chief's council led by an apex monarch king. The oil production and discovery operations have led to increased oil pollution and environmental challenges in NDR. The locals of NDR are facing various issues caused by the activities of oil and gas businesses. These problems increase water pollution, sea life damage, and degradation of agricultural land in the region (Osugwu and Olaifa, 2018). The oil and gas corporates ignore the requirements of the region, which is visibly displayed in their activities. For example, liquid petroleum is released into the ecosystem due to oil spills. These spills can affect the natural land or sea or both sources crucial for the sustainable life and well-being of the local population (Ifelebuegu et al., 2017). The release of toxic substances and oil spills pollute marine health and add barriers to the physical and psychological growth of local residents by destroying natural resources and ignoring the dependence of residents on these resources for their survival and financial growth (Adati, 2012; Pete et al., 2021).

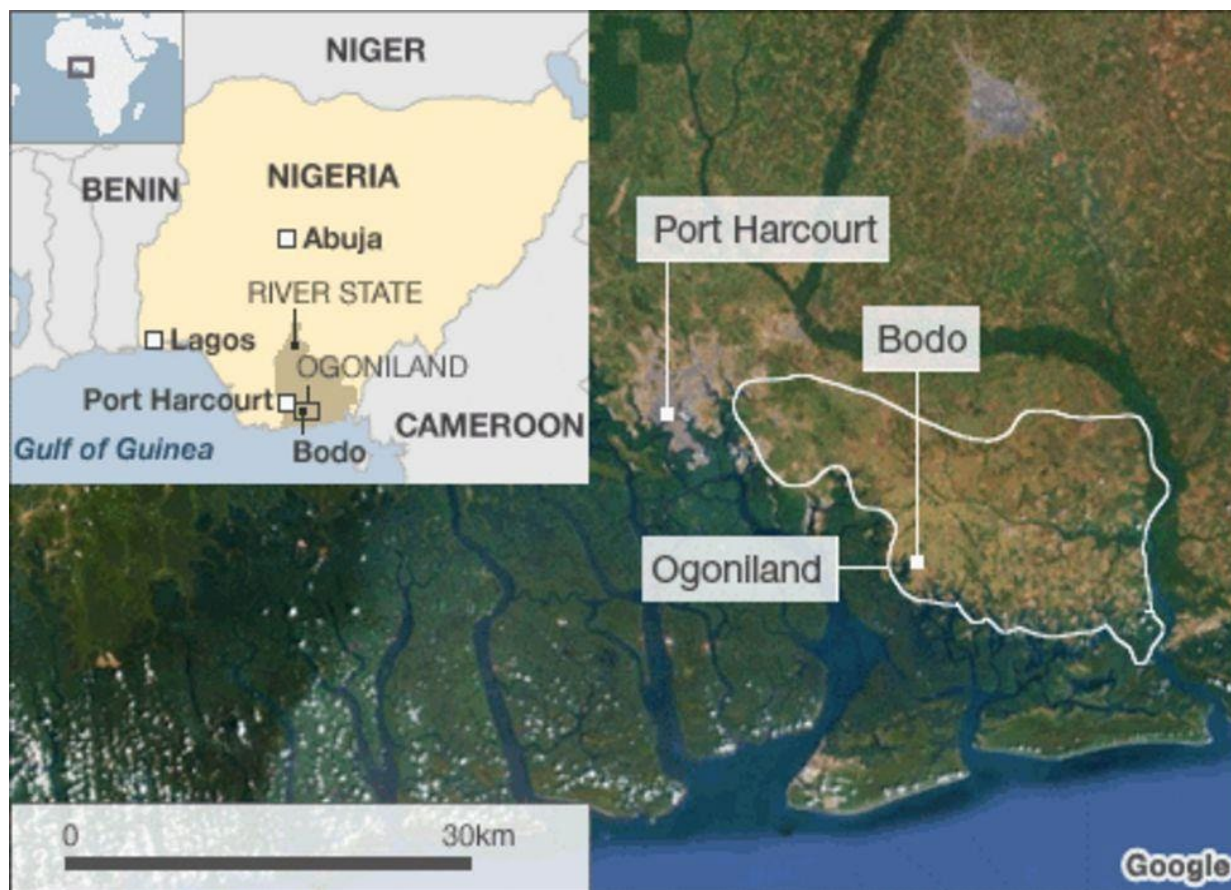


Figure 3: The Bodo region. Source: BBC News, (2014)

The financial, environmental and social issues of the local inhabitants of NDR have increased due to the activities of oil and gas corporations in the region. The economic levels of local residents are destroyed because of water pollution, the decline in marine life health and the degradation of agricultural land because of the dependence of the local population on these resources for their income and survival (Kingston, 2011). Chukwuemeka et al. (2011) examined the influence of foreign investment and social conflicts in the region and identified that environmental degradation has concerned the local residents more than economic challenges in the region because of the immediate adverse impacts of environmental problems on their health and well-being. The locals of NDR are of the view that environmental destruction is not compensable because financial compensation cannot mitigate the loss to the natural environment and resources in the region (Chukwuemeka et al., 2011). The environmental degradation and challenges in NDR are a global concern, which urges global authorities to take measures to address unethical activities of oil and gas corporations and the impact of these activities on the natural climate of NDR (Obi, 2010).

The present study will involve Ogoniland indigenes as the key participants of the research. The Ogoni indigenes are select because these people are directly affected by social and environmental challenges in NDR. These individuals are relevant to the study because of their direct involvement and association with the adverse impacts of oil and gas corporations in NDR, which is also a key concern of the present research. The involvement of a large sample group will provide a better understanding of the preferences and local population of Ogoni about the activities of oil and gas corporations in the region. The selection of a population group is important for accurately answering the research question (Chenail, 2011). The size of the research group will represent the diversity in age, income, gender, education and social status of different communities in the region. The random sampling approach will enable the research to provide a detailed understanding of the correlation between the procedures, experiences and opinions associated with research objectives (Eshlaghy et al., 2011).

2.5. Rationale to Gather Data from Expert and Public

In this research, a detailed interview of eighteen professionals in NDR will be provided to explore the experiences and perceptions of experts about oil and gas activities in the region. These experts will be policymakers and workers in the oil and gas industry. The survey method is also used by distributing 260 questionnaires across the Bodo society to understand the perception of the general public about authorities in the Bodo region. The interview method is applied to further expand on the results of the survey. The Federal Government Agency and MNOC's corporate affairs department were also contacted to access research participants and explain research requirements and importance to the selected population. In this context, Peticca-Harris, de Gama, and Elias (2016) have stated that the study introduction must include an explanation of research benefits to research participants, the corporate and relevant markets. Hence, in the present research, written letters were submitted to the companies of the selected research participants, and further details were also provided in person to the participants to resolve their concerns about the research.

The research will contribute to the literature by exploring and addressing driving factors that influence the perception of community members and industry experts about the threats of oil and gas manufacturing activities. Risk management relies on the perception of experts and the general public to generate the desired outcomes. The identification of diverse opinions and perceptions in the social community of Bodo was important to understand how the oil and gas manufacturing activities were viewed by the target audience. The problems of the general public and policymakers must be addressed by oil and gas companies to minimise the adverse impacts of their activities on society.

The present research will further improve knowledge of public views and expert opinions along with a consensus on the threats of oil and gas discovery activities in the region. The inclusion of experts was important in the research because of the complex scientific procedures involved in the exploration of oil and gas resources in Bodo.

2.6. Demography of the Study Area (Niger Delta region)

2.6.1. The geography

The geography of NDR shows the presence of sedimentary basic and deposits comprising mainly silt, shale, peat, clay and sand in the delta waters. There exists a network of rivers, streams and creeks which makes the area swampier and flatter. The biological diversity adds to the geographical value of BDR with five ecological zones that include the coastal sandy barriers ridge zone, freshwater swamp, montane zone, lowland rainforest and mangrove swamp (NDDC, 2005; UNDP, 2006).



Figure 4 NDR map in the southern Nigeria (Ebhuoma et al., 2020).

2.6.2. The People

Cultural and ethnic diversity makes NDR a heterogeneous region. There are five main cultural and linguistic groups that include Edoid, Igboid, Delta Cross, Ijoid and Yoruboid. Each of these groups is further divided into several sub-groups. The Ijoid are the most complex group linguistically because of their long settlement history in the region. Ijoid has numerous clans with each group having some unique cultural and linguistic pattern. In some cases, villages belonging to the same clan have different local languages.

The Ijoid group nearly occupies the whole Bayelsa state virtually and it is also found in Delta, Ondo states, Akwa Ibom, Rivers and Edo.

The Edoid community mainly comprises the Edo of Edo region, Apie-Atissa and Engenni of Bayelsa state and Degema, which is found in the rivers state. Various subgroups are identified within these groups, with several subgroups having their own unique identity. The Delta Cross includes Obolo/Andoni, Abua, Ogoni and Odual of the River and Oron, Ibeno and Ibibio of Akwa Ibom. Ibibio is the biggest group in all of these subgroups. It is also the most famous group, both locally and internationally, because of the region's agitation for autonomy and resource control.

Lastly, Igboid and Yoruboid are the two smallest communities in NDR despite being the biggest ethnic societies in Nigeria. Yoruboid's main groups include Ika, Itsekiri of Delta state and Ilaje. On the other hand, the primary Igboid groups include Obga, Ekpeye, Ikwere, Ndoni and Egbema ((Niger Delta HD report, 2006).

2.6.3. Education in Niger Delta Region

Education and awareness in the local population is a primary concern in the achievement of sustainable growth in Nigeria. The education scheme in Nigeria is not performing as per the requirements of the nation and at the current pace, the country may not even achieve educational growth even in the next few years. The Nigeria Education Ministry has mentioned that some areas of NDR fall into the category of EDLAS, which stands for Educationally Disadvantaged States in Nigeria. It also means that the region is reporting limited enrolments in tertiary institutes as compared to other areas of the country. The cause of less education in the NDR is largely attributed to a lack of interest in youngsters obtaining formal degrees and the financial inability of parents to enrol their children in tertiary institutes. However, educational patterns are changing in Nigeria over time due to the increasing investments in the oil and gas sector. The MNOCs are offering scholarships to students in deserving communities to help locals obtain higher education from universities.

The enrolment in primary schools increased from 6.7% to 93% from 1990 to 2001 before increasing to a significant percentage of 123% in 2003, as per the reports of Niger Delta HD (2006). The increasing school enrolment in Nigeria was observed after the implementation of the UBE (universal primary education) program by the government of Nigeria, which encouraged over and under aged children to register for primary education programs. The rate of primary six completion also increased to 83% in 2001 from 60%

in 1991 before reaching the highest percentage (94%) in 2003. However, an imbalance in the completion rate was observed between boys and girls, with the trend favouring the male gender more. The literacy rate in Nigeria was 70.7% IN 1991, which reduced to 64.1% in 1999 but raised to 76.4% in 2004 (Niger Delta HD Report,2006). It suggests that MDG goal two, which is associated with achieving a universal level of primary education, is being followed by the Nigerian authorities to promote a more educated and aware population in the region.

2.6.4. Climate

The climate in NDR is mostly equatorial (UNDP, 2006). A high humidity is observed in NDR as the region experiences a high percentage of rainfall on a yearly basis. Due to this, flooding has also become very common in the area.

2.6.5. Settlement Patterns

The settlement of locals in NDR has been influenced by inconsistent flood patterns (UNDP, 2006). In most areas, the settlements are very low, with less than even 1000 people. NDD Regional Mater Plan (2005) has shown 13,329 settlements in NDR, with around 94% having a population of not even 5000 people. Only 1% of the total settlements are considered by urban centers, considering the population size in these areas. The presence of scattered and remote settlements adds challenges to the promotion of sustainable human growth in the region (UNDP, 2006).

2.6.6. Occupations

Fishing and crop farming are the key professions in NDR. Around 44% of the local population relies on farming and fishing to meet their expenses. These two activities have also played a role in promoting sustainability and improving employment opportunities in the sector. However, the development and promotion of oil exploration activities have caused a significant decline in these activities. In urban areas, the informal industry is the primary employee and trade contributes to around 17% of employment in the area (NDDC, 2005). Concerning this, Francis et al. (2011) identified that NDR has become more suitable for youngsters who seek to operate in urban employment centers and legally favourable for those who seek to gain expertise in agriculture. Underemployment and unemployment have also become a concern in NDR, with more than 40% of youngsters facing this issue (Francis et al., 2011).

2.6.7. Infrastructure and Social Services

Even though NDR's poverty rate is comparatively better than the average poverty rate in Nigeria, the region is still deprived of social facilities and a reasonable status. The problems of NDR residents are

reflected in poor housing facilities such as mud-walled buildings with weak foundations (UNDP, 2006). The healthcare and education services in NDR are also deteriorating, with a significant shortage of qualified staff in both schools and hospitals. Experts believe that the Nigerian government has neglected the NDR and ignored the requirements of locals because they solely focused on financial and economic gains that could be obtained through the investments of oil and gas companies (UNDP, 2006). However, this ignorance has only added to social, economic and environmental challenges in the region.

2.7. Nigeria Oil Industry: An Overview

Oil exploration in Nigeria was started during the tenure of colonial rule. According to Udosen et al. (2009), the initiative was generated to meet the demand for natural gas, lubricants and oils to use combusting engines in the 19890s. This process is also associated with the Industrial Revolution in Great Britain in the 18th century, which led to the utilisation of small and heavy machinery for production purposes. During this period, the military requirement for ships was also increased as a consequence of World War I to increase protection for the islands (Collins, 2018). The military requirement emerged once the British government started exploring oil resources for industrial and military causes to improve their economic growth and increase the protection of the region. However, the process of discovering and producing crude oil in Nigeria was started in 1903 under the surveillance of the British Mineral Survey Corporation (Collins, 2018). These activities also led to the testing in Araromi (now known as Obdo state) for Tar Sand Deposits in 1908 by the Nigerian Bitumen Company (Udosen et al., 2009; Aniefiok et al., 2013). The British government discovered the 1st mineral oil ordinance in 1914, which also provided them with the complete authority to increase exploration activities in Nigeria and legally restrict the exploration activities of all non-British oil companies in the region (Collins, 2018). However, these initial efforts were later proven to be useless due to World War I, which happened in 1914 (Bodo, 2019). The side effects of the world war on oil exploration activities in Nigeria were reported in 1958 (Aniefiok et al., 2013).

In 1938, Shell obtained the independent ownership license to continue oil exploration activities in Nigeria (Aniefiok et al., 2013). At that time, SPDC (Shell Petroleum Development Company) was operating in association with the Iranian Oil Corporation later transformed into British Petroleum and Royal Dutch Shell (Udosen et al., 2009). Oil exploration activities were continued again in Nigeria, but the occurrence of the Second World War that continued from 1939 to 1945 led to the suspension of all oil discovering operations of SPDC. But the SPDC resumed oil discovering activities in Nigeria's NDR again in 1946. The SPDC invested more than \$30 million in 1956 in the oil fields of Afam and Olobiri in the NDR and created a record of the first petroleum commercial quantity (Bobo, 2019). Oil exploration and production activities

were started in 1958 by SPDC from the Oboibiri fields in the Rives State. At that time, SPDC was operating at the level of 5100 barriers a day and obtaining around 10,500 barrels over the years (Udosen et al., 2009). The activities of SPDC also led to the successful discovery of oil in other regions like Ogoniland's Bomu oil field. The Bomu oil field led to the recovery of around 0.311 BB (billions of barrels) of oil and 0.6.8 BB in total of oil equivalents, including natural gas, which made this oil field a treasure for the Nigerian government and SPD (Aniefiok et al., 2013). Mobil Producing (Nigeria) Ltd, which is a subsidiary of Mobil Oil Company, was already penetrating the Nigerian oil fields before the sole ownership of the company was dissolved by the British government. However, according to Aniefiok et al. (2013) mobile Producing Ltd also obtained the license to indulge in oil exploration activities in Nigeria and started operations in the same year and in June 1969, the company was implemented as the Mobil Producing Nigeria.

Nigeria prospered in 1960 with higher agricultural export earnings and a steady improvement in Naira against the dollar. However, the dependence on oil income has shifted the financial conditions in Nigeria since the oil exploration boom in 1970 in the region. The revenue and foreign exports of Nigeria have been shifted solely to crude oil, which has destroyed the natural resources and agricultural beauty of the region.

The petroleum industry of Nigeria is famous for the successful discovery of crude oil since the initiation of the first largest deposits of crude oil quantity at Oloibiri in the NDR in 1956, with an impressive manufacturing rate of 28.2 BB of crude oil. Nigeria has rich reserves of natural gas. As per the National Petroleum Commission of Nigeria, there are around 165 trillion scf (standard cubic feet) of natural gas reserves in the region, which includes 75.4 trillion scf of the resources of non-associated gas. Thus, Nigeria's NDR has around 606 oil fields, which include 355 onshore and the rest offshore fields. Nigeria is also holding a rich reserve of oil wells. The exploratory activities led to the discovery of oil wells outside the NDR, which include two oil wells in the Anambra region, one in the Benue and Edo state and 24 in the Chad Basin. However, the government has not initiated production from any of the discovered wells (NNPR, 2016). These oil wells have more than 22 different kinds of crude oil, including sweet and light oils.

2.8. Nigeria Oil Industry and Economy

The oil reserves in Nigeria were estimated to be around 4.636 million mtoe (metric tons of oil equivalent) of petroleum in the mid-2000s, accounting for approximately half of the resources in all of the low-income states in the world. The record of Nigerian oil reserves kept increasing, which led to Nigeria being ranked as the 6th largest export of oil in PPEC. In addition to this, the gas reserves in Nigeria also rose significantly

in 2013 from 1958 as the country reported an increase from 2260 billion cubic feet to 187 trillion cubic feet and obtained the 10th rank globally (Dosumu, 2013). An analysis of 1-year crude oil reserves shows the presence of around 37.2 BB of oil in Nigeria in 2012 (Iledare, 2013). The NNPC (Nigerian National Petroleum Corporation) predicted in 2018 that crude oil reserves in Nigeria will increase by 1 BB annually to fulfil the target of 40 BB by 2020.

Nigeria is relying on crude oil for approximately 90% of its total foreign exchange income and around 70% of government income (NNPC, 2016; Onwe, 2012; Adegbite, 2015). A comparison of the contribution of the petroleum industry to the national GDP of Nigeria with other OPEC countries showed a significantly lower contribution of the petroleum sector in Nigeria, with the industry contributing only 10% to Nigeria's GDP as compared to 50% of Kuwait, around 50% of Qatar, 30% of the UAE and 42% of Saudi Arabia (Agency Central Intelligence, nd). Nigeria is not obtaining the required financial benefits from oil resources because of a lack of operating refineries in the region. The absence of working refineries in Nigeria is also costing the company some extremely useful petroleum commodities through exports to other countries.

From 1960 to 2009, Nigeria reports a significant improvement in oil exports and shares of oil to the national gross domestic product (GDP). Nigeria reported a total of N23.1 million total oil exports in 1961, which further increased to the recorded number of N13,632.1 million in 1980. The global recession of the early 80s led to a decline in oil exports of N11,223.7 million in 1985. However, Nigeria's foreign income presented an improvement from 1990 to 2009, with recorded figures of N106,623.5 million initially that reached N8,543,261.2 million (Central Bank of Nigeria Statistical Bulletin, 2010). During the period of the oil boom, Nigeria's GDP percentage (excluding production oil costs) from 1970-2018 shows that the country's average income was around 12.51% during this period, with a maximum of 0% in 1970 and 38.55% in 1979. The World Bank findings showed that Nigeria's GDP was around 9.0253% in 2018 despite the presence of rich oil and natural gas reserves in the country.

Nigeria was recognised as the biggest producer of oil in OPEC because of the amount of oil exports and availability of natural oil reserves in the region until oil production in Libya surpassed Nigeria at the end of 2019. The disruptions of crude oil development in NDR, which is the richest oil reserve was attributed to this decline in the ranking of Nigeria. At the start of 2016, the NDAs (Niger Delta Avengers claimed several attacks on natural gas and oil reserves throughout the NDR. Even though the NDA is the most prominent attacking group, it is not the only group that is attacking natural reserves in NDR. However, Nigeria recorded 750,000 barrels on average a day in 2016 and reports the highest levels since the recorded numbers in 2009 despite continuous disruptions to oil production and exploration activities in the region.

The availability of massive oil reserves is a leading source of almost all government and state revenues in Nigeria. However, the revenue generated through these resources is not sufficient to meet the demands of the local population and sustain the economic strength of the country. The economy of Nigeria is mainly dominated by the usage of refined petroleum commodities that are imported into the region from the USA after American refineries transform crude oil into petroleum products. Around 30% of foreign exchange demand in Nigeria is through the imports of refined petroleum commodities, which threatens the economic stability of Nigeria. (Punch Newspaper, 2016).

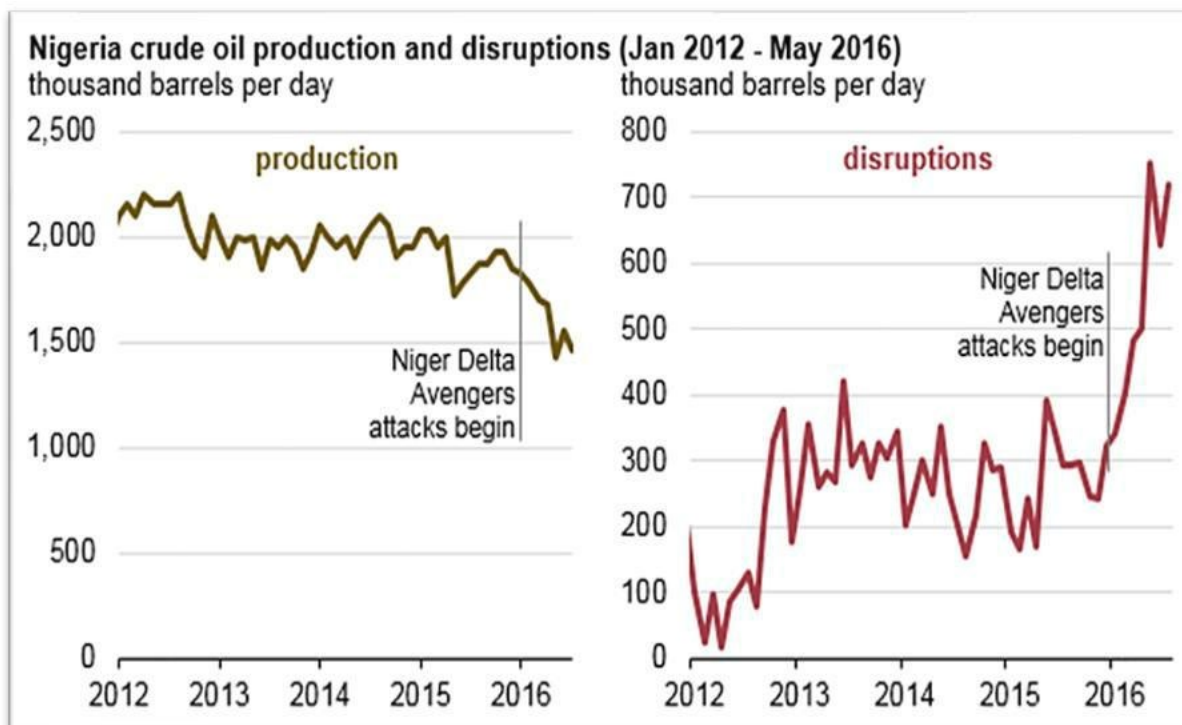


Figure 5 Disruptions in the production of natura crude oil in Nigeria (Short-term Energy Outlook, 2016)

Due to the dependence of Nigeria on the oil industry, the country reports a similar pattern of oil prices for more than a decade, which influences its expenditures and revenue figures. The Nigerian economy shrank recently after a hike in oil prices, and the GDP ranking of Nigeria also declined to the 26th number (World Bank, 2019) due to changes in market trends and ineffective managerial policies in the region.

Nigeria's economic conditions have only worsened in the past few years. The national GDP in 2016 contracted by 0.36% in the 1st quarter, 2.1% in the 2nd quarter and 2.2% in the 3rd quarter, which led to 18.5% record inflation at the end of 2016 as compared to 9.5% in 2015. The foreign exchange income of

Nigeria also declined from \$32 billion at the start of 2015 to \$25 billion at the end of 2016 (UN Economic Briefing, 2016).

The experience deficit of the federal government of Nigeria decreased with reported numbers of N1.2 trillion to N2.2 trillion from 2013 to 2016 respectively (Emachone, 2021). All these factors are adding to the achievement of fiscal sustainability due to the increasing dependence of Nigeria on oil reserves and ignorance towards other types of products that can help the economy to manage its currency value in comparison to the dollar and minimise inflation. Currently, the dependence on oil reserves as an income source has reduced the financial stability of more than 190 million Nigerians, forcing them to survive on a maximum of one dollar a day.

Poverty percentage is highest in NDR, which is the centre of attraction for MNOCs in Nigeria due to the availability of rich oil and gas resources. The locals of NDR are surviving in extremely challenging situations in terms of finances despite their hometown being a primary reason for the national income of the country. Not only this, the locals face challenges in accessing clean water, breathing in clean air and obtaining healthy organic food because of the adverse environmental impacts of oil and gas exploration activities in the region.

2.9. Oil and Gas Manufacturing and Discovery

Most of the petroleum manufacturing countries rely on oil exploitation and production as a key source of income. However, these activities result in major environmental consequences for hosting countries acting as 'slow poison' by following a gradual, slow and long process before their adverse impacts come to the surface and take decades to mitigate from the natural environment of the host country (Ordinioha and Brisibe, 2013). The oil exploration activities are mostly not appreciated as much despite their contribution to the economic growth of countries because of their direct adverse impacts on the natural environment and sustainability of hosting countries like Nigeria (WHO, 2003).

2.10. Challenges Associated with Oil and Gas Exploration and Production.

2.10.1. Gas Flaring

The discovery of crude oil resources in Nigeria led to the reliance of the country's economy on crude oil and natural gas production and exploration from agricultural activities. Till now, natural gas and crude oil are a primary source of foreign revenue and income generation in Nigeria (Mogborukor, 2014). Concerning this, Ohiman (2013) and Izah and Ohimain (2015) have mentioned that around 85-90% of the

earnings and exports in Nigeria are sourced through petroleum products. In addition to this, more than 80% of expenses that are used to finance national budget are obtained from the oil sources in the region (Ede and Edokpa, 2015). Nigeria is known for the availability of a variety of rich resources that are not just limited to the generation of crude oil. For example, Nigeria has rich mineral resources including natural gas, zinc limestone, arable land, niobium, lead, iron ore and lead (Ohimain et al., 2014). In addition to this, Nigeria is holding renewable energy resources like hydropower, solar and biomass (Izah and Ohimain, 2015).

More than half of the global energy sources rely on natural gas and crude oil (Ohimain, 2010). Globally, Nigeria is operating as the 7th and 12th leading manufacturer and export of crude oil (Ohimain, 2013). Report have shown that Nigeria can easily produce 35 to 36 BB of crude oil, 31 BB of oil equivalent of tar sand and 187 trillion standard cubic feet barrels of natural gas (Sambo, 2008; Ohimain, 2013).

Nigeria produces almost six billion standard cubic feet (SCF) of gas and 2-2.7 million SCF of crude oil per day (Fadare et al., 2009; Sambo, 2008; Ohimain, 2013). However, production rates are not the same across the country due to factors associated with militant activities in oil-rich regions, vandalism of pipelines, oil spills, sabotages and several other factors. The operations in the Militia have significantly impacted the production process in Nigeria. For example, the production of crude oil reduced significantly at the start of 2016 because of resource control and militancy.

Crude oil and natural gas are domicile in NDR including Edo, Bayelsa, Imo, Delta, Ondo, Cross Rivers states, Akwa Ibom, Abia and Rivers. The natural gas and crude oil resources are found in both offshore and onshore areas. These areas are responsible for the production of natural gas and crude oil. However, the process of producing these products is harmful to the natural environment. Crude oil spills adversely impact the soil, water quality and natural climate of the region (Aigberua et al., 2016b; Aigberua et al., 2017; Aigberua et al., 2016). The process of obtaining natural gas, in some cases, is associated with releasing volatile crude oil components in the external environment from where the natural gas is used while the extra components are flared in the environment through a combustion procedure. The NDR is known for gas flaring, a process that is associated with the release of various pollutant gases such as sulphur and nitrogen dioxide along with volatile components like xylene, hydrogen sulfide, dioxins, benzene and toluene and other particulates (Donwa et al., 2015; Adamu and Umar, 2013).

The adverse outcomes of gas flaring in NDR are observed by both humans and the overall environment. The process impacts physical setups such as buildings, monuments, roofing sheets and paints, influences

vegetation and psychological and pathological influence on the well-being of humans (Nriagu et al., 2016; Donwa et al., 2015; Amadi, 2014; Anomohanran, 2012; Iyorakpo and Odibikuma, 2015; Olukoya, 2015; Nkwocha and Pat-Mbano, 2010; Abua and Ashua, 2015; Ubani and Onyejekwe, 2013). Gas flaring is also a leading cause of discomfort and excessive heat (Anomohanran, 2012) and health impacts, such as skin issues, neurological, gastrointestinal, developmental and reproductive impacts, cancer and respiratory and haematological problems (Donwa et al., 2015). In addition to this, this process is also causing cardiovascular conditions such as ischaemic heart illness, atherosclerosis, hypertension along with renal issues and asthma, bronchitis and several types of cancers among people (Olukoya, 2015; Egwurugwu et al., 2013; Egwurugwu et al., 2013; Egwurugwu and Nwafor, 2013). These conditions are largely caused by the indirect impacts of gas flaring on generating acid rain that can also generate other impacts on human wellbeing. For example, acid rain caused by gas flaring can potentially impact aquatic species, wildlife, natural forests, and vegetation and promote lung diseases among humans. Not only this, but noise emanating caused by gas flaring also impacts the population residing within or closer to flaring locations.

2.10.2. Gas Flaring in Nigeria

The oil and gas manufacturing countries are responsible for adverse environmental impacts caused by gas flaring on a global scale. Nigeria is among the leading countries known for their oil producing activities. The region flares a significant percentage of natural gas in the environment by using horizontal and vertical stacks. Around 110B cubic meters of gas is flared annually into the natural environment (Ismail and Umukoro, 2012). Concerning this, Ogbe (2010) mentioned that Nigeria is contributing to 12.5% of gas flaring annually. The oil and gas manufacturing companies are turning a blind eye towards the global issue of gas flaring caused by their activities (Ohimain, 2013). The process of gas flaring is defined as the use of a combustion device to eliminate unwanted liquids and gases during industrial activities and operations, including chemical plants, oil-gas extraction, landfills, refineries and coal operations to manage unexpected over-pressuring. Concerning this, Soltanieh et al. (2016) mentioned that gas flaring is not discouraged in gas-producing companies because of various reasons, such as the availability of insufficient resources to transport, manage and obtain associated gas, limited gas volume and fluctuation because it increases the uncertainty and financial investment for designing facilities, gas impurities that demand expensive treatment strategies such as the use of highly acidic gas, operational and safety measures and the location of gas manufacturing site such as offshore locations which makes it difficult for companies to meet the demand gas. Some of the major components, such as noise, noxious gases and heat, which are extremely harmful to the environment, are released by gas flaring.

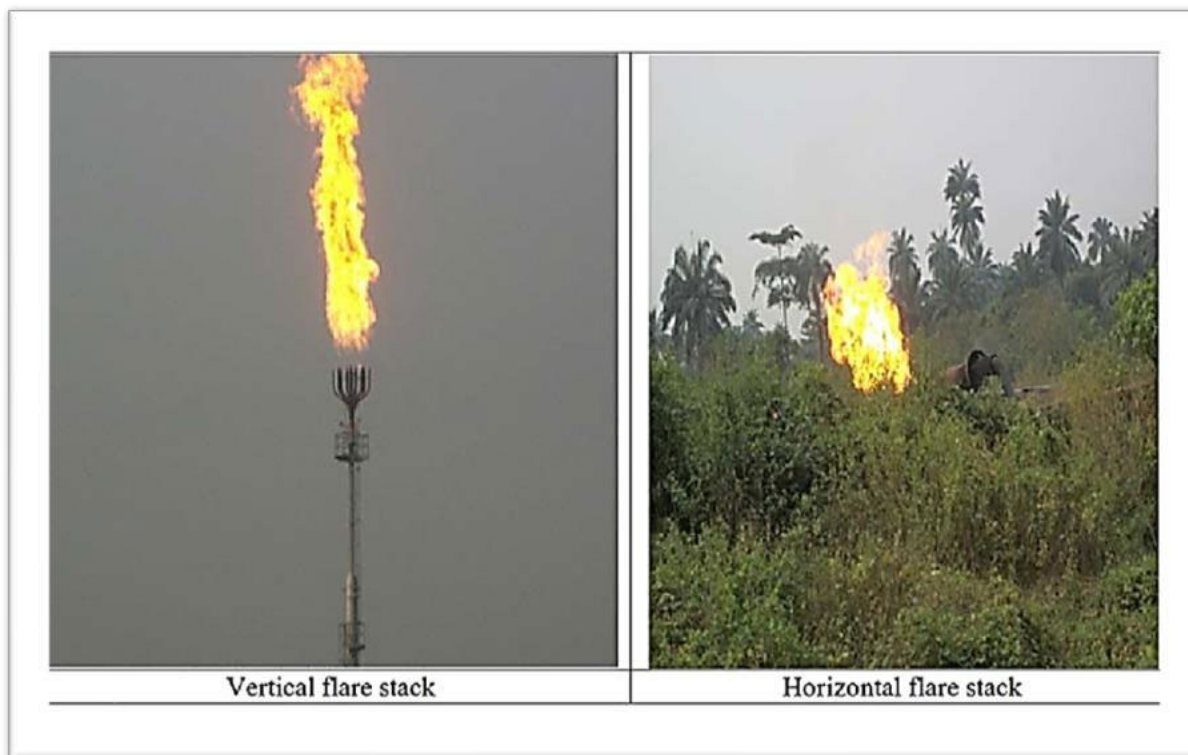


Figure 6 The location of Gas flaring in NDR (Seiyoboh and Izah, 2017)

There are multiple uses of natural gas that can be obtained by converting it into various forms for downstream implements such as cooking gas and electricity products. However, the unavailability of the required resources for its usage and conversion led to the use of the gas flaring process by oil and gas companies to meet their expenses. Concerning this, Donwa et al. (2015) mentioned that companies perform gas flaring due to associated problems with the transport, storage and processing of natural gas in NDR. However, this process also leads to the wastage of natural gas. While the oil and gas companies in NDR use gas flaring to manage their expenses and eliminate barriers caused by a lack of availability of the required resources, the companies end up facing significant financial loss due to the waste of natural gas annually. For example, around 150-170B m3 of gas is flared annually, which accounts for almost \$30.6 billion, which accounts for the annual gas consumption of the European Union and one-quarter consumption of the United States (Emam, 2015). The amount of gas production has also been reduced due to gas flaring, causing a loss of \$2-2.5 billion annually (Ogbe, 2010; Donwa et al., 2015; Ajugwo, 2013). The gas flaring volume has increased over the years despite incentives that are being offered by authorities to capture and provide associated gas. Almost 70M/m3 of natural gas is flared every day (Emoyan et al., 2008). Nigeria is flaring approximately 17.2B M3 of natural gas in NDR, according to

Ishisone (2004) and Donwa et al. (2015). An analysis of various oil wells in Nigeria from 2006-2014 is provided in the below figure, which includes information about condensate and crude oil manufacturing and the development of total and utilised gas in NDR along with the percentage of gas flared. The quantity, production and usage of gas flares vary according to the production period. Moreover, the targeted amounts have also not been achieved. It is caused by various reasons, such as the outdated nature of facilities, flood terrain, limited numbers of facilities, militia activity, inadequate lines and obsolete tools and instruments. The gas demand increases due to the availability of new opportunities for independent power plants, gas micro power setups, combined cycle turbines and expansion of gas to liquids.

Year	Crude oil and condensate production, barrels		Total gas, Billion Standard Cubic Feet	Quantity of gas utilized, BSCF	Quantity flared, BSCF	References
	Total	Daily average, mmb/pd				
2014	798,541,589	2.19	2,524.27	2,233.49	289.60	NNPC (2014).
2013	800,488,102	2.19	2,325.14	1,916.53	409.31	NNPC (2013).
2012	852,776,653	2.27	2,580.17	1,991.50	588.67	NNPC (2012).
2011	866,245,232	2.37	2,400.40	1,781.37	619.03	NNPC (2011).
2010	896,043,406	2.45	2,392.84	1,811.27	581.57	NNPC (2010).
2009	780,347,940	2.14	1,837.28	1,327.93	509.35	NNPC (2009).
2008	768,745,932	2.10	2,282.44	1,664.97	617.62	NNPC (2008).
2007	803,000,708	2.20	2,415.65	1,626.10	789.55	NNPC (2007).
2006	869,196,506	2.38	2,182.43	1,382.43	799.99	NNPC (2006).

Figure 7 Production and usage of crude gas and oil in Nigeria 2006-2014

Around 11 to 42.5% of natural gas is flared in Nigeria, which makes it one of the biggest countries in terms of gas flaring in the world. Nigeria has built various oil wells from 2004-2014 an average of around 155 annually. Oniemola and Sanusi (2009) identified that there are around 160 oil fields in Nigeria with around 1500 oil wells that provide 2.2-2.7m oil barrels each day. Oniemola and Sanusi (2009) further reported Nigeria's response of 17 billion ms of gas flaring, which also leads to the release of 3.5 and 12 million particulate tons, carbon monoxide, methane, sulphur dioxide and carbon dioxide in the natural environment. The percentage of oil wells has also increased due to an increase in explorational operations.

2.10.3. Gas Flaring Impact on the Economic and Sustainable Development of Nigeria

Nigeria has vast natural gas resources comprising 200.41 trillion SCF and 5.675B CM of gas, making it the biggest country in Africa in terms of the available proven gas resources. The oil reserves in Nigeria account for approximately 36.972BB, which suggests that gas reserves are available almost 900 times more than the oil reserves. However gas flaring is a major problem in Nigeria, which is impacting the growth of the oil and gas sector of the region. Nigeria witnessed a loss of NGN 233B, which accounts for \$600 51 560 due to the gas flaring process (PWC, 2020). This problem is persistent in most developing countries known for their oil and gas reserves. These countries suffer from adverse impacts of gas flaring on human well-being, aquatic species and the natural environment (Ismail and Umukoro, 2012). The environmental gas flaring costs in Nigeria are around NGN 28.8B, accounting for \$0.069377141 annually (PCW, 2020).

In addition to this, the petroleum industry of Nigeria has become a primary contribute to greenhouse emissions and carbon footprints, causing adverse environmental impacts mainly due to gas flaring. The process is gas flaring is concerned with burning the associated gas which emanates through the crude oil extraction due to oil and gas discovery operations (Ismail and Umukoro, 2012). There are various deposits of gas in Nigeria, yet the country flares a significant amount of associated gas in the upstream petroleum activities despite the challenges associated with obtaining a reliable power supply. Nigeria can use flared gas to generate electricity by providing it to turbines. However, the same flared gas has also become a major reason for the loss of billions of dollars for the Nigerian government (Nwamaka, 2016).

Nigeria has also reported the economic impacts of gas flaring, which must be explored by authorities to improve the financial position and growth of the country. The financial impacts of flared gas can be measured by the amount of revenue that is lost due to the gas flaring process and the same revenue that could have been used for the economic progress of the nation. Concerning this, Price water mentioned that Nigeria had reported a loss of around NGN 233B, which accounts for \$ 561,282,189.36 of income due to the gas flaring process in 2018. The findings revealed that Nigeria lost approximately NGN 267-229 (\$688,144,440- \$770,618,680) from 2016 to 2017 due to gas flaring. In another report, Vanguard (2019) identified that Nigeria is responsible for almost 425.2 B SCF of gas into gas flaring, which could have been sold to other countries for approximately \$1.1093152 in 2019 if the government had preserved it instead of flaring it (Olujobi and Yebisi, 2022). The income lost due to gas flaring in the same year could have been used to support the housing scheme for the population of Nigeria. The housing scheme could have

improved the global housing ranking of the country and provided 13 124 standard units for housing in the country.

Electricity is crucial for the economic development of a country. According to Olujobi (2020), the country could have easily resolved the problems encountered in the power sector if even a small percentage of the revenue lost to gas flaring was utilised to generate more electricity for the people. Only 62% of Nigerians were able to access electricity in 2019. Despite the fact that Nigeria is among the leading producers of oil and gas and more than 80% of electricity is produced through natural gas (Zillman et al., 2008). The utilisation of gas flares to boost the electricity market would increase the electric supply for Nigerians and resolve most of their issues. Natural gas is a commodity that is useful in both export and domestic markets where the region can boost its income and financial progress (Afinotan and Ojakorotu, 2009). In addition, natural gas can replace kerosene and emerged as an alternative for affordable household gas without making adverse environmental impacts.

Moreover, natural gas is a source that can be associated with the production of food, ceramic, steel and cement. The benefits of natural gas also expand to its used in the production of pharmaceuticals, rubber, fertilisers and plastics. There are various uses of gas that can be obtained if industries try to utilise gas instead of flaring it. The application of various uses of gas can also be visible in reducing unemployment and crime rates and creating a safe environment for investors by generating more opportunities for new business ideas.

The NDR residents are mostly farmers and fishermen. These people are adversely impacted by the side effects of gas flaring because it impacts water health and negatively influences aquatic species, reducing the production of organic products and leading to hardships and financial challenges for locals. Gas flaring causes acid rain, which impacts on the soil leading to soil infertility and a consequent reduction in the outcomes of farming. The gas flaring in NDR is causing financial challenges for residents and impacting their quality of life. Every year, Nigeria's oil and gas companies flare a large amount of gas in the year. The same gas could add to the revenue and be used by the federal government by efficiently utilising it to resolve social, environmental and economic issues and improve the living standards of the population.

Gas flaring is a major contributor to environmental degradation, which results in reduced quality of life and even the violation of human rights by creating an environment that is not suitable for the health and wellbeing of people (Olujobi, 2021). Humans depend on the environment to achieve their goals and meet the basic requirements of life. However, the severe negative impacts of gas flaring on the environment

are depriving humans of this facility and adding barriers to the achievement of their goals. The idea of sustainable development is arising due to the increasing requirement of aligning economic growth with the protection of the natural environment. A balance in the competing interests will allow humans to enjoy a better life without compromising on the natural climate, which is essential for the survival of all living species. In addition to this, it will also create an atmosphere which is healthy for the growth and survival of future generations. The importance of protecting interests is justified as long as these interests align with environment laws and make zero negative impacts on other species within the environment (Olujobi, 2021).

Sustainable development is defined as a process that allows people to meet the needs of the present without reducing the future wellbeing and health of coming generations (World Bank, 2017). Hence, sustainable development approaches can facilitate a balance in the preservation of natural resources as per the industrial and technical requirements of different industries. A safe future will also contribute to the improved ability of humans to perform different operations without compromising environmental wellbeing (Uwem and Enobong, 2017).

It is the responsibility of Nigerian authorities to create a safe future for the coming generations. Several species are going into extinction due to gas flaring, which should be a concern for the authorities because extinct species can never be revived, no matter how much important they are for the survival of the human population. Hence, it is important for the government to ensure the preservation of these species to ensure the long-term survival of the human population. However, maintaining a sustainable environment will be a key challenge for the government due to environmental degradation caused by gas flaring.

The exploration sites of oil and gas are also contributors to gas flaring, which is emerging as a major pollutant of soil, water and air. The dependence on fossil fuels for industrial activities, transport and home setups in Nigeria has become a major risk to the availability of petroleum resources and a threat to the long-term stability of the region. The inability of the Nigerian government to utilise alternate sources of energy, such as solar energy, has also created the dependence of people on fossil fuels to manage the energy requirements. There are several examples available to Nigeria that can allow the company to improve its financial and environmental growth. The development of Western countries is a major example for Nigeria because of the way these countries have sustainably utilised their resources to preserve the natural environment, improve living standards and maintain the economic progress of

regions. Nigeria should also focus on maintaining a balance in financial and sustainable growth to reduce the environmental impacts of its activities.

The revenue that was lost to gas flaring could have been used by the Nigerian government in various areas that could have flourished through that investment. The below figure shows how the Nigerian government could have spent the lost income more efficiently:

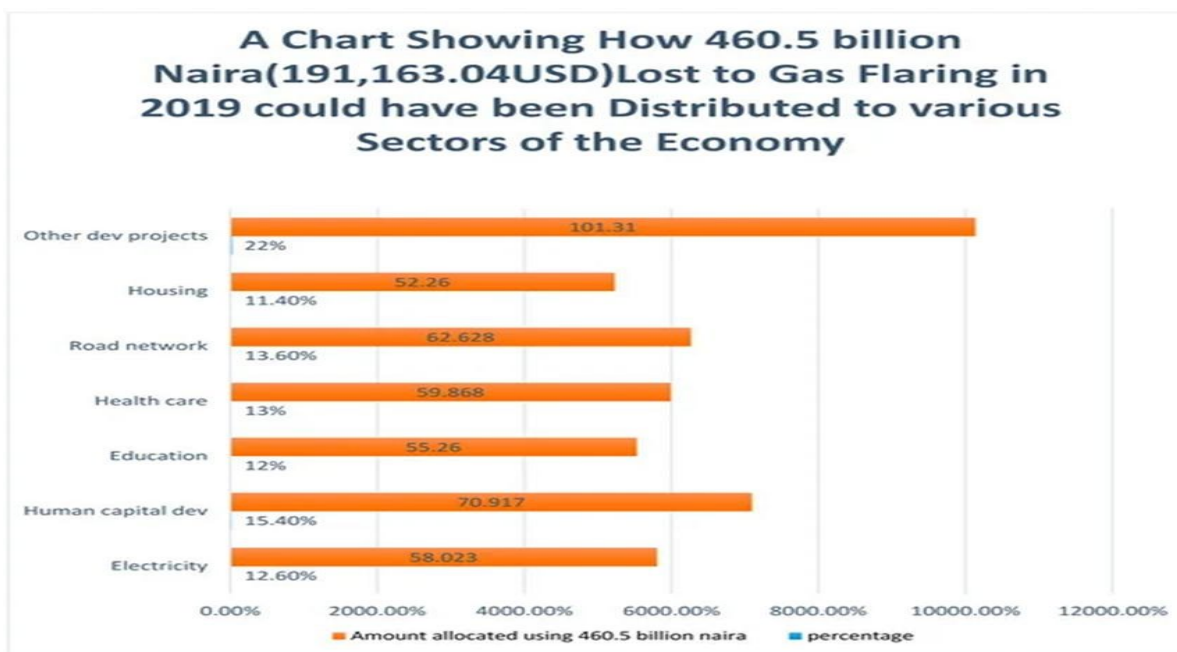


Figure 8 Financial loss caused by gas flaring in Nigeria (Olujobi and Yebisi, 2022)

Industrial operations of the discovery of natural resources pose a threat to the sustainability of Nigeria. However, the discovery process is not always harmful and negative because some countries have also used this process to turn their regions into literal heavens and become an attraction for global tourists and businesses. However, Nigeria has not been able to utilise any significant benefits from this process. The crude oil development process has become a major challenge for the well-being of the natural ecosystem in NDR because of the unsustainable operations of oil and gas companies. Concerning this, the World Bank report (2008) mentioned that NDR is the 2nd largest site of gas flaring after Russia, with almost 150m cubic meters of natural gas flaring reported by the region each year (Olujobi, 2021).

The natural ecosystem is facing destruction due to the industrial operations of burning natural gas. A polluted ecosystem becomes an unhealthy place for the survival of different species, which consequently leads to a decline in farming, fishing and agricultural activities in targeted regions. Agricultural operations such as crop farming have become difficult due to low crop yielding, which is also resulting in an increase

in the poverty percentage in different regions. Not only this, communities that are located near gas flaring sites are also more vulnerable to experiencing acidic rains and high temperatures of the soil. The acid rain results in the destruction of sea life, which also becomes a threat to fishermen who rely on fishing as a key source of income (Raj and Abejide, 2013). The process of gas flaring results in the release of toxic components like nitrogen oxides, sulphides, methane and carbon dioxide into the environment with other carcinogenic substances like dioxin that are toxic to the health of humans (Goldberg, 2000). Another impact of gas flaring in NDR is reflected in the increased rate of light pollution, which is defined as the continuous and consistent burning of excessive flames with limitless brightness from the stacks of natural burning gas that exposed flora and fauna to consistent and unnatural daylight. Light pollution creates challenges for organisms of that specific region and forces them to move to a less polluted and more friendly habitat for their survival. For example, aquatic health is important for the survival of fish and likewise, soil, crops and plants are important for the survival of animals and birds who rely on these resources for their food and survival. The organism reproduction rate has also declined due to light pollution which has also led to an increase in the percentage of species going into extinction (Olujobi, 2020).

Natural gas production has improved in the past few years, but it has also led to an increase in flaring, which is devastating for the natural environment of NDR.

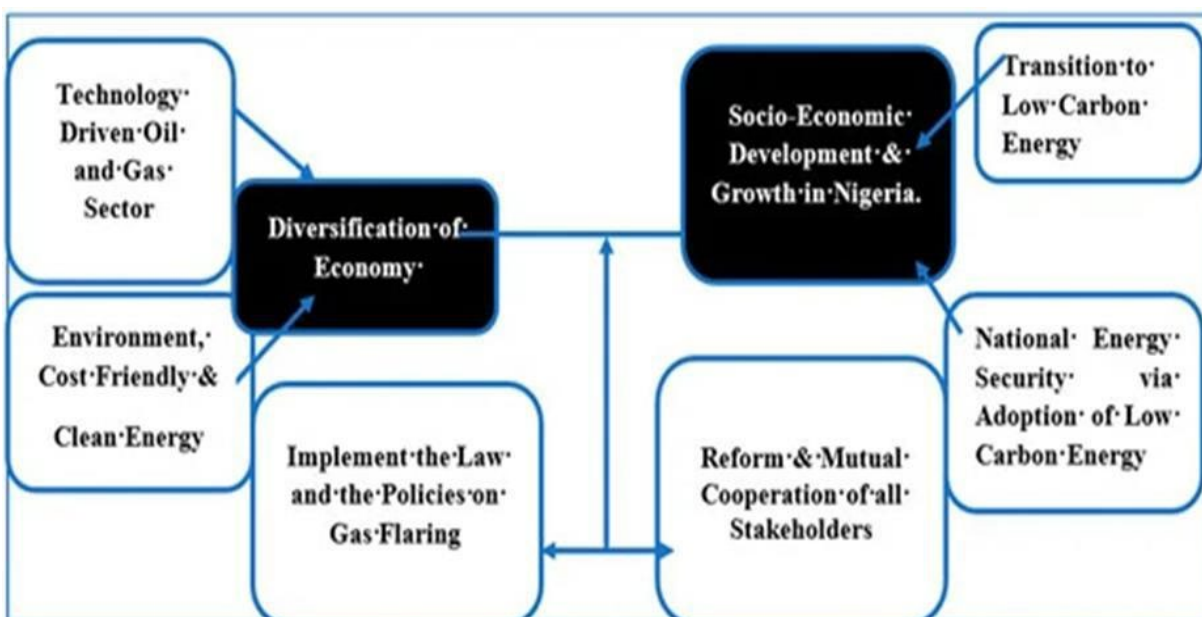


Figure 9 A hybrid model to reduce gas flaring in the oil and gas industry of Nigeria (Olujobi and Yebisi, 2022)

Concerted strategies from the federal government and oil businesses can reduce the environmental impacts of the flaring of gas into the natural atmosphere. In this context, the NEEDS identified that gas flaring is impacting the natural environment of Nigeria, which is why the country should invest in planting at least 7.5 million hectares of trees to absorb 638M cubic tons of components that are emitted from natural gas and generated annual expenses of \$94 million (Abubakar,2013).

2.11. Oil spillage

Oil spills are caused by the discharge of petroleum commodities in the natural environment as a result of anthropogenic operations, especially in coastal regions, leading to increased environmental pollution (Samhan et al., 2017). Oil spillage can be found on the sea, coast and even on the ground side (Muhammad et al., 2020). The contamination of oil has become a global concern, especially for less-privileged countries like Nigeria, which are already struggling to maintain their financial development (Adesipo et al., 2020; Samhan et al., 2017). The leakage of oil on both the shore and ground is harmful to the environment. In Nigeria, oil leakage is caused by crude oil discovery operations of companies that are facilitated through drilling of the ground to find oil resources (Ifelebuegu et al., 2017). The desire of oil and petroleum companies to increase petroleum outputs has resulted in an increase in drilling operations of companies (Adesipo et al., 2020). Oil spills can be caused by various factors, even human mistakes that can lead to oil spilling from the vessel while delivering or leaking into water resources. The spills of oil from offshore structures, refined products like diesel and petrol, ships, drilling tools and through oil related products such as carriers result in the storage of oil into natural resources, which is consumed by the sea or the agricultural land, resulting in the deprivation of these natural resources (Muhammad et al., 2020). Oil spills pollute sea water and impact the quality of life and health of sea life, resulting in environmental impacts and financial crises for fishermen (Haseena et al., 2017). The contaminated water is consumed by humans, animals and birds, which leads to a mass scale of health destruction and generation of health impacts. The residual hydrocarbons generate a thin layer on the water surface, polluting the natural water resources (Khan et al., 2013; Akpoghelie et al., 2021; NazmuzSakibj, 2021).

The contamination of water and oil spills poses a serious threat to public and environment health because it introduces harmful organic components such as PAHs into the food chain and becomes threatening to natural resources (Al-Wasify and Hamed, 2014; Bashir, 2021). The PAHs (polycyclic aromatic hydrocarbons) in aquatic systems are a major threat because the compounds released by them are recalcitrant. Petroleum hydrocarbons are an important source for everyday activities and for businesses

(Ekpo et al., 2018). Hence, it is important for businesses and governments to ensure that petroleum products are not leaked during their transport and development to reduce the vulnerability of local communities to the harmful environment and health impacts of oil spills (Al-Wasify and Hamed, 2014; Bashir, 2021).

2.11.1. Reasons of Oil Spills in Nigeria

Oil leaks from storage tanks and pipelines are resulting in spillage of thousands of barrels of crude oil into the natural environment of Nigeria. The poor management of storage tanks and oil pipelines is a cause of the leakage of oil into the environment. The oil management structures are outdated, and some of them have been performing for so many decades now, which resulting in their limited capacity to efficiently transport oil from one location to another (Bashir, 2021; Cai et al., 2021; Ifeiebuegu et al., 2017). In addition to this, the vandalism of pipelines of oil and gas by the people of host regions is resulting in oil spills in NDR. It is assumed that locals sabotage oil pipelines to access the oil or to obtain services associated with managing and repairing these pipelines. Oil bunkering is also an activity that is associated with oil spills, and it is often performed by Nigerian residents in cooperation with foreigners. These activities are associated with stealing and sabotaging oil pipelines to obtain different gains, such as financial and security gains (Cai et al., 2021; Muhammad et al., 2020). In addition to this, it is also assumed that pirates steal oil from NDR at a significant rate and steal around 300 million barrels of oil each day from Nigeria to another country illegally (Ifeiebuegu et al., 2017).

Some other causes of oil spills are sales of refined petroleum commodities, storage tanks, tanker accidents, roadside systems, corrosion of outdated oil pipelines, management of oil tasks, ballast water discharge, well blowout from flow centres and cleaning activities of oil tankers (Al-Wasify and Hamed, 2014; Cai et al., 2021; Bashir, 2021; Ekpo et al., 2018; Nnaji, 2017). The NDR is among the most affected regions by oil spills and their adverse impacts (Aniefiok et al., 2018).

2.11.2. Incidence of Oil Spills in Nigeria

Oil spills occur at shore due to various reasons at various points in time; as per the report of the Nigerian DPR (Department of Petroleum), around 31,121,909.80 oil was spilt in the natural environment in almost 9,107 events from 1976 to 2005 (Adesipo et al., 2020; Anaejionu et al., 2015). The analysis of the most affected regions showed that Nigeria is the most affected area that has faced adverse consequences of oil spills in the region. The extractable petroleum hydrocarbons were found in almost 7420gl-1 on the

water surface, 42,200 gl^{-1} in the wells of drinking water and 9000 gl^{-1} in benzene, which is 900 times more than the standards of the World Health Organisation (WHO). The figure below shows some of the major oil spill incidents in Nigeria. A summary of oil spill incidents by the DPR Annual Statistical Bulletin (2014) is provided in the table below. The table shows that around 65.13% of oil was spilled in 2014 due to sabotaging, 14.35% of oil was spilled due to natural accidents such as human error and equipment failure, 3% of oil spills happened due to unidentified situations and 17.38% of oil spilled due to unknown reasons (DPR, 2014). The estimates are as controlled as they can be because oil companies in Nigeria have continuously claimed that more than 90% of oil spills in the region are caused by sabotaging operations that are not controlled by the local government. The below figure shows that around 1087 oil spills were recorded in 2014 with a monthly average of 91 spills.

Month	Number of spills by causes.							Total number of spills	Volume spilled (BBLs)
	Natural accident	corrosion	Equipment failure	Sabotage	Human error	YTBD	Mystery		
January	0	6	5	86	1	17	2	117	384.95
February	0	5	4	67	0	20	4	100	168.26
March	0	3	7	63	1	21	3	98	269.91
April	1	4	9	98	2	15	5	134	465.15
May	2	1	8	90	0	13	3	117	690.42
June	1	7	7	49	2	22	2	90	194.47
July	1	5	21	53	1	19	3	103	711.79
August	1	4	8	50	0	9	2	74	1578.86
September	1	0	8	55	0	11	2	77	159.14
October	0	1	8	22	1	12	1	45	427.60
November	5	4	6	39	0	17	5	76	5224.36
December	0	2	3	36	0	13	2	56	27.25
Total	12	42	94	708	8	189	34	1087	10,302.6

In the past 5 years, Nigeria has reported around 733 spill incidents annuals, with 23,000 spill barrels each year (DPR, 2014).

Years	Number of spills	Quantity spilled - (Barrels)
2010	537	17,658.10
2011	673	66,906.84
2012	844	17,526.37
2013	522	4,066.20
2014	1087	10,302.16

Figure 10 Summary of spill incidences Source: Department of petroleum resources (DPR), 2014.

The number of oil spill incidents has dramatically increased in Nigeria, resulting in significant negative impacts on the coastal and agricultural environment in NDR. The oil spill incidents in the NDR have been

reported to be around 273 spills on average, with around 115,000 barrels of oil spills of crude oil annually from 1976 to 2001 (Zabbey, 2009). Around 6,333 spill incidents were reported from 2010 to 2015 (Ejiba et al., 2016), whereas 1,879 oil spill incidents were reported from the start of 2015 to the mid of 2015. Oil spills have also contributed to a loss of N14,846.71M worth of crude oil in 2014 (NNPC, 2014). A common belief among environmental groups is that there are at least 300 spill cases that happen each year (ERA/FE, 2012). In short, around 9 to 13 million oil barrels were spilt from 1958 to 2008, which is equivalent to 1 Exxon Valdez each year for the same period (ERA/FE, 2012). These numbers are drastically higher than only 10 reported oil spills in the entire Europe from 1971 to 2011 as per AIN (2015). The below figure highlights the volume and number of reported oil spills in the water from 1997-2014. The biggest spill data in Nigeria was reported in January 1980 due to a good blowout, when around 200,000 oil barrels, which equates to 8.4 million US gallons, were spilt from an oil facility into the ocean. The incident caused damage of 340 hectares of mangrove, and it is considered to be the biggest spill in the history of Nigeria (Achebe et al., 2012). Russia is also a major contributor to environmental degradation due to outdated and poorly administered oil pipelines that lead to the wastage of millions of tons of oil every year. The environmental impacts of these oil spills are still not reported accurately. The reports have suggested that 4.5 million tons of oil leaks in Russia are 7 times higher in comparison to the BP Deepwater Horizon spills in the Mexico Gulf that happened in 2010 (Sharkov, 2015). The Khanty-Mansi region is a leading oil manufacturing state in Russia. In 2009, the region was responsible for an annual oil spill of around 5781 tons on 229.6 hectares. A Russian corporation for Rosneft solely spilt around 3738 tons of oil, and the

region also reported oil spills of around 5289 tons in 2011 (Moskovchenko, 2005; Vaver, 2012).

Year	Total number of reported spills	Quantity in barrels
1997	339	59,272.00
1998	390	-
1999	319	-
2000	637	84,072.00
2001	412	120,967.00
2010	537	17,658.10
2011	673	66,906.84
2012	844	17,526.37
2013	522	4066.20
2014	1087	10,302.16

Figure 11 Oil spill in NDR (Kadafa, 2012; World Bank Group, 2015)



Figure 12 Oil spillage impact on vegetation loss in Ogoni land in NDR (A) (Grey, 2018), Russia's waste of millions of tons of oil from pipelines (B) (Achebe et al., 2012)

2.11.3. Oil Spillage Impact on Nigeria

The problem of oil spills can be managed easily through careful strategies that are applied during drilling operations. However, the extent of oil spills and the fact that spilling incidents are happening regularly are the biggest challenges in Nigeria that are combined with little effort from authorities, which further makes it difficult to control such incidents. The local environment will be affected when oil spills and not cleaned and mitigated efficiently because they eventually spread over a larger area and affect both marine life and terrestrials. The aquatic species and farmers face the most impact of oil spills, which directly impact their survival by polluting essential resources (Akpan, 2012; Plessl et al., 2017). Oil spills are caused by the installation and corrosion of oil pipelines, ineffective management of infrastructure, sabotaging drills, the release of oil, ineffective control of oil wells, equipment failure and ineffective care in managing oil vessels (Nwilo and Badejo, 2001; Adati, 2012; NNPC 2013).

Oil spillage is a major threat to the sustainability of the ecosystem and a leading cause of various environmental issues that take decades for a complete recovery (Al-Zaban et al., 2020). Nigeria has reported adverse impacts of oil spills in its regions, specifically in the NDR, which is now identified as the most vulnerable state in the world to the adverse impacts of oil spills (Könnet, 2014). Oil production and discovery have impacted around 2000 locations and resulted in a range of negative outcomes related to public health, socioeconomic situations, ecological systems and environmental wellbeing (Bashir, 2021). This process is also associated with health impacts, including birth defects, genetic abnormalities, infertility and cancer because crude oil is a carcinogenic substance that includes teratogenic compounds and mutagenic (Agbaji et al., 2020; Zabbey et al., 2017). The hydrocarbon and associated elements in the environment are a major problem because they impact tropical rainforests and wetlands, and in some situations, they generate permanent impacts on the target locations (Al-Zaban et al., 2020; Halanych et al., 2021; John et al., 2016). The green vegetation and blue streams in the region have turned black due to the black gold's oil processing activities, due to which unemployment has increased, living standards have increased, the availability of food resources has decreased, and health problems have increased for the inhabitants (Ekpo et al., 2018).

The impacts of oil pollution on agricultural systems were evaluated by Akpokodje and Salau (2015) using the production function model by Ramon Lopez's Cobb Douglas. The findings revealed that an increase in oil spills and a reduction in forests has negatively impacted agricultural health, whereas capital, land, and labour have significantly improved agricultural wellbeing in NDR. In this context, Atubi et al. (2015)

analysed the influence of environmental degradation on the wellbeing of the human population in 9 specific communities in Delta state in Nigeria through a cluster and principal component assessment. The authors applied both secondary and primary data using one-year hospital data on different health conditions such as eye and skin infections, bronchitis, asthma, cardiovascular conditions and cough to determine the influence of gas flaring on the human population. The extent to which the conditions occurred showed a significant impact of oil flaring on the target regions. Another study was conducted by Osuagwu and Olaifa (2018) to analyse the influence of oil spills on the management of sea life in NDR from 1981 to 2015 through an estimable model generated through the Cobb Douglas production setup. The variables comprised fish production, oil spills, oil production, loan to fishery and fisheries numbers. The results show that oil production and oil spills have a significant negative impact on the production of fish, whereas farm labour has a positive influence on the production of fish.

Year	Quantity of oil spilled (barrels)	Place	References
1970	250	The Bomu 11 oil	Adesipo et al. (2020)
1978	500,000	GOCON's Escravos oil spill	Adesipo et al. (2020)
1979	570,000	Shell Petroleum Development Company's (SPDC) Forcados Terminal tank failure	Adesipo et al. (2020)
1980	600,000	Texaco Funiwa-5 Field blowout and Ovakama pipeline spill.	Bashir (2021)
1982	18,818 5,000	Abudu pipeline spill and Ebocha-Brass pipeline	Adesipo et al. (2020)
1984	54,000	Ikata pipeline spill	Bashir (2021)
1998	40,000	Idoho oil spill MOBIL/QUA IBOE oil spillage Jones Creek oil disaster.	Adesipo et al. (2020)
2021	2,000,000	Aiteo's OML29 Well 1 oil blowout	Retrieved from https://homef.org/2021/12/22/.aietos-oml-29-well-01-blowout-an-ecologicalhorror-tale/

Figure 13 Incidents of oil spills in Nigeria

2.12. Conclusion

Crude oil production is associated with the development of various pollutants that can generate negative environmental impacts through both direct and indirect measures. Some of the major consequences of

crude oil production include gas flaring, vandalism of pipelines and oil spillage, which lead to the release of toxic oil pollutants in the environment and adversely influence the health of the natural atmosphere. The negative outcomes of crude oil are attributed to various reasons, including sabotage, theft and equipment failure, which lead to oil spills that end up in water or on agricultural land. The incidents of oil spills have destroyed vegetation health, polluted surface and water and created regional crises within targeted regions. Crude oil discovery and production activities have generated impacts that are mainly associated with the processing of heavy crude oil. The environmental impacts include noise pollution, disturbance of ecological sources, reduced air quality, release of harmful components and implications on the health and safety of people. Hence, it is important for the petroleum industry to implement procedures that will offer protection to a reasonable extent to the natural environment. The effective implementation of procedures and techniques will reduce the percentage of toxic pollutants and improve environmental health.

In light of the above analysis, the present study suggests the implementation of relevant laws and policies associated with the production and management of oil resources in Nigeria. The application of laws will provide a defined structure to oil companies and also highlight the consequences of failing to adopt the standards of sustainable processing and production. Laws and regulations will play an important role in improving the living standards and life quality of Nigerians by increasing the involvement of oil and gas companies in sustainable initiatives that are suitable for the growth of the society and environment.

3. Chapter Three: Social Impacts of Oil-induced Environmental Degradation in the Niger Delta Region: A Review of the Literature

The following chapter provides an overview of literature relevant to the social influence of oil-induced environmental degradation (OED) in the Niger Delta Region (NDR). The section will further decrease measures to restore environmental health and mitigate the negative influence of unsustainable activities caused by the oil and gas sector in Nigeria. The section will explore and describe proactive strategies to minimise threats caused by the discovery and production activities of oil and gas companies in NDR.

3.1. Introduction

The production and discovery of crude oil have always been attractive investment options for multinational oil corporations (MNOCs) due to the financial returns and the growth potential of this field. The investment in crude oil production and discovery has significantly increased in the past 50 years with MNOCs investing millions of dollars into obtaining technological tools and complex activities to gain access to resources of crude oil (Oguduvwe, 2013). These investments have provided financial returns in billions of dollars (Odoemene, 2011). However, these profits have not been transformed to the locals and the overall state of NDR from MNOCs, who have been relying on this area for the growth of their business (Oguduvwe, 2013; Oluduro and Oluduro, 2012).

Concerning this information, the residents of NDR have claimed that adverse impacts of MNOC operations for the extraction and discovery of crude oil have resulted in adverse impacts on the region. The residents have made complaints against gas flaring, oil spillage, inefficient chemical waste management and other pollutants that are resulting from the unsustainable activities of MNOCs in the regions (Donwa, 2011). The residents further demand that MNOCs must share the financial responsibility of managing adverse impacts that result from their activities in the region (Ogula, 2012; Omokimite, 2012). Concerning this, Aras and Crowther (2009) further mentioned that a business must take accountability for the adverse impacts of its activities. Hence, the MNOCs in NDR must take financial responsibility for reducing the harm caused by their operations in the region (Donwa, 2011; Olufemi, 2010).

Amadi and Abdullah (2012) quoted the triple bottom line theory to highlight the importance of sustainability in all conducts of a business. The approach shows the responsibility of a business towards the planet, people and the property of the society. Concerning this, Amadi and Abdullah (2012) mentioned that MNOCs must address the requirements of the residents of NDR to manage and acknowledge the concerns of stakeholders. Stakeholders are important for business because they represent individuals, organisations or groups who are directly or indirectly affected by organisational activities (Amadi and Abdullah, 2012). In light of the adverse impacts of MNOCs in NDR, Edino et al. (2010) and Odoemene (2011) mentioned negative externalities caused by oil and gas exploration activities are a leading cause of chronic health conditions, loss of agricultural land, deprivation, forced migration and social tension. While the MNOCs and associated parties obtained financial gains from their activities in NDR, the residents who were not a part of their operations faced an indirect impact of these activities on their health and overall well-being (Oguduvwe, 2013; Ogula, 2012). Amadi and Abdullah (2012) stressed the triple bottom line

concept and mentioned that a business should be able to provide benefits to its stakeholders and not just its shareholders. MNOCs in NDR can depict their responsibility by equally distributing the economic gains obtained through their activities in the region (Ogula, 2012; Iniaghe et al., 2013). In this context, Carney et al. (2011) mentioned that all stakeholders deserve fair and equal rights. The accessibility of fair rights and opportunities will enable MNOCs to compensate for the adverse impacts of their activities and allow local residents to sustain their quality of life by exploring alternative options for their growth (Ogular, 2012).

A majority of MNOCs, including SPDC (MNOC's list is provided in appendix A), have mentioned in their press release that TBL is a guiding principle for the agenda for improved environment and society (Amadi and Abdullah, 2012). The TBL (triple bottom line) framework aims to obtain a balance in societal, environmental and economic growth (Amadi and Abdullah, 2012). According to Onwubiko et al. (2013), the internal population has faced displacement due to OED. The residents of NDR are not satisfied with the extent to which MNOCs and the Nigerian government are interested in the development of their hometown (Akhigbe, 2013). The dissatisfaction has also resulted in regional conflict in the area (Chukwuemeka and Aghara, 2010). However, MNOCs are able to violate environmental laws and indulge in irresponsible conduct due to the alliance between powerful elites, government and oil companies in the region (Obi, 2011).

Businesses must depict their environmental accountability by closely analysing natural resources that are getting influenced or can be influenced due to their activities ((Donwa, 2011). Environmental accounts highlight the importance of managing the well-being of residents of resource regions, particularly focusing on the efficient and sustainable use of resources to generate benefits for locals (Donwa, 201). It is commonly assumed that oil and gas production activities and their consequences are causing a decline in the productivity of host regions (Ebegbulem et al., 2013). Unsustainable activities of MNOCs have resulted in negative impacts on agricultural activities and marine life and reduced the life quality of locals because of their reliance on fishing and farming as key sources of earning (Oshwofasa et al., 2012). Oil spills and gas flaring reduce the nutrient value and potential growth of crops in NDR (Edino et al., 2010). Acidic rains and heatwaves are caused by gas flairs, which inevitably harm resources found underwater (Edino et al., 2010). The NDR communities used to operate independently; however, now these communities are suffering and dealing with poverty due to the destruction of the natural environment of the region (Snapps, 2011). The crisis in NDR is caused by environmental degradation, which has resulted in the

transformation of a diverse and rich environment into an infertile wasteland despite the availability of unique reserves (Okpara, 2011).

The failure of the Nigeria government to impose strict environmental laws to monitor and control the activities of MNOCs has led to a careless attitude of companies towards the legal aspect of indulging in unsustainable and potentially harmful activities (Idemudia, 2009). Nigeria is a rentier state because the government derives more than half of its income from nontax resources and taxes on profits and acts as a one-export country (Akinde, 2011). A rentier state is one that focuses on loyalty and personal dynamics instead of the actual efficiency of individuals (Bagaji et al., 2011; Emuedo, 2010). The challenges that are currently faced by locals of NDR are primarily caused by the near extinction of resources that have been a consistent source of the survival of locals in the region (Odoemene, 2011). The population of NDR is dependent on environmental sustainability for its survival because a majority of the people are either farmers or fishers, and both of these professionals require good agricultural and aquatic health (Obi, 2011). The suffering of NDR residents has only increased due to the failure of the Nigerian government to implement laws that can protect and support the environment and the rights of the local population (Obi, 2011; Omojimate, 2012).

3.2. Social Influence of OED

The communities living in gas and oil-producing regions rely on environmental stability for stability. The correlation between economic empowerment and environmental stability can be identified through sites where farmers are seen managing their activities near gas-flaring areas or fishermen selling fish near these sites (Onyekuru, 2011). The agricultural products such as fruits and vegetables and findings of fishermen are sold in large numbers in local markets. However, these products are contaminated with harmful substances due to their exposure to MNOC activities. The irony is that flares burn off energy in the natural environment and serve as a light source for villages and communities that still operate with no accessibility to electricity, especially at nighttime (Aghalino 2009). Unfortunately, the awareness levels in the local population are also very low, which is why local farmers who dry products near gas-flaring regions are not even aware of the harmful impacts of these flares on the products and for their own health and wellbeing. The MNOCs and the Nigerian government have failed the population because the initial oil and gas discovery activities were initiated with the promises of a bright future for the population (Aghalino 2009:220).

Environmental degradation is emerging as a serious concern for the well-being of local residents of rural communities and the overall survival of the residents of NDR. Hassan and Kouhy (2013) performed an assessment of environmental modifications in Nigeria over the years and identified that the scale and extent of environmental degradation has directly affected human health, fishing, ecological state, crops and the overall life expectancy of people by exposing them to extremely harmful conditions. For instance, gas flare sites are located very close to houses and agricultural lands without any scrutiny or fear of accountability from regulatory authorities due to the internal power dynamics in the state (Ojimba and Iyagba (2012). According to Diugwu et al. (2013), toxin spare and excessive heat are generating severe impacts on people, leading to an increased percentage of reported cases of skin diseases, blood disorders, asthma and even miscarriages.

Opukri and Ibaba (2008) have identified the socioeconomic outcomes of environmental degradation. According to Eregha and Irughe (2009), environmental degradation must be a key concern of researchers and authorities in Nigeria, especially in NDR, due to its significant adverse impacts on the environment. The views align with the findings of Ukeje (2001), who identified that OED are impacting rivers, farmlands, the environment, streams and overall human health. These negative outcomes are further reflected in poverty and increased conflicts in the region. The outcomes are attributed to perceived social injustice, flaws in regulation and the entire power structure in the region (Akpomovie, 2011). In this context, Joke (2004) identified that environmental degradation is generating barriers to the growth of natural ecosystems, community development and improved life quality of residents.

3.2.1. Poverty

The local population of the NDR relies on natural resources to meet their expenses through fishing and farming (Chinweze et al., 2012). The activities of oil and gas MNOCs in the region have led to an increase in hunger and poverty by destroying natural resources and sources of income for the locals (Pittock et al., 2018). The careless attitude of companies towards oil spills has led to a decline in the fertility of farming land, leaving no choice but to find alternative sources of income for farmers. Companies need to realise that a land loss has its capability to operate efficiently once an oil spill occurs on a certain part. Not only this, but oil spills have also affected aquatic health by destroying healthy water and reducing the percentage of seafood (Sam et al., 2017). Oil spills adversely impact soil fertility by altering physio - chemical properties that lead to reduced crop properties and plant growth (Onwural et al., 2007; Tanee and Albert, 2015). A reduction in crop fertility negatively impacts the financial strength of farmers who

rely on crops to manage their expenses (Sam et al., 2017). Oil spills have also made it difficult for mangroves to survive in their natural habitat by destroying the natural environment (Jack et al., 2016). As a result of this, farmers and fishers who were relying on water sources for their crops and fishing businesses were forced to look for alternative sources of income.

Oil pollution is mainly caused by offshore drilling operations because of leaks in pipelines and production and accidental water discharge. Companies use heavy machinery to facilitate drilling operations by utilising metals, including nickel and vanadium; both of these elements are known for their impacts on water contamination and destruction of natural ecosystems (UNEP, 2013). The consistent ignorance of the government and MNOCs towards the detrimental impacts of their activities is leading to an increase in the poverty rate in NDR and also increasing the potential of the involvement of locals in illegal activities to sustain their livelihood (Sam and Zabbey, 2018). Soil degradation is a major impact of oil spills and acidic rains that are caused by gas flaring. Acidic rains and oil spills impact the migration of fish, marine life health and crop-yielding capacity, hence making an overall negative impact on both land and water. Poor fishermen and farmers who rely on crop yielding and fishing are facing more financial struggles with a decline in land fertility and a reduced percentage of fish in the water. The agricultural industry of Nigeria has been a primary source of employment for women and youngsters, however, this sector has lost its profitability due to the promotion of unsustainable environmental practices of MNOCs. The agricultural industry is supposed to be the biggest industry in Nigeria, particularly in NDR (Bello, 2017). The current state of Ogoni is a clear example of the increase in the immigration of locals and environmental refugees.

The NDR is considered to be the least developed and most poor region in Africa. Ironically, the same region is blessed with a diverse range of natural resources, which has the potential to improve its financial strength and stability (Bodo, 2019). Ogonis are industrious individuals who prefer to earn through fishing and farming to manage their expenses (Ken Saro Wiwa, 1995). However, oil discovery in their land has only led to increased struggles and financial challenges for these locals. The NDR was a beautiful countryside with sources of green vegetation and fresh air. However, the environment has been destroyed over the years with consistent unsustainable operations of oil and gas companies in the region (Bodo and David, 2018). According to David et al. (2019), the lands and rivers have become polluted due to the activities of oil and gas MNOCs. The agricultural and fishing land of NDR will need at least three decades to revive their health due to a significant decline in marine life and agricultural fertility caused by oil and gas operations in the region. The population of NDR is hence left with no sources to generate their income and improve their lifestyle (Bodo, 2019). The colonial and precolonial eras were like a golden

period for the population of NDR because of the availability of vast food resources and the fertility of natural land and water (Saro-Wiwa, 1995). Oil pollution has influenced the well-being of the local population and ecosystem of NDR and also highlighted the inability of the Nigerian government to deal with unethical operations and management of military activities in the area (Tantua and Kamruzzaman, 2016; Babatunde et al., 2017; Omokhoa, 2015). The population of NDR that used to earn respectfully through farming and fishing is not indulging in unethical activities such as militancy and oil theft to manage their income (Omokhoa, 2015; Babatunde et al., 2017). The youngsters in NDR are also indulging in the kidnapping of foreign expatriates to demand money for their release (Tantua and Kamruzzaman, 2016; Omokhoa, 2015; Babatunde et al., 2017).

A region that is rich with diverse resources, including agricultural land, aquatic resources and oil and gas sources, is now recognised as home to the poorest population in the entire Nigeria. The MNOCs have stolen their primary sources of income by destroying farming land and aquatic facilities, leaving a large percentage of the population vulnerable to unemployment (David and Bodo, 2019). Food scarcity is emerging as a key issue in the region with underdeveloped roads, inadequate health facilities, a lack of availability of clean drinking water, underdeveloped markets and poorly managed schools (Bodo, 2019). The locals of NDR are living in polluted slums under extremely unsafe and unhealthy conditions due to the focus of the government on materialising their homeland without considering the human rights and environmental implications of their activities (Bodo, 2019). In addition to this, oil companies are also not held accountable for misconduct, such as oil spills in the region. Despite the drastic impacts of oil spills on the local population, MNOCs have not been compensating the population properly for the loss of their health and income sources. The MNOCs have only agreed in some cases to compensate the population by increasing their involvement in future projects and offering them jobs in their facilities. However, these solutions provide only short-term relief with the impending threat of long-term destruction of the region.

3.2.2. Cultural Deterioration

The oil and gas operations have led to cultural deterioration in NDR. The creek water that was used traditionally in the region has now completely gone. The use of creek water in cooking, both domestic chores, post-natal formalities, and medicine use has also declined significantly. The communities in NDR, such as the Bodo community, used creek water for a range of recreational operations, including relaxation spots, local markets, canoe regattas and Kozo beach parts (Fentiman and Zabbey, 2015). However, the extreme extent of pollution has also put a stop to these operations. The locals have also reduced indulging

in cultural beliefs related to masquerades and coastal shrines along with dancing and cultural singing; these activities were a source of income for various families in the community (Fentiman and Zabbey, 2015).

Earlier, young fishers used the ritual of gifting a fish to elderlies who would pay homage to these fishers on their arrival. However, this ritual has also stopped due to water pollution. Studies have also shown a significant impact on the social dimensions of men and women. The male population is delaying getting married because they are not able to manage the expenses of a family. The burial ceremonies have also been facing delays for more than a year now due to the inability of families to manage associated expenses. Since the occurrence of a major spill incident, the percentage of migration has also increased, as locals are looking for better farming opportunities in other regions to maintain their livelihoods (Fentiman and Zabbey, 2015).

3.2.3. Food Security

Food security has become a persistent problem for Nigeria. As per the Global Food Security Index (2019), Nigeria is standing at the 96th position out of 113 countries in terms of a decline in food production in the region. In addition to this, the World Health Organisation and UNICEF also revealed that around 32.6% of people in Nigeria were malnourished in 2019 (Obi *et al.*, 2019). The sample population of NDR showed that the availability, production and consumption of food have significantly reduced in the region over the years. The imported food is also not accessible for locals due to the unaffordability of products. These underlying procedures are important to determine the extent of food security and the vulnerability of the population to food problems in Niger Delta Region.

Until now, various studies have highlighted the detrimental impacts of oil and gas management on the health and wellbeing of the population in NDR (Pegg and Zabbey, 2013). The involvement of oil and gas companies in unethical conduct and violation of environmental laws in NDR has led to the destruction of the natural landscape, which is a primary source of income and food production for the population. The unethical activities of oil and gas companies have led to a decline in water quality, damaged fauna and flora, impaired the aesthetic value and reduced the fertility of the agricultural land (Watts, 2017; Isumonah, 2015; Ako, 2015; Obi, 2014). Article 1 (1) of OPRC is applicable to Nigeria as a member state. The article suggests that member states must take relevant actions to manage and respond to accidents and adverse outcomes of the oil population in their respective regions. However, the Nigerian government has maintained a very non-serious attitude towards managing environmental aspects of unethical oil and

gas operations in the region (Okafor-Yarwood, 2018). The MNOCs in Nigeria are accountable within the light of various environmental laws, including the Federal Environmental Protection Agency Act (FEPA) 1998, Associated Gas Re-injection act (1979) and Oil in Navigable Waters Act 1968 (Ibaba, 2010).

3.2.4. The Association between Youth Restiveness and Oil

Youth restiveness is a tool that the youth use to obtain their rights from authorities. The population of NDR was known for their peaceful nature and friendly behaviour (Bodo, 2019). However, the unethical conduct of the government and MNOCs has pushed this population to their limits and led to the promotion of illegal and aggressive actions by youngsters. The youth are now retaliating against authorities only to obtain their rights and get their land back to its original form (Bodo, 2018). The rage among youth has also led to the foundation of various internal groups and movements, including the Niger Delta (ND) Avengers, ND People Volunteer Force and Movement for the Emancipation of the ND. In addition to this, various cults have also been formed to snatch the resources (Bodo, 2019). The burning of houses and fights has now become a common practice among these cults, which is also leading to increased military invasion in the region. Moreover, people are also migrating to other regions due to the increasing internal conflicts in NDR (Okolie-Osemene, 2015). The youth is also indulging in violent protests to gain the attention of authorities and highlight the adverse impacts of their activities on the NDR. The violent protests have taken the form of stealing and sabotaging oil resources, murder, arson and kidnapping of people to get their concerns addressed. These events have become almost a daily occurrence in NDR despite their harmful impacts on the legal status and long-term well-being of the region. The host community of NDR demands a fair deal from MNOCs and authorities due to the violation and destruction of their homeland by these entities for their gains (World Bank, 1995, 2004). A study shows that a decline in the quality of zinc roofs due to gas flaring was a major concern of communities in NDR in 2010. Despite the wrong nature of activities, the protests of NDR residents are justified to some extent because their rights have been violated, and they have been ignored by authorities for so long now.

3.2.5. Climate Change

Climate change is a key challenge for the global population due to its adverse impacts on environmental health and long-term stability (Wetzel et al., 2012; Edenhofer et al., 2014; Halofsky et al., 2015; Pachauri et al., 2014; Field et al., 2014). The persistence, intensity and duration of climate have visibly improved in recent years, which has also led to an increased interest in academic scholars within the field of environmental stability and climate change (Olmstead and Stavins, 2012; Romeo et al., 2015; Gleditsch

and Nordås, 2014; Edenhofer et al., 2014; Gleick and Palaniappan, 2010). Climate change is emerging as a threat to global concerns, and its impacts are expected to only get worse in the coming years for future generations (Fung et al., 2011; Mekonnen and Hoekstra, 2016; NIC, 2016; Pachauri et al., 2014; Stocker, et al., 2013). Poorer populations who are already exposed to problems related to food security will observe a more drastic impact of climate change on their lifestyle because these populations have limited access to financial and social barriers that can control the impact of declining environmental conditions (Buhaug et al., 2015; Confalonieri et al., 2007; Francis, 2015; Funder et al., 2012; Tirado et al., 2010; ICA, 2015). Climate change is generating long-term impacts by challenging cultural activities and the wellbeing of people (Adger, 2006; Chisenga and Hamazakaza, 2008). The population of NDR is more vulnerable to the extreme effects of climate because of the dependence on agricultural land and marine life, which is already declining due to the operations of MNOCs in the regions.

3.2.6. The Correlation of Oil and Human Rights Violation

The concept of human rights violation is associated with the abuse of the basic rights of the population. The NDR is the richest region of Nigeria due to the availability of oil resources, which account for almost the entire income from foreign exchange and more than half of the GDP of Nigeria. However, the Nigerian government has kept a blind eye towards the rights of the residents of NDR (Obi et al., 2006). More than 70% of NDR residents are living in extreme poverty because their sources of income, such as water and agricultural lands, have been destroyed by the government in the pursuit of financial gains (AI, 2009). The protests and response of NDR residents are observed as a threat to the security of Nigeria. The government ignores the reasons behind the protests of people and kills and arrests rebellions, labelling them as criminals and terrorists.

The UNCTAD (2007) mentioned in their report that the involvement of transactional entities in the extractive markets leads to the violation of human rights in the form of disappearance of residents, torture and detention, loss of agricultural land and decline in life quality without any compensation or negotiation. The activities of oil and gas companies have serious consequences for the local environment, but these concerns are mostly ignored by host governments due to the financial gains that are expected through this transaction. In most cases, governments form alliances with MNOCs to support their unsustainable conduct in local areas for the search and production of oil and gas despite the harmful and negative consequences for the local population and environment. The focus on financial gains that benefit only certain individuals leads governments to provide security to certain entities and compromise the

national security of the region. These activities are also visible in the violation of human rights of the residents of NDR.

Various examples of human rights violations in the hands of the Nigerian government and MNOCs can be found in Nigerian newspapers. In 1995, Ken Saro Wiwa led protests against Shell and other MNCs in Ogoni because of the destructive impacts of business activities on the local population and unfair trade that was only providing benefits to the company and reducing the life quality of locals (Obi, 2001). The military operations in NDR are also an example of human rights violations (Ikelegbe, 2005:255). Various news sources have proved that a large percentage of Nigerian women, especially those who belong to more deprived areas, are subjected to harassment, humiliation and violence by local and national authorities who illegally occupy their land and resources and punish locals for protesting against the unethical conduct of corporations.

The federal authorities in Nigeria conduct military operations to identify rebellions that can potentially threaten the unethical conduct of the government, MNOCs and other oil and gas activities in the region. The soldiers involved in military operations torture, rape, kill and scare people and destroy properties without any fear of accountability as they are backed by the government for their actions (AI, 2005). In addition to this, the affected population is not provided with any sort of relief or treatment from the government to heal and recover from injuries induced by militants. Amnesty International has urged Nigerian authorities to transparently report the causes, impacts and outcomes of military operations against locals in targeted regions and publicly publish these findings (AI, 2005).

3.2.7. Unemployment and Crimes

Fishing and farming were the original source of income for NDR locals. The destruction of aquatic health and agricultural health due to oil spills and gas flaring has led to increased poverty and unemployment in the community (Bodo and David, 2018). A majority of youngsters in NDR are indulging in illegal activities such as armed robbery, sabotaging pipelines, stealing oil, prostitution, kills and kidnapping workers to meet their financial expenses (Bodo, 2019). An unfortunate aspect of this trend is that these are the same people who wanted to earn respectably through farming and fishing but lost their source of income due to the misconduct of their government (Bodo 2019, 2018). These criminal activities are providing significant financial advantages to locals, due to which it is difficult to assume that the young generation of NDR will likely switch to other sources of income that are not criminal in nature (Gimah and Bodo,

2019). The illegal bunkering of oil has detrimental environmental impacts, but the people involved in this process are not aware enough to realise the adverse impacts of their activities on their own future (Gimah and Bodo, 2019b). The Nigerian authorities have reported that billions of naira have been spent by oil authorities and governments until now to recover kidnapped workers and authoritative figures. Even the military that is sent to recover the victims is mostly involved with kidnappers to divide financial returns (Bodo, 2019; Okolie-Osemene, 2015).

3.2.8. The Correlation of Oil and Corruption

Corruption is considered to be a major cause of the adverse impacts of oil and gas businesses in NDR. Petroleum states are usually believed to have higher corruption rates because authoritative figures are usually aware of the involvement of MNOCs in ethical misconduct, but they refuse to take any connection because of their personal goals. The leadership of MOSOP (Movement for the survival of the Ogoni population) is believed to be involved in corruption and creating conflicts within communities to maximise its gains and maintain the conflicting state of regions. The SPDC is accused of initiating conflicts and crises within the community. It was also accused of maintaining internal dynamics with four Ogoni leaders to maintain the conflicting position of the state (Bodo, 2018). However, these leaders were killed by the mob because of their alleged involvement in the killing of Ken Saro Wiwa and other members of the community movement (Bodo, 2019). There is a common assumption in Nigeria that the leadership has internally divided financial gains obtained through the activities of MNOCs in the region, which has led to increased poverty in oil-producing communities (Bodo and David, 2018). The decline of the social, environmental and economic state of NDR is also attributed to the misconduct of the leadership (Bodo, 2019).

The Department of Petroleum Resources (DPR) was established in the 1950s to combine efforts with the NNPC and Petroleum Resources ministry to ensure that oil companies involved in both downstream and upstream operations in Nigeria are ethically performing their duties. However, the DPR, Petroleum Ministry and NNPC were all involved in a massive scandal of a complicated oil bloc reserve contract on an offshore region of NDR (Akinbajo, 2012). The scale revealed that Agip and Shell paid around \$1,092,040,000B to achieve the oil bloc reserve that contained around nine billion crude oil reserves by involving the DPR, Petroleum Ministry and NNPC in their operation (Hollingsworth, 2016; Akinbajo, 2012). The DPR director approved the allocation of oil reserve knowledge as Malabu OPL 245 on behalf of the Petroleum Resources Ministry, who then allocated the license of the field to a corporation without any

license or sign of the deal for a cost of \$20 million. The NNPC was also involved. They were in charge of the deal and acquired their interests from this fraudulent deal (Akinbajo, 2012).

According to a report by the London Evening Standard, the Malabu oil block was allocated to the Petroleum Resources Ministry of Nigeria, which gave the license to Shell and Agip to conduct their discovery and production operations in the region in 2011. The findings also revealed that Shell and Agip paid \$208M to the Nigerian government in the name of administrative change, and around \$1B was given to Malabu and 5 other accounts in offshore territories in different locations, including Switzerland and London (Hollingsworth, 2016). The anti-corruption protestors raised their voice against this corruption in the British court, claiming that the \$1b that the Nigerian government acquired for its personal interests could have resolved more than 80% of the problems surrounding the health industry of the country. The debate raised to the point where the \$85 million paid in the Malabu deal became a subject of legal conflict in the country (Hollingsworth, 2016). The real enemy of the growth and development of Nigeria is corruption, due to which the local population is dying of hunger, third and poverty, whereas the authorities are gaining selfish gains from internal deals at the cost of the national land.

3.2.9. Impacts on Education

The impact of education reflects the overall socioeconomic challenges of NDR. The school dropout has significantly increased in recent years because of a lack of resources, awareness and education among people. Schools lack good infrastructure, and information and communication technology (ICT) setups are also non-existent, which are crucial for preparing the youth for future technological operations. In addition to this, the availability of qualified staff is also a challenge in Nigerian schools. The male population is not serious about studies as they seek solutions to gain quick money instead of going to school and obtaining some real-world information (Jike, 2004). Students who go to school have to walk for miles, which is another barrier to education. Most of the educational institutes are not fulfilling the objectives of standard education; there are no specific programs to regulate and manage the curriculum, and the institutes also lack awareness of measures to improve the involvement of students in academic procedures (Ololube et al., 2013). The high percentage of poverty is having a negative influence on the education sector because people are not able to afford the educational expenses of their children (Ololube et al., 2013).

The education system has been jeopardised over the years due to various elements. Firstly, parents are not able to meet the expenses for education including the purchase of books, uniforms and admission to

a good school. In most cases, parents are not even aware of the importance of education for their children. Some children have even started to earn and support their families instead of pursuing their education to meet their financial demands. The activities of oil and gas companies are to be blamed for the inability of parents to afford education for their children because unsustainable and unethical business operations have reduced the fertility and health of the natural environment. However, some oil companies like NDDC are also indulging in philanthropic activities by offering scholarships to students (World Bank, 2003). However, these activities are not enough because still a large percentage of the population either dropped out or the ones that quit education after primary years.

3.2.10. Impacts on Fishing

The activities of MNOCs in NDR are attributed to a decline in the average income of fishers in the region. Oil spills contaminate the natural water and become a reason for the death of fish. The oil spills that are caused by ineffective transport and transfer of oil, sabotaging of oil pipelines and accidental cases reduce the quality of water, which makes it difficult for the fish to survive and function (Osugwu and Olaifa, 2018). Consequently, fishermen either obtain very few fish or they have to resort to other areas to find fish and other sea species where the water is not as contaminated. Oil spills lead to the formation of a layer of oil on the water's surface, which impacts the quality of water for the fish and leads to the death of a large number of aquatic species (Ojakorotu, 2009). Gas flaring also contaminates the water, making it poisonous for the sea life. Due to this, fishermen are forced to seek fish in contaminated water, which anyway leaves them with very few catches that are often not healthy enough for consumption. Or the fishermen have to seek other alternatives to manage their expenses (Omohimoria et al., 2014). The massive oil spill in 1983 in Oshika is an example of the devastating impact of oil on aquatic life because a large number of fish, crabs and other sea species died due to the spill (Bayode et al., 2011).

The activities of oil and gas companies are impacting aquatic life and fishing fields in various ways. The seismic activity that is performed to explore hydrocarbons disrupts the ecosystem and creates tension for the first. The sound of seismic operations disturbs sea life, due to which fish leave that area, but it leads to the destruction of larvae (Ojakorotu, 2009). Fishermen have lost fishing ground due to the unavailability of fish and poor condition of water that is not effective enough to perform fishing operations. Oil spills and gas flaring have contaminated creeks, rivers and swamps and led to the death of sea life and loss of fishing space for fishermen (Kadafa, 2012c). The loss of fishing grounds is also attributed to quarrying. Companies and industries in NDR have been involved in sand mining to use fine sand for their locations

and premises. However, these activities have destroyed the water and underwater resources that are crucial for the survival and growth of sea life (UNDP, 2006). The oil spills and gas flaring not only destroy water and sea life but also impact the availability of fishing tools, due to which fishermen are left with no sources to continue fishing operations. The impact of oil and gas activities on fishing fields has led to increased unemployment and financial challenges for fishermen in NDR (Bayode et al., 2011).

Water pollution has forced fishermen to abandon their resources for fishing and find alternate sources of income to feed their families (Chijioke et al., 2018). Some fishermen have also tried to explore the idea of fish farming, but the environmental conditions of NDR have been destroyed to the point of no return as the water is not even suitable for this business, which has further led to financial loss to these people (UNEP, 2011a). Some other factors, such as gas flaring, oil well blowout, and ineffective waste management practices of oil and gas companies, have also contributed to the poor growth of the fishing business (Osugwu and Olaifa, 2018). Fishermen who are already surviving on very limited resources spend thousands to purchase a fishing net (Amnesty International, 2013). However, oil spills damage fishing equipment and put an end to the income of fishers by adding financial constraints on the ability of fishermen to purchase other equipment and continue their operations. The companies involved in the oil spill process do not even compensate fishermen for the loss of equipment, which is another aspect that needs to be administered to promote fishing in Niger Delta Region (World Bank, 2001). Other than traditional fisheries, some fishermen also use the aquaculture process by harvesting and selling fish raised in small ponds. However, a small oil spill in the pond can destroy water health and make it toxic for the fish (HRW, 1999). The development of canals has also had a negative impact on the availability of fishing grounds for fishermen (Amnesty International, 2013). People have often lost their entire savings and investments due to the ineffective operations of MNOCS.

3.2.11. Impacts on Farming

The population of NDR relied on farming for decades for their income and food production. Some of the most planted crops in the area are oil palm, cocoa, maize and cashew. However, the farming industry has been exposed to massive destruction since the discovery of a large quantity of crude oil in the NDR in 1956 (Ebegbulem et al., 2013a). Since the time when MNOCS stepped on the land of NDR to now, the local agricultural land has only faced destruction due to the unethical and unsustainable activities of corporations that led to oil spills and gas flaring in the region (Ahmadu and Egbodion, 2013). These activities have reduced the fertility of the soil and also limited the availability of clean water to manage

crop health (UNEP, 2011a). The impact of MNOC operations emerged on the fertile land when acid rains occur due to gas flaring or oil waste disposed of irresponsibly, leading it to fertile agricultural land. In addition to this, MNOCs also delay the clean-up process, due to which the impacts become further prominent on the farming land. According to Ibaba (2011), oil discovery was supposed to be beneficial for NDR, but it turned into a disaster because of its negative impacts on the farming and fishing markets, which are the key sources of income for the local population.

Gas flaring is another environmental problem that is impacting the farming industry. Gas flaring generates heat that kills fertile crops and vegetables and often has permanent impacts on the fertility of the land (Omohimoria et al., 2014). MNOCs have impacted the farming industry by increasing air temperatures that are not suitable for the growth of crops. Despite acknowledging that farming is a key source of income for a majority of residents in NDR, the MNOCs have not stopped their involvement in activities that are determinantal for the farming land. In fact, these companies have directly or indirectly pushed farmers to reduce the size of farming land. The oil spills by MNOCs force farmers to reduce the size of land because spills destroy the fertility of the land and reduce its capability to generate fruits, vegetables and other products that are essential for the income of farmers (Dung et al., 2008). According to Ahmadu and Egbodion (2013), the overall productivity and income from farming have also reduced over the years because farmers are forced to utilise smaller land, which generates a lesser quantity of products to manage their expenses. Due to this reason, farming has also become an unattractive option for youngsters in Nigeria. The findings of Ahmadu and Egbodion (2013c) showed that the average age of farmers in NDR is around 47 to 48 years. The reduced ability of the farming profession to generate financial gains is resulting in the declining interest of youngsters in this field. In this context, Ahmadu and Egbodion (2013) further identified that the impacts of oil spills on cassava farms are still observed by local farmers. Farmers were to reduce land size and perform with very limited resources because the Nigerian government has even failed to provide advanced machinery and tools to improve the efficiency of farmers and reduce their workload. The reduced growth of the agriculture industry is impacting the future of the market because more and more youngsters are losing their interest in the field, which is an even greater threat to the future of the farming market (Inoni et al., 2006; Asoya 2010).

A lack of support from the government and limited income of farmers coupled with unsustainable operations of multinational oil companies has only resulted in the deterioration of the natural environment and agricultural facilities in the Niger delta region. The percentage of rainfall variation has increased, which has also increased the probability of floods or droughts, with detrimental impacts of

both factors on the farming land. Farmers have no resources to support and protect their land from environmental challenges that pose a threat to their crops (Chisanga and Hamazakaza, 2008). The reduced outcomes of farming are emerging as a primary reason for the migration of farmers from rural to urban areas in search of sufficient financial opportunities to feed their families. Farmers are indulging in risk-based analysis to make their immigration decisions by analysing the potential growth of land, their financial state and support from the government to determine the most suitable route for future (Vigh, 2009: 420). The outcomes of farming are dependent on various factors, including the fertility of the land, availability of sunlight, water quality, percentage of rain and overall environment in which the crop is going to survive (Omokaro et al., 2003). Oil spills alone cannot be attributed to a decline in the farming industry of NDR. There are various factors that make a combined impact on the growth of agricultural facilities. For example, MNOCs have dumped their waste into agricultural land or near water streams, which have eventually ended up on fertile land. Likewise, some companies dump dirty water directly into freshwater streams, which impacts the quality of water for marine life and agricultural land. The overexposure to oxygen and reduced sunlight have also affected the growth of the farming market in Nigeria. In addition to this, gas flaring has raised temperature, which has led to increasing cases of crop burning in NDR (Amnesty International, 2015).

3.2.12. Oil and Its Links to Forced Resettlements and Displacements

The present study is based on the assumption that OED has led to an increase in displacement of the local population of south-south Nigeria. The internal displacement in NDR is attributed to various factors. For instance, the devastation of the natural climate that has become unhealthy for people, along with air, water and noise pollution, which is further detrimental to people, is a major cause of migration. Then farming and fishing, the key sources of local earning, are threatened by the declining environmental conditions due to unsustainable operations of MNOCs in the area. The financial crisis and unheard complaints of locals have led to the development of aggressive protests from locals against the government and MNOCs. The local atmosphere is not safe anymore because people are fighting for limited resources, and the government has also taken military action, which has led to detention, killing, rapes and humiliation of the population. According to Obi (2010), ignorance towards the concerns of the local population has become a key concern for the displacement of NDR residents. According to Akpomuvie (2011), government alliances with MNOCs have resulted in the limited involvement of the Nigerian government in unethical operations of oil and gas businesses in the region. In this context, Vanclay (2017) also mentioned that governments often ignore international standards when internal

displacements occur due to different projects and activities. Nigerians have faced both physical and occupational displacement due to the activities of MNOCs in the region. Gill et al. (2016) have attributed oil spills as a major cause behind the declining physiological health of people and their exposure to abnormal environmental conditions. Concerning the displacement of the population, Terminski (2013) stated that displacement is caused by the activities of oil and gas companies in oil-rich regions because the companies often form alliances with local authorities but ignore the concerns of the population that arise due to their operations. People are forced to resettle in another place and move from their hometown due to external events such as when resources are limited, and it is difficult for the population to survive in such circumstances (Kumar, 2018). The same was the case for NDR residents who lost their source of income due to unsustainable operations of MNOCs and ignorance of the local and national government (Kadafa, 2012). Lyall (2017) has mentioned that government-led projects have primarily focused on the migration of people without their consent and will throughout the 20th century. Sadly, these activities have continued in today's time as well due to the involvement of governments in urban development projects and the promotion of agricultural businesses to obtain financial gains. This practice has become common among governments in almost all countries across the globe. Concerning this, Carnea (2015) mentioned that oil extraction has damaged the natural environment by destroying agricultural land, impacting the fertility of crops, declining water quality and limiting the growth of fishermen. People end up losing their source of income and homes when they are forced to migrate from one location to another.

3.2.13. Politicizing of Environmental Issues

The current environmental state of NDR is now visible to almost every layman out there. The negative impacts of MNOC activities are visible in the pollution of water, land and air resources (Eromosele, 1998; Orubu et al., 2004; Onosode, 2003; NDES, 1997; Bodo, 2018; Famuyiwa, 1998). At every election, representatives make hundreds of promises to the local population to improve the environment through proper cleanup. However, year after year, the reality of these promises has emerged as only empty words with no practical implications for the population (Bodo, 2018). The environmental conditions of Nigeria have only been degraded over the years despite the apparent efforts and promises of the government. The reality of the Nigerian government became more prominent when the UNEP conducted a thorough analysis of NDR and suggested the government immediately start cleanup operations in the region because the improvement in the natural habitat will require at least 30 years of consecutive operations (Bodo, 2019). However, the same government that invited the UNEP to analyse the area did not show any

interest towards the immediate cleanup of Niger Delta region, which is a crucial requirement for the long-term health and stability of the region (Bodo and Ukpong, 2018; UNEP, 2011).

3.2.14. Health Impacts of Oil Spillage

Hydrocarbon spills are extremely dangerous for human health. Hence, it is important for all involved workers, including the cleaning crew and emergency staff, as well as the local population, to avoid direct contact with areas exposed to hydrocarbon spills in the water (Sayed et al., 2021). Petroleum hydrocarbon can be contacted through direct touch, ingestion or breathing in the vulnerable zone (Zhang et al., 2019). Contact with hydrocarbons can lead to the development of cancer cells among the target people (Altomare et al., 2021). Toxic components such as polycyclic aromatic hydrocarbons, radioactive elements, trace metals and pyrene lead to the development of cancer. These elements are consumed through contaminated crops or water (Bashir, 2021). The environmental issues in NDR have led to an increased percentage of these chemicals in the region and increased health problems for the population (UNEP, 2011). The concentration levels in the water of Ogoniland are 900 times higher than the specific limit of World Health Organisation (Adekola et al., 2017). The acidic rains and the presence of poisonous chemicals in water have become detrimental to the health and wellbeing of the local population (Zabbey and Olsson, 2017).

The production and discovery of crude oil comprise various toxic chemicals that are detrimental to human health (Zhang et al., 2019; Ferguson et al., 2020). Different levels of TPH compounds generate different impacts on the body's health. The TPH compounds comprise small molecules like Xylene, toluene and benzene that damage the nervous system of humans (Sayed et al., 2021). These chemicals can even cause death if an individual is exposed to a higher amount. Concerning the health impacts of Nigeria, barium was found in significant quantity in the groundwater; the identified percentage of barium was way higher than the one that is permitted by WHO (Nwankwoala et al., 2016; WHO, 2011). Higher levels of barium in groundwater are associated with waste caused by drilling activities and stone rock erosion that is drained from the surface to groundwater. The consumption of barium-infused water generates various symptoms, including vomiting, diarrhoea, blood tension, muscle ache, breathing problems, gastrointestinal cramps and feelings of numbness in the face (Zabbey and Olsson, 2017).

Key Impacts of Gas Flaring

Climate change refers to the changes in the average climate conditions that lead to statistical variables in the average climate state for an indefinite period (IPCC, 2013). The adverse impacts of climate change have become prominent on the environmental conditions and overall health of communities in various regions. The administration of climate change requires regulatory authorities and organisations to monitor the adverse environmental impacts of petroleum operations for the sustainable development of a region (Chinedu and Chukwuemeka, 2018; Ogunniran, 2018). A majority of host communities of oil and gas companies have become more vulnerable to the adverse environmental impacts of the exploration and discovery of petroleum resources (Ordinioha and Brisibe, 2013; Adejoh, 2014; Anejionu et al., 2015; Zabbey et al., 2017; Sam et al., 2017a-b). The World Bank report has suggested that gas flare accounts for the wastage of around 110 billion CM of gas every year. Previous studies have highlighted significant negative impacts of gas flaring and venting on ecological health and the development of greenhouse emissions. This problem is more visible in underdeveloped economies like Nigeria, where ineffective management of gas flaring has contributed to the degradation of the natural environment of the nature, which is visible in highly acidic rains in the NDR (Ismail and Umukoro, 2012; Aregbe, 2017).

Climate change is now recognised as a global concern because of its adverse impacts on the global environment and its potential to increase the vulnerability of the global population to health hazards. Climate change is attributed to human activities that have led to the destruction of the ozone layer over the years by releasing GHG emissions and generating carbon footprints (Ukhurebor and Abiodun, 2018; Ogunniran, 2018; Ado et al., 2019; Mucheye et al., 2020). The petroleum industry is considered to be a primary contributor to environmental degradation due to the adverse environmental impacts of the exploration and production of oil and gas resources (IPCC, 2014; IPCC, 2013). In this context, developing countries like Nigeria and their specific regions like NDR have become more vulnerable to extreme negative impacts of climate change, such as food shortage and destruction of agricultural land caused by the activities of MNOCs in the region (Adejuwon, 2012; Aliabad et al., 2019; Shiru et al., 2019). However, these impacts are just the beginning of a more threatening future, which climate change can generate and lead to destruction of fertile land and natural resources (; Amadi, 2014; Amadi et al., 2014; Tawari-Fufeyin et al., 2015; FOA, 2017; Oluwaseyi, 2017; Ogunniran, 2018; Matemilola et al., 2019; Hassan et al., 2020a-c).

Previous studies have indicated a change in the natural climate of Nigeria over the years (Matemilola et al., 2019; Hassan et al., 2020a-c; Akande et al., 2017). The change is visible in increased temperatures, higher sea levels, flooding, drought, desertification, loss of biodiversity and acidic rainfall in the region

(Enete, 2014; Ebele and Emodi, 2016; Elum and Momodu, 2017; Haider, 2019; Matemilola, 2019; Ideki and Weli, 2019; Ukhurebor et al., 2020). The problems arising due to climate change in Nigeria are observed in different zones (Akande et al., 2017). The rainfall has reduced in the northern side, whereas the percentage of annual rains has significantly improved in the southern part of Nigeria (Enete, 2014).

3.2.15. Institutional and Regulatory Failure in Oil and Gas Sector in Nigeria

The outcomes of the petroleum industry often generate confusion among economies due to their contribution to financial growth but potential impacts on the environmental and sustainability of the host region. The debate around the regulatory measures and environmental impacts of MNOCs in Nigeria has obtained the attention of researchers and experts from across the globe because of the inability of the Nigerian government to regulate the operations of MNOCs and the ignorance of environmental laws and policies by the same corporation (Elenwo and Aksnkali, 2014). In addition to this, the socioeconomic development in Nigeria, especially NDR, is also not enough to enable the population to determine the consequences of their activities, such as sabotaging oil pipelines and the overall operations of MNOCs on the sustainability of their homeland. Nonetheless, it is important to manage the potential risks through relevant regulations within the sustainable framework of the region and management of operations of oil and gas activities to minimise environmental threats for the future (Zuofa and Ochieng, 2014).

It is also important to understand that continuous environmental issues in the NDR are pointing towards the failure of regulatory structures and policies that are being imposed on MNOCs in the region. Environmental issues can be attributed to several reasons, including improper law enforcement and ineffective management of fertile land, which makes it more vulnerable to unsustainable operations of MNOCs. In addition to this, the concentration of MNOCs near housing and fertile lands also increases the vulnerability of these areas to the negative impacts of organisational activities. However, the concentration is attributed to the failure of the government, which allocates fertile land for business operations despite the reliance of the local population on this land for their food and survival. Nigeria provides a horrible image of regulatory failure in managing and eliminating gas flaring in the region. As per the estimates of the World Bank (2021), Nigeria is among the 7 leading countries in terms of ineffective management of gas flaring. The analysis further revealed around 18% of the total gas produced in Nigeria is wasted through gas flaring. Nigeria has also faced financial loss by losing around \$1.32 billion each day due to gas flaring (Akinpelu, 2020). The Nigerian government has lost valuable natural gas that can be used to fulfil various energy requirements including heating, cooking, light and commercial operations of

the region. In a country where more than 50% of the population is dealing with electricity deficiency, the waste of natural gas, which can act as a key source of energy, indicates the failure of Nigerian authorities (Cable News, 2021).

Regulatory authorities and law enforcement entities have established various laws and policies to regulate the activities of oil and gas companies and control the adverse environmental impacts of their operations in countries rich in oil and gas resources. However, gas flaring is still a pressing concern for a majority of these countries, which indicates the inadequacy of policies and laws to control environmental impacts and the inability of governments to strictly monitor the adverse consequences of oil and gas companies. Despite the restrictions and policies for net zero emissions in the MEA region, gas flaring has only increased due to ineffective penalties, missed deadlines, inefficient policies and a lack of transparency in organisational operations in the area (Carpenter, 2020; UNESCW, 2020). For example, the Associated Gas Reinjection Act was introduced in Nigeria in 1979. The act set a deadline of 1st January 1984 to mitigate all gas flaring activities. However, gas flaring is still a pressing issue in Nigeria 30 years after the establishment of this act (Olujobi and Olujobi, 2020). Corrupt practices, ineffective integration of relevant laws, fraud and internal alliances between the oil and gas companies and regulatory authorities are the primary reasons behind the missed deadline for the act implementation and increased gas flaring in the region. Corruption is the most important issue that needs to be addressed to mitigate gas flaring in Nigeria (Everett et al., 2007). According to Aklin et al. (2014), corruption has reduced the ability of authorities to hold MNOCs accountable for their actions and ensure the implementation of environmental policies in the area.

Ineffective energy policies and regulations on controlling gas flaring have led to significant impacts on the society, environmental and natural climate. Gas flaring impacts the environment by emitting greenhouse gases and leaving carbon footprints that make long-term impact on the sustainability and growth of natural environment (Fawole et al., 2016). In addition to this, these activities also led to the waste of an important component known as natural gas that can be used for various purposes.

3.2.16. Impacts on Economy

The NDR is a hub for most of the activities of MNOCs, but the region is also the most poor region despite its attraction to foreign investors and businesses (Eghosa, 2015). The local population of NDR were mostly farmers and fishers before the area attracted the attention of MNOCs due to the discovery of oil resources. The MNOCs had promised the local population that their investment would improve the

financial state of the region through development projects and the availability of improved job opportunities for people. However, the locals have only suffered due to the invasion of their homeland by foreign businesses. The poverty rate has only increased in NDR in recent years because of the unethical conduct of MNOCs, ignorance of local and national government and insufficient skills and abilities of locals that could secure them good jobs in MNOCs and improve their financial condition. The local population does not even have the resources to obtain qualifications and relevant degrees in the petroleum field that could at least grant them a better future (Ebegblem et al., 2013). The environmental degradation and adverse impacts of business operations in the Bodo community have led to increased poverty in the region. In this context, Amnesty International (2011, 6) identified that the elderly population of NDR is seriously concerned about the future of the young generation because of continuously declining job opportunities and forced immigration to Port Harcourt, which is around 50km away from the community.

3.2.17. The Provision of Projects for Community Development

The MNOCs have been trying to strengthen their step-in host communities by indulging in community development programs. Most companies have shown their commitment to philanthropic activities to improve the financial status of local communities. However, these commitments have mainly been focused on charitable programs that, in one way or another, support the growth of these companies in local regions (Francis et al., 2011). For example, MNOCs have offered scholarships to students, but the courses on the scholarship list are mostly associated with the petroleum industry to prepare the future workforce for these companies (Ite, 2004).

Chevron developed the GMOU (Global Memoranda of Understanding) model in 2004 to modify traditional development strategies and improve the condition of civil society by reducing internal conflicts. GMOU focuses on a community-centered bottom-up development approach in the targeted region (Ristau and Knight, 2008). The GMOU is a written contract between an oil corporation and different community groups. The community groups are identified according to ethnic lines or as per the recommendations of the local government. Chevron aims to create coalitions between communities to combine efforts on the long-term goals of local communities and oil corporations (Reider and Haastrup, 2013). The organisation created 8 federations on ethnic-based that were controlled by the regional development council, which is a cluster of individuals from local communities, government, oil businesses and NGOs comprising around 850,000 individuals in 425 societies across 5 states (Reider and Haastrup, 2013). The program is also followed by other MNOCs (Okechukwu, 2014). For example, Shell announced 67 similar structures in

Nigeria in 2006 that comprised 1200 communities in the community development board. Following this structure, Shell management achieved 33 GMOU cluster contracts by 2012 (SCIN, 2013).

The GMOU programs have reported an investment of \$117 million in 2012 (SCIN, 2013). The project outcomes were reflected in economic growth, housing, health, transportation, electrification and education. The economic empowerment projects comprised investments in SMEs and micro-credited programs to reduce poverty in targeted societies (Idemudia, 2009). The integration of GMOU has led to a reduction in violence in the involved communities. Chevron reported a decline in community-generated interruptions from 81 to none from 1998 to 2012 through the program (Haastrup and Reider, 2013). Overall, the analysis also shows that the outcomes of GMOU are dependent on the aims and abilities of MNOCs to prioritise the interests of the local population and create a balanced in their financial gains and outcomes for locals to manage the adverse environmental and social impacts of their operations.

3.3. Conclusion

In conclusion, the oil crisis in NDR is a result of the ignorance of the government towards the illegal and unethical conduct of MNOCs in the region. The Nigerian government has been supporting MNOCs and other oil and gas entities in NDR despite the destructive impacts of their activities on the health and well-being of the local population and environment. The population has protested against the government and tried to raise their concerns, but they are subjected to punishments including harassment, burning of lands, killings, detention and torture by the government because the protests are viewed as a threat to national security. The Nigerian government also failed to implement UNEP recommendations for mitigating the environmental and social impacts of oil and gas businesses in the region. These activities have gradually led to an oil crisis because locals have also started to explore illegal routes such as sabotaging pipelines, stealing oil, and killing, torturing and kidnapping oil workers to obtain their rights and maintain their livelihood.

The crisis in Niger Delta Region can only be administered through the active involvement of the government in developing and imposing strict regulations against the unethical activities of MNOCs. The Nigerian government should withdraw itself from illegal alliances with oil and gas companies and authorities to objectively evaluate and mitigate the adverse impacts of their activities. In addition to this, large-scale campaigns must be launched to identify and address the concerns of the local population. Environmental awareness must be provided, and sustainable strategies must be implemented along with

the integration of UNEP suggestions to improve the conditions of NDR and other oil-rich resources in Nigeria.

4. Chapter Four: Stakeholder Engagement and Sustainable Development Issues in the Niger Delta Region of Nigeria

4.1. Introduction

The global socio-ecological system is threatened by the increasing social, economic and environmental crises that are generating barriers to the short and long-term sustainability of countries (Salas-Zapata et al., 2017; Robèrt et al., 2013; Ny et al., 2006). The problems are largely attributed to some of the key issues that include resource depletion and climate change (Rockström, 2009; DESA, 2013). Sustainable development is crucial to address these problems. The idea of sustainable growth was presented in 1987 by the Brundtland Commission to shift the focus of authorities and corporations on measures that can guarantee the development of regions without compromising on environmental health and stability (WCED, 1987). The idea of sustainable development has been the centre of interest of professionals, researchers and policymakers because of its diverse positive impacts on the development of society (Moldavanova, 2014). Sustainable development has proven to be effective for the short-medium-and-long-term development of communities (Linnenluecke et al., 2009; Lozano, 2008b). The ongoing global economic and environmental crisis is raising concerns about the impact of corporate operations and urging governments and business entities to actively incorporate and follow sustainable development measures (Baumgartner and Rauter, 2017; Hongwei and Lloyd, 2020; WBCSD, 2020).

According to Holliday et al. (2022, p.18), organisations comprise three society pillars by being divided into companies, PSOs (public sector organisations) and CSOs (civil society organisations). Organisations are an important element of modern society and play an important role in the growth and development of society and the environment (Jonker, 2000; Holliday et al., 2002; Epstein and Buhovac, 2010). Organisations contribute to society and the economy by playing a part in the national GDP and offering employment opportunities to the population (Senge et al., 2008). Hence, organisations contribute to different areas of life regardless of their sector and size. Despite the positive impacts, the organisations are also responsible for some of the detrimental consequences to social and environmental health (Stead and Stead, 1994; Epstein and Buhovac, 2010). Hence, sustainable development must be considered by all organisations operating in different industries to minimise their negative impacts and enhance the

positive outcomes of their activities for society (Lozano, 2018a; Melissa and Moratis, 2016; Schaltegger et al., 2020).

Sustainable development can be obtained through the application of a range of strategies within the organisational structure, primarily focusing on management approaches, including the environmental stability approach and technical strategies to reduce the adverse environmental impacts of business operations; these activities can comprise eco-efficient approach and life cycle analysis (Ingham and Havard, 2017; Gadenne et al., 2012). However, sustainable development must be integrated within the strategic approach of the organisation because efforts to align environmental sustainability with economic and social growth will shift the focus of the organisation from the primary cause of the environmental impacts of their activities (Schaltegger et al., 2016; Roome and Louche, 2016; Zollo et al., 2013). The application of sustainable approaches to organisational approach enables the application of more advanced and effective practices for the business (Schaltegger et al., 2016; Breuer et al., 2018; Stubbs and Cocklin, 2008). Organisations can integrate innovative strategies to achieve sustainability goals, but the strategies must be implemented with consideration to the requirements and expectations of stakeholders involved in the value chain (Gray and Purdy, 2018; Dyllick and Muff, 2016; Turan and Needy, 2013).

The consideration of stakeholder demands enable organisations to maximise the outcomes of sustainability practices to a large environmental context beyond the restrict boundaries of the organisation (Senge et al., 2008; Gray and Purdy, 2018; Fawcett et al., 2016). Stakeholder interaction is a popular concept within the academic literature because of its impact on the outcomes of sustainable organisational strategies. It is also among the key principles of sustainability that must be integrated within the organisation (Bäckstrand, 2006; Lozano, 2018a).

The role and significance of stakeholders in organisational growth and sustainability have been highlighted by research at various points in time. The stakeholder theory is among the most used theories in the academic literature within the context of sustainability and environmental impacts of business operations (Chang et al., 2017). The advocates of sustainability theory consider it as an effective approach to understanding the unique requirements of stakeholders and modifying the outcomes of sustainability approaches to maximise the benefits for the target population (Krisnawati et al., 2013; Schaltegger et al., 2019). In recent years, the perception and role of stakeholder theory in sustainability literature have shifted due to the increasing diversity and innovation in organisations (Kujala and Sachs, 2019). According to Samant and Sangle (2016), for the longest time, the literature has focused on risk management

strategies to enable organisations to meet the diverse requirements of stakeholders. However, modern - day scholars also argue that organisations must incorporate stakeholder interactions in their sustainability strategies to eliminate complex issues associated with sustainable growth (Sloan, 2009; le Roux and Pretorius, 2016; Lock and Seele, 2017). However, the literature on stakeholder interaction is still not sufficient despite the significant role of this process in administering controlling the ng sustainable growth of businesses (Garriga, 2014; Freudenreich et al., 2019; Matos and Silvestre, 2013).

4.2. Stakeholder Theory

The Stanford Research Institute presented the idea of a 'stakeholder' in 1963. However, the term obtained global attention through the strategic stakeholder management project by Freemans in 1984 (Pedrini and Ferri, 2019; Freeman, 1984). Freeman (1984) challenged the idea of shareholder theory value through the stakeholder theory and suggested that the growth and survival of an organisation are dependent on the ability of its management to meet the expectations of organisational stakeholders. The concept suggests the association of value creation with both transactional and relational demands because it reflects the ability of organisations to manage their interactions with stakeholders (Freeman and Moutchnik, 2013; Freeman et al., 2007). Freeman (1984) has defined a stakeholder as a group or an individual that is directly or indirectly affected by organisational activities. The importance of stakeholders and their influence on organisational activities has been explored by various researchers in the past few years (Miles, 2017). The continuous assessment and analysis of the stakeholder concept have also led to the development of multiple definitions surrounding the concept of stakeholders (Pedrini and Ferri, 2019; Mainardes et al., 2011). However, the definition of a stakeholder by Freeman (1984) is still the most used definition in the literature and organisational assessment (Kivits, 2011).

The stakeholder concept is mostly explored in the strategic, sustainability and organisational literature due to its relevance to the growth and development of businesses (Clevenger *et al.*, 2019; Rodriguez-Gomez *et al.*, 2020). Several studies have analysed the reasons behind the importance of stakeholders to businesses and explored ways through which stakeholders can maximise the outcomes of organisational strategic operations (Signori, 2017; Ranängen, 2015; Freeman, 2010). Stakeholders are divided into two groups of: internal and external stakeholders. Internal stakeholders comprise the management and workforce, and external stakeholders comprise competitors, suppliers and customers of a corporation (Bryson, 2004). Stakeholders are also divided into two groups of primary and secondary stakeholders based on their influence, relevance and impact on the overall growth of an organisation (Freeman *et al.*, 2007; Clarkson, 1995). The primary stakeholders are key contributors to value creation activities, and

these groups mostly comprise the employees, suppliers and customers of an organisation. Primary stakeholders are given the most importance by organisations due to their direct impact on organisational activities. On the other hand, secondary stakeholder groups including governments, competitors, universities and NGOs. These stakeholders are indirectly associated with the organisation and given comparatively less importance than primary stakeholders. However, organisations do consider the interests and the impact of their activities on secondary stakeholders in the formation of strategies (Clarkson, 1995). The supply chain literature has provided another category of stakeholders that comprises horizontal and vertical stakeholder groups. Vertical stakeholders include the suppliers and customers, whereas horizontal suppliers include the community, competitors and universities surrounding the organisation (Dania et al., 2016). The division of stakeholders into vertical and horizontal groups is also based on their relevance and impact on the organisation (Barratt, 2004; Kumar *et al.*, 2017). Organisations can define the priority stakeholder group by evaluating their impact and relevance to organisational growth and development (Doh and Quigley, 2014).

The stakeholder analysis model (STM) is proposed by scholars to strategic the concept of stakeholders for an organisation. The stakeholder analysis model is focused on different attributes of stakeholders, such as their influence, salience and interest (Mitchell *et al.*, 1997; Bryson, 2004). The stakeholder analysis models can assist organisations in managing key issues associated with stakeholder involvement and managing value creation activities considering the interest of diverse groups of associated stakeholders (Ranängen, 2015; Mainardes et al., 2011; Freeman, 2010). However, most STMs emphasise transactional relationships to balance the conflicting requirements of stakeholders with the growth needs of an organisation (Kujala and Korhonen, 2017). Concerning this, Myllykangas et al. (2010) identified that stakeholder salience differs and grows in the value creation process with time, which suggests that only attributes of stakeholders are not enough in the analysis of value creation procedures, and complementary details are also required to enhance the outcomes of stakeholder engagement. According to Myllykangas et al. (2010), organisations should pay more attention to the value creation process in the mapping and identification of stakeholders instead of emphasising the significance of stakeholders for the entire value creation process. The value creation literature suggests that the stakeholder interaction process of organisations should be based on mutual benefits that are available to both parties. Concerning this, Freeman et al. (2017) mentioned that the application of stakeholder theory in a practical aspect should be referred to as stakeholder engagement.

Freeman et al. (2017) presents the stakeholder engagement (SE) framework that includes different categories, including stakeholder relations, communication and interaction with stakeholders, learning with stakeholders and an integrative SE process. Freeman (2017) further suggested that organisations should shift their focus from communicating with stakeholders to communicating with stakeholders to accurately represent the concerns of their target population in their growth strategies. In this context, Greenwood (2007), Bellucci and Manetti (2018) and Torelli et al. (2020) mentioned that SE relates to organisational practices that are performed to ensure a positive involvement of stakeholders in business activities. Concerning this, Plaza-Úbeda et al. (2010, p. 419) presented the idea of stakeholder integration (SI) to describe the ability of an organisation to develop a positive collaborative dynamic with various stakeholders. SI has three dimensions, including the acquisition of information about stakeholders through the assessment of stakeholder attributes and their relevance to the organisation; the integration of an organisational approach for different levels of SI, which comprises efforts to consult, communicate and cooperate with stakeholders and reflection of adaptational approach to meet the expectations of stakeholders (Plaza-Úbeda *et al.*, 2010). Plaza-Úbeda et al. (2010) also mentioned that developing a wide range of organisational practices enables the integration of diverse stakeholder interactions and expectations in the management activities of an organisation.

The introduction has defined three key terms relevant to the present study. These terms including stakeholder management (SM), stakeholder engagement (SE) and stakeholder integration (SI). These are like umbrella terms to define different ways of measuring, analysing and assessing stakeholders (Sachs et al., 2017; Bellucci and Manetti, 2018). The aim of this research is to analyse how different organisational interactions with stakeholders support their sustainability objectives. Stakeholder interaction is used in this research as a term to define the relationship between an organisation and its stakeholders to resolve problems and address potential confusion with the terminology.

4.3. Stakeholder Engagement

SE can significantly contribute to developing an understanding of the importance of sustainability to business growth and value creation practices and the assessment of the feasibility of these activities for an organisation (Partridge et al., 2005, 10). The SE concept highlights the importance of a balanced and inclusive engagement strategy for organisations (Crane and Amaeshi, 2006, 249). Greenwood (2007, 317) has described SE as a practice that organisations perform to positively involve stakeholders in business activities during the execution of growth strategies. As per Partridge et al. (2005, 13), SE highlights a range

of organisational efforts that are focused on comprehending and including stakeholders in strategies and decision-making processes.

Previous studies, such as those published by Cumming et al. (2021) and Colvin et al. (2020), have acknowledged the significance of Stakeholder engagement. Concerning this, Baldwin (2019) has highlighted the importance of increasing public involvement and fostering improved communication within the communication to obtain mutual objectives that have been conceptualised to improve the perception of the public and their influence on policy decisions. Effective SE provides a model for organisations to create informed policies and conflict resolution strategies. According to previous studies, stakeholder involvement is only beneficial for the organisation when stakeholders are influenced by organisational activities, and they are also in the position to positively impact strategic outcomes for organisations (Gregory et al., 2020; Boaventura et al., 2020).

According to Romenti (2010), increased SE in the policymaking process can enhance the legitimacy of this process and allow organisations to obtain social licenses to perform their operations. The stakeholder perception of policy decisions is formed by the implementation of strategies that allow organisations to determine relevant stakeholder groups for different policies. A direct relationship between stakeholders with the implemented policies maximises the outcomes of the policy for both the organisation and its stakeholders (Crow et al., 2015). Policymakers can design policies to address issues that are impacting the current environment, such as the activities of oil and gas companies, by encouraging transparency in policies and ensuring the involvement of the right and most relevant stakeholder groups in the policy-making process (Baldwin, 2019; Bryson et al., 2013). Organisations can obtain their tactical and strategic objectives by ensuring the engagement of relevant stakeholder groups in the collection and analysis of required data. According to Partridge et al. (2005), an organisation's ability to manage the threats and opportunities of the external environment can be improved by identifying trends that can influence its activities and obtaining the trust of relevant stakeholder groups.

4.4. Studies on Stakeholder Engagement

The idea of stakeholder engagement was presented in the 1990s. However, it gained popularity in the stakeholder academic literature at the start of the 21st century (R. K. Mitchell et al., 1997; Android et al., 2002; Svendsen, 1998). The concept of SE was introduced to shift the focus of the organisation on managing stakeholders and establish the difference in strategies that are applied for the shareholders and stakeholders of an organisation (Andriof et al., 2002, p. 9). Concerning this, Aakhus and Bzdak (2015),

Kujala and Sachs (2019) and J. R. Mitchell et al. (2022) defined SE as various procedures and practices implemented by organisations to involve their stakeholders in developing approaches.

The research on stakeholder engagement in various fields, including management, strategy, business and societal growth, has incorporated the stakeholder theory to depict strategies that companies can use to engage their stakeholders (Lindgreen and Swaen, 2010; Henisz et al., 2014; Noland and Phillips, 2010). The application of stakeholder theory enables organisations to focus on stakeholders in strategic thinking and position stakeholder relationships at the centre of their analysis (Freeman, 1984). The supporters of stakeholder theory have evaluated the correlation and dynamics of organisations with their stakeholders (Bridoux and Stoelhorst, 2016, 2020; Harrison and Wicks, 2013; Bundy et al., 2018; Jones et al., 2018; R. K. Mitchell et al., 2015), this research also assume SE as a natural element of the stakeholder theory. The construct of SE has been used in various situations to explore different issues. An overlap of management, corporate and societal dimensions has been found in the stakeholder literature because of the diverse impacts of stakeholder theory on its external and internal environment (Kujala and Korhonen, 2017; J. R. Mitchell et al., 2022; O’Riordan and Fairbrass, 2014). Previous researchers have evaluated SE in various contexts, including the moral aspects (Noland and Phillips, 2010), legitimacy of organisational operations (Castelló et al., 2016; Beelitz and Merkl-Davies, 2012; Provasnek et al., 2018; Desai 2018; Scholz et al., 2019), deliberate democracy (Patzner et al., 2018; Miska et al. 2014) and a responsible approach to leadership (Goodman and Arenas, 2015; Dawkins, 2021; Passeti et al., 2019). The attention of recent literature has been shifted to the innovative aspect of SE and business (Alvarez and Sachs, 2021; Nair, 2020; Leonidou et al., 2020; Watson et al., 2020; Baltazar Herrera, 2016; Scuotto et al., 2020; Bendell and Huvaj, 2020; Chen and Liu, 2020). These areas have been evaluated under various contexts and dimensions with the SE literature.

While the literature on different fields and their relation to SE show various patterns of similarities, there are also some distinct aspects that need to be addressed. For example, the instrumental dimension of SE has found its relevance in the management literature. For instance, researchers have identified visible connections between SE and the financial performance of organisations (Cheng *et al.*, 2014; Gupta *et al.*, 2020; Henisz *et al.*, 2014; Jones *et al.*, 2018); this link is also identified in the social and business literature (Hasan *et al.*, 2018). On the other hand, the corporate and society academic literature has focused on SE in relationship to corporate social responsibility (CSR) and management of sustainable aspects of the business (O’Riordan and Fairbrass, 2014). In the accounting field, SE has gained significant importance, but most researchers have also linked SE with the stakeholder theory (O’Riordan and Fairbrass, 2014;

Manetti and Toccafondi, 2012; Reynolds and Yuthas, 2008). Some other researchers have also determined the role of SE in the accounting industry but without its association with the stakeholder theory (Boiral *et al.*, 2019; Böhling *et al.*, 2019; Morrison *et al.*, 2018). It indicates the diverse applications of the stakeholder engagement literature where different authors have assessed and identified its relevance in different fields.

For example, stakeholder engagement studies within the environmental policy and management literature have focused on the development of a practice-oriented strategy. Unlike other areas of literature that have focused on establishing the theoretical relevance of SE, the literature on environmental management has focused on providing an explanation of how and why stakeholder engagement impacts the organisation, development strategies and policy development process. However, the environment management literature has not provided a specific relation of SE with corporate and societal dimensions and mainly focused on determining the impact of SE on the local and international environment (Geaves and Penning-Rowell, 2016; Garard and Kowarsch, 2017). Reed and colleagues are considered to be the first few researchers who explored the relevance of stakeholder engagement in the context of environmental policies and management. The findings comprised a detailed analysis of influential stakeholder analysis typology for natural resource administration, a combination of stakeholder analysis methods in the stakeholder theory and within the policy analysis (Fraser *et al.*, 2006; Stringer *et al.*, 2006). The application of the participatory approach in natural resource management that the growth and enhancement of the involvement of stakeholders at each dimension of the project cycle. The subsequent literature on environmental policy and management has also considered the diverse dynamics of SE throughout different stages of a project and even after the completion of the project (Vogel and Henstra, 2015; Geaves and Penning-Rowell, 2016; Shackleton *et al.*, 2019; Novoa *et al.*, 2018). Studies on environmental policy and management have focused on different dynamics of the correlation between stakeholders and organisations to analyse the impact of stakeholders on sustainability and CSR operations (Kumar *et al.*, 2019; Dobele *et al.*, 2014) remediation procedures (Cundy *et al.*, 2013; Butler and Adamowski, 2015), climate change (Luís *et al.*, 2018; Vogel and Henstra, 2015), management of natural resources (Butler and Adamowski, 2015; Mease *et al.*, 2018). And participatory practices (O'Toole *et al.*, 2013; Lopez Rodriguez *et al.*, 2020; Reed *et al.*, 2013). However, the literature on environmental policies and management has also been criticised because of their focus on the involvement of human SE in the administration of environmental concerns because it impacts the ability of the organisation to understand complexities in the natural atmosphere (Waddock, 2011).

4.5. The Significance of Stakeholders in Sustainability Literature

Previous literature has identified that organisational sustainability and stakeholders are interconnected. The stakeholder theory is considered as a key component of the sustainability literature due to its role in the sustainable development of the environment (Doh and Quigley, 2014; Chang *et al.*, 2017; Hörisch *et al.*, 2014). However, modifications have been observed in the literature of organisation sustainability in relation to the implementation of stakeholder concepts, theory and their relevance to sustainability. The significance of stakeholders in the sustainability literature is presented in this section, along with an assessment of the relevant approach. The relevance of stakeholders in organisational sustainability was apparent even before Freeman (1984) presented this concept because organisational activities are, in one way or another, an influence on their strategic approach and outcomes of organisational initiatives. The connection of organisational sustainability with stakeholders can be identified with the earlier days, like back in the 1930s when organisations used to indulge in philanthropic activities to help local communities (Rodriguez-Gomez *et al.*, 2020). The philanthropic efforts reflected the responsibility of companies towards the local environment that was directly or indirectly affected by their operations (Rodriguez - Gomez *et al.*, 2020; Bansal and Song, 2017).

The emergence of corporate social responsibility in the 1950s further highlighted the implications of stakeholders on the sustainability initiatives of organisations (Chang *et al.*, 2017). The concept of businesses are servants of society was introduced by Bowen (1953) to highlight that businesses are responsible for the health and wellbeing of their external surroundings, and hence, they should carefully develop and implement strategies with consideration to the potential impacts of their operations on the society. However, some scholars also criticised the idea of CSR and suggested that businesses are only responsible for managing their economic responsibility and indulging in fair trading to achieve the desired revenues (Friedman, 1970). The opposers of CSR said that businesses are not accountable to their external environment as long as they are not violating any laws or regulations. Some researchers mentioned that stakeholder interaction was only facilitated by organisations to compensate for their adverse impacts on the environment. The perspective towards CSR was changed from the 1980s to 1990s with an increasing connection between stakeholder management, business performance and CSR operations (Lee, 2008). Concerning this, Samant and Sangle (2016) mentioned that organisational reputation and value increase with their involvement in philanthropic initiatives, consideration of stakeholder demands and integration of sustainable growth measures. The concept of corporate sustainability (CS) emerged at the start of the 21st century (Van Marrewijk and Werre, 2003; Dyllick and Hockerts, 2002). It was the time when

organisations began to see stakeholders as key contributors to their sustainable growth and essential for stable and long-term organisational growth (Freudenreich *et al.*, 2019).

The concept of CS (corporate sustainability) views organisations as a component of a larger system because it assumes that organisations survive through their interactions with other businesses and stakeholders (Williams *et al.*, 2017; Clevenger *et al.*, 2019). In relation to this, researchers also argued that organisations should not only focus on the management of stakeholders. Instead, they should also find routes to combine their efforts with stakeholders to determine mutual routes for the development of stakeholders and the growth of the business (le Roux and Pretorius, 2016; Rhodes *et al.*, 2014). From this perspective, stakeholder interactions and management are considered to be the primary drivers of sustainable business growth and value creation (Ranängen, 2017; Lane and Devin, 2018). This approach seems more neutral and balanced than the initial approaches to CSR (Plaza-Úbeda *et al.*, 2010; Noland and Phillips, 2010).

As per the findings of Chang *et al.* (2017) and Samant and Sangle (2016), the literature on stakeholders was focused on the ethical and social obligation of businesses and stakeholders' role was limited to their business engagement in philanthropic activities from 1950 to 60. In the 1970s, the focus shifted to corporate responsibilities and increased profits for shareholders; here, the role of stakeholders was associated with value inhibitors for organisations. Researchers started to view stakeholders within the light of strategic management from 1984-2004 and identified the role of stakeholders in mitigating risks, adding value to business and increasing business involvement in sustainable practices. Lastly, from 2004 to 2020, the literature was focused on the systematic thinking of stakeholders and considered their role in providing diverse opportunities to businesses (Samant and Sangle, 2016; Chang *et al.*, 2017)

The application of stakeholder theory in sustainable development allows organisations to ensure that stakeholders are aware of the importance and role of sustainability so they can mutually define objectives and strategies to achieve sustainability goals that are beneficial for the environment and for the business (Hörisch *et al.*, 2014). On the other hand, the concept of stakeholder management only focuses on strategies that organisations can implement to address the sustainability concerns of stakeholders. However, this approach is criticised because it does not consider the importance of incorporating stakeholders in sustainable organisational development (Clevenger *et al.*, 2019). According to Myllykangas *et al.* (2010) and Hall and Wagner (2012), organisations should carefully select relevant stakeholders that are important to resolve sustainability problems facing both the organisation and the society. Concerning this, Ranängen (2017) also mentioned that it is not necessary that organisations indulge primary

stakeholders in their sustainability goals because the identification of stakeholders based on their relevance is crucial for the success of sustainable development initiatives. This also contradicts the traditional view where only humans are considered as stakeholders and shifts the focus of organisations towards the natural environment and resources that can be threatened by their activities (Bansal, 2005; Vidal *et al.*, 2015).

Concerning this, various authors, including Lock and Seele (2017), demanded a shift in the definition of stakeholders and urged organisations to place sustainability at the centre of stakeholder initiatives to identify future stakeholders and their potential role and contribution to the sustainability activities of businesses. In this context, Gray and Purdy (2018) and Roloff (2008) also highlight the requirement of implementing a problem-centred strategy that focuses on a specific problem and associated activities along with its potential impacts and strategies for its potential resolution. Considering these findings, Schaltegger *et al.* (2019) suggested that all stakeholders who are directly or indirectly affected by sustainability activities must be considered by organisations in the preparation of a sustainable business approach. This approach will require the organisation to determine the expectations of stakeholders with a sustainability issue and also serve as the foundation for the improvement of stakeholder operations (Schaltegger *et al.*, 2019). Ahen and Zetting (2015) focused on the significance of stakeholders and suggested an alternative term called 'stake-players' to define the direct role of stakeholders in organisation approaches. Garriga (2014, p.491) also proposed a new definition of stakeholders by defining them as groups or individuals who play a role in the value-creation process of the organisation.

4.6. Stakeholder and Organisational Sustainability

Various researchers, including Montiel (2008), Chang *et al.* (2017) and Bansal and Song (2017), have identified differences and similarities in the concepts of CS and CSR. Bansal and Song (2017) identified that CSR primarily focuses on strategies that can allow businesses to achieve growth without compromising on environmental and social sustainability, whereas CS focuses on organisational activities that are focused on avoiding harm to the natural atmosphere of the business. Concerning this, researchers also mentioned that both concepts have led to increased debate on the environmental impacts of businesses, which provides a positive route for the future environment, society and the entire human population. The following thesis will rely on the concepts of Montiel (2008), who mentioned that CS and CSR are two different concepts that arise from different backgrounds but focus on similar objectives of promoting sustainable growth and incorporation of stakeholders in organisational operations.

However, a drawback of these approaches is that both corporate sustainability and corporate social responsibility focus on 'corporation' without explicit inclusion of other types of organisations. Concerning this, some authors like Freeman and Muthnik (2013) have recommended that the term 'corporate' be removed from CSR to ensure the incorporation of other organisations. But, Roman (2017) believes that the approach might still not be suitable for different types of business entities. These problems have led to the development and promotion of more holistic approaches that are recommended to companies with suggestions of the incorporation of large-scale operations that are relevant for diverse organisational structures, meet the requirements of different stakeholder groups and consider the social, environmental and ecological impacts of business activities (Rodríguez-Olalla and Avilés-Palacios, 2017; Lankoski, 2016). The following research will use 'organisational sustainability' as the key term to highlight measures that can be used by organisations to achieve sustainable growth (Lozano, 2018a). It is important to note that sustainability outcomes will not be similar to those related to socioeconomic impacts, but they will still enable organisations to consider the diverse interests of stakeholders and promote sustainable growth (Lozano, 2018a; Garde-Sanchez et al., 2018; Schaltegger *et al.*, 2019).

4.7. Integrating Stakeholder Engagement

The implementation of a stakeholder model for organisation sustainability must start with the assessment of the current model and strategic approach of an organisation (Sachs et al., 2017). Stakeholder interaction is an important part organisation model, which is why it is also crucial for corporations to accurately integrate the involvement of stakeholders by communicating sustainability plans and objectives in stakeholder management strategies (Turan and Needy, 2013; Kujala and Korhonen, 2017). Sachs et al. (2017) also mentioned that stakeholder involvement should not be facilitated by 'adding' stakeholders to an existing model; rather, the traditional setup must be transformed and evolved to implement diverse requirements of stakeholders from the sustainability operations of the organisation findings of Kujala and Korhonen (2017) presented contradictory results by suggesting that the value creation and interaction activities of stakeholders are mostly separated from the corporate model despite the close relationship of sustainability operations with business structure and strategy. The sustainability efforts that rely on stakeholder value creation but misalign with organisational structure and overall management approach will be destructive to the long-term performance and sustainability of the business. This is why Kujala and Korhonen (2017) suggested the implementation of stakeholder interactions and relationships into overall business management operations instead of only in sustainability activities. Tapaninaho and Kujala (2019b) have divided the current business approaches into

four categories that include focal corporate orientation from the perspective of economic gains, economic perspective with an orientation towards stakeholders, focal corporate orientation with diverse value perspectives and stakeholder orientation with diverse value perspectives. Categories one and two ignore either social or environmental values and only highlight the importance of sustainability. The third category considers sustainability but separates stakeholder efforts and value creation. However, the fourth category establishes the relationships with stakeholders, emphasises sustainability and value creation and promotes interaction with different stakeholder groups to mutually address sustainability problems (Tapaninaho and Kujala, 2019b).

Various scholars have also raised criticism of a lack of transparency between the concept of business model and other terms that include the vision, strategy and tactics of a corporation (Maucuer and Renaud, 2019; DaSilva and Trkman, 2014; Wirtz et al., 2016). A strategy describes the process of achieving short, medium and long-term organisational objectives; vision highlights the competitive position of a business and its diverse abilities to respond to opportunities available in the market (Wirtz et al., 2016; Rauter et al., 2017); and strategy refers to a pattern of choices that are reflected in the tactics that guide organisational activities (Richardson, 2008; Casadesus-Masanell and Ricart, 2010). Corporate models reflect the vision and strategic approach of organisations towards sustainability (Dahan *et al.*, 2010). However, the values and vision of an organisation can also be important in the design of the corporate model, which shows that corporate model and strategy can potentially be complementary in nature (Spieth *et al.*, 2016; Breuer and Lüdeke-Freund, 2017; Schaltegger *et al.*, 2012). Each organisation operates through a business model (Chesbrough, 2007) because every organisation has to decide how to perform business in a certain market (Casadesus-Masanell and Ricart, 2010).

Sustainable organisational strategies can only generate the desired social, economic and environmental impacts when they align with the organisational goals and requirements of the targeted stakeholder groups (Ashrafi *et al.*, 2019). Particularly, stakeholder interaction in the form of collaboration and involvement can improve the outcomes of sustainability operations of organisations and also lay the foundation for improved stakeholder-organisation dynamics that can guarantee the long-term success of a business (Kujala and Korhonen, 2017). Hence, organisations should incorporate the interactions and views of stakeholders into the strategic management procedures to ensure the achievement of desired outcomes (Kujala and Korhonen, 2017).

4.8. Nigerian Petroleum Industry

Nigeria is an African country local in the sub-Sahara side of the continent on an area of approximately 923,768 sq. km. The borders of Nigeria include Nigeria, Chad, Cameroon and the Benin Republic (CIA, 2018). Nigeria is home to more than 190 million people (CIA, 2018). It is one of the few countries in the world that are blessed with a vast range of natural resources, most prominent oil and gas resources that are occupied by some of the richest countries across the globe (U.S. Energy Information Administration (EIA), 2016). Nigeria is the most oil-rich country in Africa and one of the top ten oil and gas-rich countries in the world. Reports have even suggested the presence of around 3.2 billion barrels of oil barrels with around 5 trillion cf of natural gas, which will make Nigeria the biggest producer of oil globally (CIA, 2017). Oil and gas resources were discovered in Nigeria in 1956 by Shell-BP (Zeb-Obipi and Bagshaw, 2002:138). The oil and gas industry of Nigeria was dominated by MNCs until the 1990s, when indigenous corporates started to venture into the sector (KPMG, 2104).

There are around 36 integral states in Nigeria, and only 9 states in ND (Niger Delta) state of the country that provides onshore gas and oil reserve, whereas the offshore reserves of the country are dependent on the Bight of Benin, Gulf of Guinea and Bright of Bonny (NEITI 2013, 27). Nigeria reported the production of 2.5M crude oil barrels and 1 trillion cf of dry gas with an average of a day in 2011, with exports of around 2 billion crude oil barrels and natural gas of around 17.9 million mt (metric tons) in the same year. These exports made Nigeria the 5th biggest exporter of natural liquid gas globally (U.S. EIA, 2016). In addition to this, the NEITI (2013) mentioned that around 767,000 crude oil barrels (33%) were exported to the US from Nigeria on a regular basis, which made Nigeria the 4th largest supplier of crude oil to the US.

As per IMFE (2012), the economy of Nigeria is primarily dependent on the oil and gas sector, which accounts for almost 95% of the foreign exchange earnings of the country and around 75% of the overall income for the federal government and minimum 40% of the national GDP. As a result of this, the Nigerian government has implemented regulations and policies to attract foreign investments and increase the capacity of the industry.

4.9. Oil Extraction and CSR

The concept of CSR primarily highlights the responsibility of an organisation towards its social, economic and environmental duty and increases the involvement of businesses in sustainable operations instead of just project-seeking activities (Carroll, 2008; Dahlsrud, 2008). The benefits of CSR for business growth have

been highlighted by various studies in different contexts. The following study uses the stakeholder approach and social license to determine their role and relationship with the CSR strategies of businesses. A stakeholder is any individual who is directly or indirectly influenced by organisational operations (Freeman, 1984). As per the stakeholder theory, companies should be mindful of their conduct and ensure that stakeholders are not getting a negative influence on their revenue generational activities (Barney and Harrison, 2020; Theodoulidis *et al.*, 2017). It further highlights the importance of a mutually beneficial dynamic where both parties are able to obtain financial gains from the transaction (Bridoux and Vishwanathan, 2020; Freeman *et al.*, 2007; 2020). The concept relates to the current study because oil and gas companies make mixed impacts on their host environment. The MNOCs are known for the profitability of their operations and the financial impacts of their activities on host regions. However, the environmental impacts of oil and gas businesses are often ignored in development activities, which leads to adverse outcomes for local habitants who are the stakeholders of oil and gas companies in the host community.

Such environmental and socioeconomic upheaval generates grievances, tensions, and conflict that result in disruptions to company operations (Davis and Franks, 2014; Orta-Martínez and Finer, 2010). Thus, stakeholder engagement and management are critical for oil companies to address the gap between the material benefits they derive from extraction and the harm wrought on the lives and milieu of local communities because local communities are relevant stakeholders in oil extraction (Agudelo *et al.*, 2020; Henry *et al.*, 2016). The second perspective to consider in the oil extraction ecosystem is the local acceptance of oil company operations.

The United Nations proposed the concept of social license for companies functioning in indigenous communities to obtain permission from communities before initiating operations in their homeland (Wilburn and Wilburn, 2011). Hence, legal permission is not enough, and companies are expected to obtain permission from locals to ensure their acceptance of industrial operations in their region (Mohammed *et al.*, 2022a). According to Loe and Kelman (2016) and Wilburn and Wilburn (2011), companies should transparently communicate both the pros and cons of their investment, such as the development of local communities and potential environmental drawbacks in the region to ensure that locals are making an informed choice for business investment in their region. The concept of consent is specifically related to extractive industries like oil and gas companies because of the adverse impacts of these companies on the environmental and social status of hosting regions (Bezzola *et al.*, 2022; Dauda, 2022). This is also why oil corporations face higher social scrutiny, which highlights the importance of

social license for the smooth commencement of their activities in an area (Agudelo et al., 2020). Social license is also important for the approval from regulatory bodies for business expansion. Hence, oil and gas companies are required to involve local communities in the decision-making process and highlight the benefits along with future investments for the betterment of their areas to get consent from the local population (Ablo, 2020; Wilson, 2016; Mena *et al.*, 2020).

The adoption of CSR is largely motivated by the requirement of social license and integration of stakeholder theory in organisational activities. The application of CSR strategies allows companies to engage stakeholders, acquire social license and control potentially harmful impacts of their activities. CSR can act as a damage control measure for oil and gas companies by enabling companies to invest in strategies for the sustainable growth of the environment and society. For instance, companies can invest in advanced technologies and resources to improve the existing state of society, they can offer scholarships build schools and also improve transport structures to address some of the key concerns of local habitants (Henry *et al.*, 2016). In addition to this, CSR reports also indicate the transparency of businesses towards the environmental impacts of their activities (García-Rodríguez *et al.*, 2013; Mohammed *et al.*, 2022a). However, some researchers like Friedman (1970) have also opposed CSR by suggesting that a firm should only be responsible for the financial returns of its operations.

However, the supporters of CSR argue that it is a universal approach that covers almost all aspects of business operations by shifting the focus of a business towards its social responsibility while maintaining the economic progress of a corporation (Barnett, 2019; Idemudia, 2009). Supporters like Blowfield (2005) and Carroll and Shabana (2010) have responded to criticism of CSR by suggesting that it does not negate the economic outcomes for a business. Rather, it holds a business accountable for the social impacts of its activities that are made to obtain financial gains. There are economic as well as social and environmental gains that can be obtained through the implementation of CSR strategies (Carroll and Shabana, 2010). CSR is more important for oil and gas corporations because of the associated image of adverse social and environmental impacts on these companies. According to Barnett (2019), CSR can facilitate the growth of oil and gas companies by allowing them to consider the social impacts of their activities and implement sustainable initiatives to minimise the harmful environmental impacts of their activities on the local environment.

The supporters of CSR encourage this concept because it provides autonomy to businesses in controlling their impacts on the external environment (Cezne and Honke, 2022). The role of CSR has been evaluated

by researchers and has led to the formation of international standards to regulate the activities of MNCs operations in the oil and gas industry (Wettstein et al., 2019). The UN and OCED have developed a code of conduct that addresses various ethical concerns associated with business operations to shift the focus of international law on addressing these problems and minimise the involvement of corporations in unethical and unsustainable operations (Ruggie, 2007). The UN has also developed a soft law along with the guidelines of OECD to combine efforts with MNCs in minimising social and environmental impacts of their activities while indulging in profitable operations that can provide long-term gains to involved corporations. The UNGS (United Nations Global Compact) is another example of the CSR framework that combines financial outcomes with the social and ethical responsibilities of businesses. The UNGC encourages business buy-in by promoting the adoption of a profit-driven approach that acts as a win-win for involved businesses and local communities by ensuring gains for both parties involved in the transaction (Giuliani and Macchi, 2014). These measures allow companies to fulfil their social responsibilities, improve their image and make a good impact on stakeholders.

However, there are also some drawbacks of CSR that need to be addressed. CSR is often viewed as a strategy to superficially clear the image of companies by only displaying their commitment to society and the environment with no real implications. The activities of oil and gas companies in NDR are an example of the misuse of CSR to obtain personal gains (Akporiaye and Webster, 2022; Kelman *et al.*, 2016). The MNOCs in NDR display their commitment to environmental and social health, but these same companies are, to a great extent, responsible for the environmental degradation of the region. Companies use CSR for their gains by considering elites as their stakeholders and ignoring the concerns of the actual vulnerable population (Cash, 2012). The social license is also violated in this sense because they obtain licenses from elites in return for specific compensation instead of the targeted communities (Bezzola et al., 2022). Likewise, they also set stakeholders that offer them benefits instead of encouraging a mutually beneficial relationship with stakeholders (Mohammed *et al.*, 2022a). The activities of MNOCs in NDR in no way depict their commitment to the environment and society because natural resources, crime rate, employment and overall peace and well-being of the region have only been destroyed since the discovery of oil resources and entry of MNOCs in the region (Idemudia, 2009).

4.10. Structure and Management of Oil and Gas Industry of Nigeria

The structural imbalance in the oil and gas sector of Nigeria has negated the overall social performance of the region (Idemudia, 2014b). With the most numbers of oil reserves in the entire Africa, Nigeria has

around 32.7 billion crude oil barrels, making it the largest supplier in the African continent. Nigeria is also the fourth leading supplier of natural gas in the entire world, with around 182 trillion CF gas reserves (IMF, 2016). The oil and gas market of the country comprises regulations imposed by NNPC (Niger National Petroleum Corporation). Founded in 1977, NNPC is responsible for regulating the oil and gas industry and monitoring the progress of upstream and downstream companies in the market (EIA, 2016). The DPR (department of petroleum resource) is managed by the petroleum ministry, which also performs a regulatory role in monitoring the performance of the industry. However, the DPR largely focuses on oil and gas permits, environmental management and general compliance. According to Leyira et al. (2012), despite the presence of various regulations, CSR reporting and monitoring is not sufficient in the oil and gas market of Nigeria.

Poor regulation is attributed to the management, structure and ownership of the leading MNOCs in Nigeria. The leading operators in Nigeria are Shell, Total, ExxonMobil, ConocoPhillips, Statoil, Chevron and Petrobras (EIA, 2016). In addition to this, some local companies such as Conoil, Monipulo, Seplet and Oando are also holding a small chunk of the market. Nigeria is using two platforms to manage the activities of oil and gas companies. These platforms include PSCs (production-sharing contracts) and joint ventures between NNPC and IOC (international oil companies). NNPC was a major shareholder in this process, but PSCs offer beneficial terms to secure operations in offshore deep-water schemes, whereas JVs rely on onshore, shallow-water schemes. The firms had immense pressure to address their impacts through CSR due to the absence of local government to monitor and control their operations.

The potential of Nigerian oil and gas market can lead the future of the country (IMF, 2016). The Nigerian officials have claimed the presence of at least 40 billion crude oil barrels in reserves and the availability of new plants to increase the production of gas to further enhance the chances of a bright economic future of the country (Boris, 2015). The oil and gas market of Nigeria is largely concentrated in NDR, which remains restive due to the disruptive operations and threats of MNOCs.

The IOCs have often been found to be involved in providing a safe route to companies against their misconduct without any accountability (EIA, 2016). The illegal alliances between MNOCs and authorities have raised questions about the extent to which the authorities are serious in addressing the interests of stakeholder local communities who are getting adversely affected by the activities of companies in their hometowns.

4.10.1. Structure of the NPI

A structure of NPI (Nigerian petroleum industry) is provided in the below figure. The structure shows that the industry is not very different from other industries working in different parts of the world. The oil and gas market of Nigerian is divided into three major markets including upstream, downstream and midstream (Nigerian Oil and Gas Industry 2017).

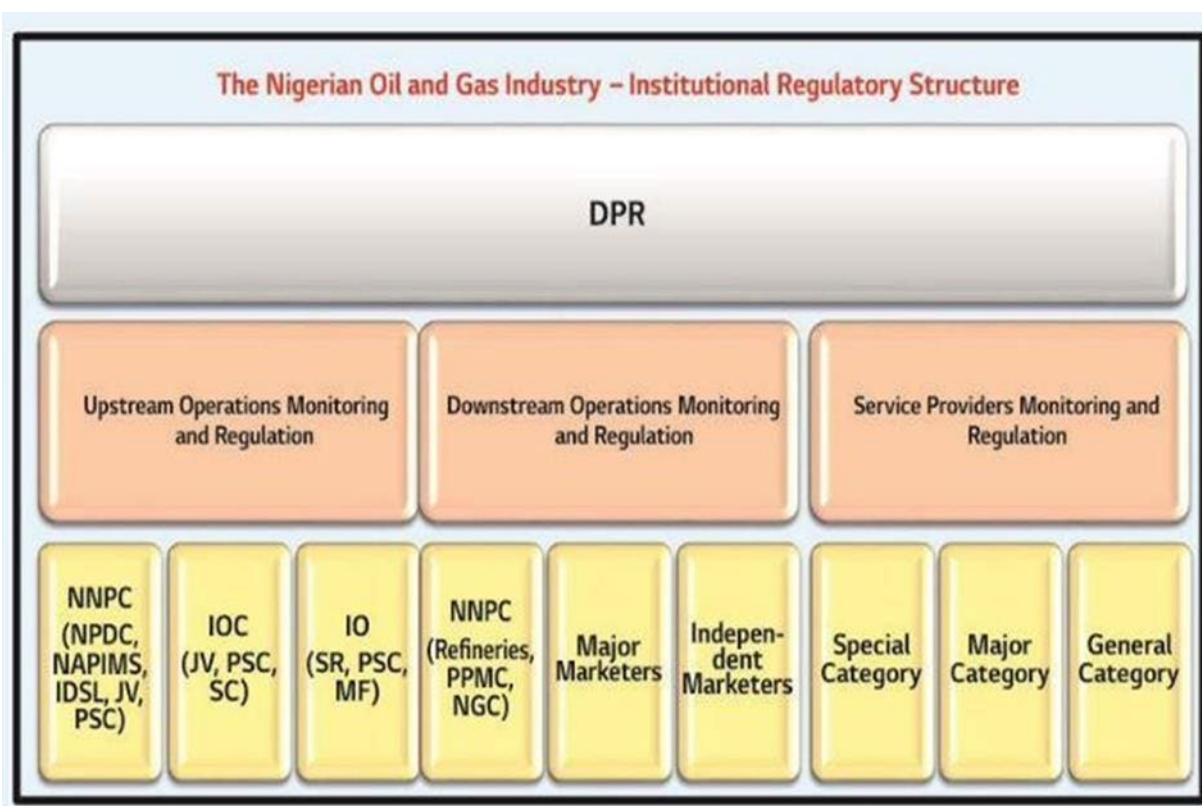


Figure 14: Structure of NPI (Nigerian Oil and Gas Industry 2017).

The NNPC is responsible for monitoring activities in the sub-sector of the gas and oil sector of the country. The following segment will highlight these activities:

4.10.1.1 Upstream Sector

According to OPEC (2013,27), the upstream industry comprises the exploration and production phase. The focus of the exploration phase is on obtaining oil from different resources, whereas the production phase focuses on extracting oil from different sources for diverse purposes (OPEC, 2013). The upstream sector is considered crucial for Nigeria because it is responsible for almost all exports and over 80% of the revenue of the federal government (KPMG, 2014, 5). The activities in upstream areas are managed by the

NAPIMS, COSD (crude oil sales division, NPDC), IDLS (Integrated Data Services Limited) and NGC (Nigerian Gas Company). All of these entities are identified as SBUs (strategic business units) that operate in direct collaboration with NNPC (NNPC, 2016). NNPC outlines the collective duties of these entities in relation to exploration, production, extraction, management, transport, sales, consumption and disposal of crude oil.

There are diverse arrangements in upstream subdivisions for the execution of activities in the oil and gas sector. These activities include the division of production contracts, marginal filed concession, joint ventures and service contracts (Odularu 2007, 8; KPMG 2014, 5). Joint ventures are a dominant approach used by NNPC. According to Odularu (2007, 8), joint venture corporations are responsible for 95% of the production of crude oil for the oil sector of Nigeria. Out of all companies that function with joint venture status in the upstream market of Nigeria, Shell holds a dominant position with 55% shares, including government interest via NNPC. Shell is also contributing to the production of half of the crude oil on a national level (NNPC, 2016; KPMG, 2014; Odularu, 2007). Other than a shell, Exxon Mobil, ENI/Agip, TotalFinaElf, and ChevronTexaco have 60% of stakes with NNPC (Nordås *et al.*, 2003, 54). The figure below provides a visual illustration of the main entities in the upstream industry of Nigeria's petroleum market:

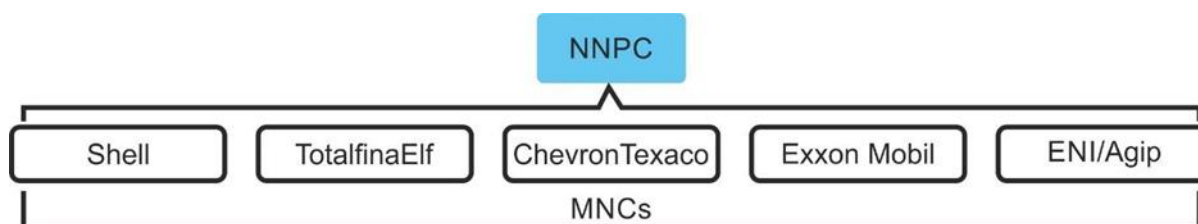


Figure 15: Main actors in the upstream petroleum market of Nigeria (NNPC, 2016).

4.10.1.2 Midstream sector

The midstream market is a part of the oil and gas market responsible for activities including processing, marketing, transport and storage of merchandise that include crude oil, natural gas, sulphur and natural gas liquids (Harraz 2016, 17). The midstream industry establishes a connection between inhabited regions and distant areas of petroleum production where most of the target customers can be found in companies.

Concerning this, Harraz (2016) mentioned that midstream is the 2nd stage of the petroleum market stage. It is responsible for executing logistic operations through pipelines, oil tankers, barges, rail and trucks.

Refineries are the final location, which leads to the downstream market for the commencement of other relevant activities. The midstream market of Nigeria comprises six businesses, including Renewable energy, the Gas Master Plan, the Greenfield refinery initiative, engineering and technology, refineries and petroleum and gas and power (NNPC, 2016). Greenfield refineries were established in 2005 because there was no evidence of the progress of licenses required for greenfield operations until 2002. The Greenfield market aims to produce industrial parks to create conversion plants for oil and gas and connect utilities through premeditated collaboration and profitable corporations that compete in intertwined downstream and upstream markets. Petrochemicals and refineries focus on procedures to connect refineries, which is an aspect of the downstream market, and the Gas Master Plans focus on upstream activities involved in the marketing process. The figure below illustrates the activities of the midstream industry of the petroleum market of Nigeria.

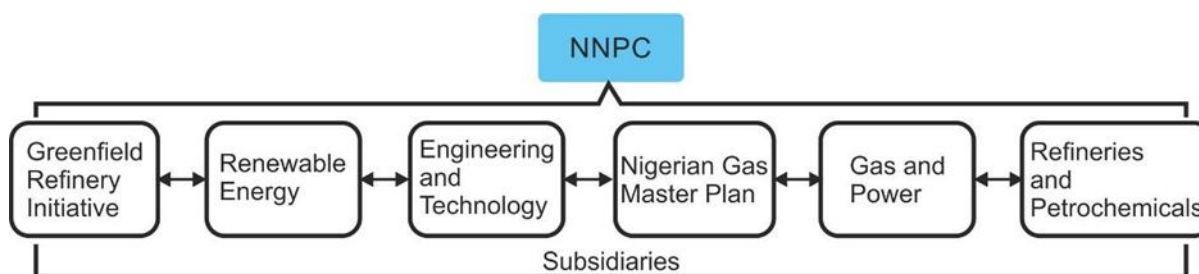


Figure 16: Primary activities of Nigerian midstream petroleum market (NNPC, 2016)

4.10.1.3 Downstream sector

The crude oil discovery and production is the first step that lays the foundation for other stages to lead to the usage of this source of oil. The downstream process emerges once crude oil has been identified and procedures to convert it into its useful form and make it accessible for customers. The downstream operations in the oil sector comprise operations associated with refining and purifying crude oil into various products to ensure its usage in transport and marketing (OPEC 2013, 34). The downstream sector of the petroleum market in Nigeria is focused on converting crude oil and gas into refined products such as chemicals and petrochemical commodities, gas treatment, gas stations, marketing and transport and research and development procedures (NNPC, 2016; KPMG, 2014, 8). There are four plants that operate under NNPC. These plants are capable of producing 445,000 barrels of crude oil with an average of a day. Out of the four refineries, two are established in Port Harcourt, which leads to the production of

210,000b/d, 1 in Warri is producing around 125,000 b/d, and 1 in Kaduna is producing around 110,000 b/d (Odularu 2007, 9, KPMG 2014, 8 and NNPC 2016). NNPC owns these refineries along with three other petrochemical plants in Warri and Kaduna that perform downstream operations (NNPC, 2016). The NNPC also added 21 storage depots, 9 liquefied petroleum gas and 5000 km of pipeline network.

Despite the presence of four crude oil refineries, their consumption is about only 30% of their original capacity, due to which the government has to be involved in importation activities to meet the requirements of customers and facilitate income for the growth of the national economic (Odularu 2007 ; KPMG 2014). However, KPMG (2014) identified that the situation will change in the coming years because the Nigerian government has allocated management contracts to improve the outcomes of refineries and provide new licenses to companies. The rationale behind the issuance of these licenses is to ensure that license holders are committed to generating positive impacts such as contributing to national GDP, providing employment opportunities and focusing on infrastructural growth. The infrastructure also includes power plants, gas pipelines, new refineries and railway lines. The operations in the downstream petroleum market of Nigeria are presented in the below figure:

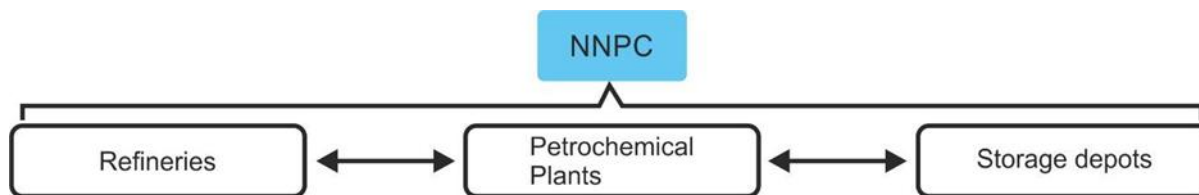


Figure 17: Activities of downstream petroleum market in Nigeria (NNPC, 2016)

4.11. Sustainability in Nigeria

Corporate sustainability is associated with effective resource management practices that enable an organisation to obtain long-term profits without generating threats to the sustainability of its external environment (Ike et al., 2018). There are two categories of business stability, including the social and environmental impacts and long-term outcomes of operations performed by a corporation (Agunwamba, 1998). The roots of sustainability are found in social justice and related movements that focus on the conservation of resources and ensure the integration of measures that are crucial for the long-term survival of the business (Iheanachor, 2020).

Different resource optimisation practices such as reduction, recycling and reuse can be applied in business operations and supply chain activities to protect brand value, improve stakeholder engagement and fulfil regulatory standards of the business. All these practices lead to the achievement of sustainable organisational growth. The ESG (environmental, social and government) practices must be considered by businesses in maintaining interactions with stakeholders and shareholders, ensuring transparency in activities and indulging in sustainable activities that are crucial for environmental health and wellbeing (APPI, 2020).

Corporation skills and expertise significantly impact their approach to sustainability. However, most managers and individuals in senior positions have very limited experience and awareness of environmental concerns and strategies that can minimise the negative impacts of businesses in their respective environments (Nigeria News, 2018). The implementation of ESG businesses faces barriers associated with the limited availability of financial resources, time constraints, insufficient information, ineffective risk management practices, endless upgrading, management of investor demands and streamlining operations as per the requirements of the external environment (Iheanachor, 2020). The success of corporate activities and streamlining procedures along with cohesive processes are important for the growth of organisations. The National Environmental Standards and Regulations Enforcement Agency (NESREA) was founded in 2007 to enforce legal compliance with environmental standards in terms of managing the quality of natural resources such as water, aquatic specific, farming land, crop fertility and temperature levels of the external environment. The positive outcomes of businesses on the environment are ensured by analysing and evaluating their operations in relation to the external environmental standards and regulations and a comparison of the business environment before and after the commencement of business operations to assess the impact of the corporation on the environmental health (Iheanachor, 2020).

Sustainable development is any strategy or activity that aims to fulfil the present requirement of the global external environment without compromising the future of the company and negatively impacting its stakeholders (Ozturk and Yuksel, 2016). A focus on sustainable growth allows organisations to meet the current requirements of the business without generating challenges for future generations by indulging in harmful activities. Sustainable growth is crucial for corporations in Nigeria because it is the biggest economy in Africa, with several businesses and options for investment opportunities (Caldera *et al.*, 2018).

Every corporation aims to obtain profit and prosperous growth while meeting the requirements of its stakeholders. Organisations try to achieve this goal by engaging in activities and strategies that will enable them to generate mutual benefits for personal gains and stakeholder expectations. All sorts of businesses try to operate on a universal principle of maximising personal gains, managing the requirements of the external environment and making a positive impact on stakeholders through their activities. Concerning this, businesses should focus on ensuring their involvement in sustainable practices and encourage transparency in operations. Nigeria corporations are also a part of the same international space where the focus is on financial gains with positive outcomes. However, organisations are required to invest in sustainable practices and approaches to gradually obtain higher ranks in the market instead of seeking shortcuts that can threaten their future and negatively impact their external surroundings (Oyedepo, 2012).

4.12. Sustainable Development

In the CSR dimension, sustainability focuses on establishing the capacity and skills of governments and businesses to ensure the effective management of their operations with the preservation of the natural environment (Akhakpe, 2012). Corporate sustainability aims to improve the procedures associated with the distribution, consumption and production of resources while creating positive outcomes for all involved stakeholder groups (Afinotan and Ojakorotu, 2009). Sustainability is an element of CSR (Butler, 2011). Contrary to the views of sustainability, MNOCs are involved in operations that lead to environmental degradation manifested in oil spills and gas flaring in NDR. These unethical activities have created various problems for the residents of NDR, which also indicates the violation of sustainability principles (Ogege, 2011).

Stakeholder standards are essential for the achievement of organisational sustainability. These standards share similarities but also some differences with the general approach to stakeholder management (Ako *et al.*, 2009). Concerning this, Odoemene (2011) stated that environmental strategies should be enhanced to achieve best practices without compromising on the well-being of the natives of a host community. Organisations can implement sustainability goals to ensure uninterrupted production and without triggering negative social, financial, position and environmental outcomes. These goals will also enable organisations to provide new opportunities for growth for people. In this context, Eweje (2007) also mentioned that MNOCs are responsible for the protection of the natural environment and societal

conditions of host communities because of the vulnerability of these communities to adverse environmental impacts of businesses.

According to the World Bank Report (2003), sustainability is still an evolving approach to business and strategic development, which requires societies to change according to the requirements of time to maintain a positive and healthy environment for locals (Afinotan and Ojakorotu, 2009). The involvement of societies in social operations is crucial because crisis and social stress can cause barriers and damage to the management and development of assets and jeopardize intergenerational health and wellbeing (Afinotan and Ojakorotu, 2009). It is the ethical duty of MNOCs to avoid indulging in activities that can pollute the natural ecosystem, harm the population and negatively impact their historic resources and income sources, such as agricultural lands and fishing water that can be destroyed due to unsustainable organisational operations (Ebegbulem *et al.*, 2013; Eweje, 2007). Concerning this, the minimalist concept suggests that businesses should avoid being involved in unlawful activities because damaging the natural environment is against the standards of environmental regulations (Eweje, 2007).

The logical explanation of environmental degradation in Niger Delta region points to oil spills and gas flaring due to the deliberate and unintentional involvement of MNOCs in unsustainable activities in the region. The biggest oil spill in Nigeria was recorded in 1980 when over 400,000 barrels of oil spilt from an offshore facility in Texaco and destroyed mangrove spreading on 340 hectares of land (Aro *et al.*, 2010). According to Idemudia (2011), the MNOCs have shamelessly communicated their strategies on CSR and ethical government despite the fact that they have intentionally indulged in unethical operations and made adverse environmental impacts through their operations in the region. In this context, Olufemi (2010) mentioned that while fair compensation is important for host communities due to the loss of their land and agricultural facilities, adverse environmental impacts of their operations and reduced well-being of the population, oil companies in host communities should remain careful in their conduct to not destroy the natural habitat that cannot be restored through any sort of compensation.

The involvement of the petroleum industry in short and long-term sustainability operations requires organisations to address social components in their sustainability strategies to address the concerns of the local population and ensure that corporate activities are able to address problems that are faced by people instead of adding to their issues (Kew and Phillips, 2013; Oguduvwe, 2013). Integration of human expectations in planning and strategic decisions, along with economic and environmental considerations, are primary pillars of sustainable development (Kew and Phillips, 2013). Actual economic development emerges from individual efforts and private investment (Olufemi, 2010). According to Olufemi (2010), economic empowerment and capacity improvement always lead to cooperation and collaboration

between target stakeholders and organisations to ensure the fulfilment of mutually beneficial objectives. These findings can be applied to the NDR and determine the role of the local population and national and local government in managing the environmental impacts of MNOCs in the region.

4.13. Sustainability Efforts Made by Different Countries

The global focus on sustainability and its benefits pressurises corporations and countries to focus on the integration of sustainability objectives in their practice. The focus on sustainability will enable developing and developed economies to integrate systems that can reduce carbon footprints and greenhouse emissions and improve the economic and social sustainability of communities (Galal and Abdul-Moneim, 2016). Most of the today's developed countries, including Switzerland, Sweden, Finland and Denmark, have continuously impacted natural environmental conditions for over five decades through industrial activities, eliminating rain forests for industrial purposes and cutting down large numbers of trees for financial gains. The adverse impacts of these activities are visible in today's environment that is subjected to climate change and its detrimental impacts on people and all living beings. Even though some other countries like Pakistan, China, Brazil and India are also emerging in the industrial world, the environmental impacts of these countries can still not be compared to the devastated impact the traditionally developed countries have made for so many years. However, the modern-day developing countries are also making environmental impacts through industrial operations that can cause a further decline in the future environmental conditions (Daioglou *et al.* 2012). Hence, the UNFCCC (United Nations Framework Convention on Climate Change) has recommended a restriction on greenhouse gas emissions by developed countries. Developing countries are not subjected to strict limitations, but they are still advised to access new technologies to eliminate their environmental impacts (Liu *et al.*, 2012).

4.13.1. Role of Switzerland

Switzerland was criticised by international authorities for the limited involvement of the country in eliminating the cutting of rainforests and consequential environmental damages. However, Switzerland was also the first economy that officially started to work on the achievement of sustainability objectives. The region worked on all dimensions of sustainability, including social, economic and environmental dimensions. The country's important laws and policies are still applied to corporations in the region to control and mitigate their environmental impacts. Following the sustainability regulations, all businesses in Switzerland are supported to operate with a defined set of rules that direct their social, environmental

and economic activities. Switzerland is also following the provisions of UN agencies to ensure a reduction in its environmental impacts (Theurillat and Crevoisier, 2014).

4.13.2. Role of USA

The United States faced the most pressure in comparison to all other countries for the implementation of sustainability activities due to the leading position of the company in terms of the availability of financial and natural resources. Legal authorities and sustainability advocates expect the US to not only ensure the promotion of sustainability in its own activities but also in the activities of other countries by calling them out and providing them with the required resources to achieve their sustainability objectives (Lynch and Mosbah, 2017). Concerning this, Huang and Wang (2013) stated that the USA has so far managed to successfully fulfil its sustainability duty. The country has not only promoted sustainability within its strategies and corporate activities but also made investments to support the sustainability goals of other countries by offering financial and technical resources for sustainable development.

4.13.3. Role of European Unions

The European nations, including the UK, Portugal, France, Germany and Spain, are actively working to integrate three pillars of sustainability in their activities. The European Nations have significantly contributed to environmental sustainability and growth by providing strategies and implementing policies that are used by other global authorities operating in different parts of the globe (Antonova, 2016). Hence, European Nations have made positive efforts to promote sustainability.

4.14. Oil MNCs and the Sustainability Paradox in the NDR

Ugoh and Ukpere (2012) examined the environmental policies of Nigeria within the context of NDR specifically and identified that both federal agencies and petroleum management agencies are not efficient nor effective in their conduct. Oil companies have very conveniently ignored the environmental laws of Nigeria, and the protests of locals against the environmental impacts of oil operations and demand for compensation for damages have also been ignored by authorities (Wosu, 2013). The ignorance of ministries and convenience in performing unsustainable activities shows the formation of internal alliances with authorities (Rexler, 2010).

The Multinational Oil Companies in Niger Delta region initiated corporate stewardship schemes in the 1960s-70s, but the region has still not shown any progress in terms of development even after all these years (Ogula, 2012). Infrastructural failure has become a source of problems for inhabitants because of its direct association with a negative impact on their income sources, including farming land and fishing water (Allen, 2012). The internal alliances between MNOCs and the Nigerian government are proving to be harmful to the local population (Akhakpe, 2012; Olufemi, 2010).

Multinational Oil Companies have faced pressure from the external environment, such as international authorities and media, to integrate CSR operations for the elimination of their adverse environmental impacts on NDR. The effective implementation of the corporate stewardship approach would have been effective for the population (Ogula, 2012; Olufemi, 2010). The approach would have focused on the effective utilisation of natural resources and integrated good governance to monitor the way oil resources are managed in the community (Diugwu *et al.*, 2013). In addition to this, these programs would have also ensured the involvement of regulatory bodies in holding businesses accountable and monitoring and reporting ineffective corporate behaviour to manage the sustainable growth of society (Diugwu *et al.*, 2013; Omolola, 2013). However, the failure of authorities and MNOCs to seek the integration of corporate stewardship programs has only led to the exploration of whats and ifs without any practical outcomes for the community (Omolola, 2013).

The Niger Delta region is in need of immediate action from the government, regulatory authorities and MNOs to mitigate the increasing challenges for locals. The population of Nigeria has suffered from adverse impacts of MNO operations due to the direct impact of these activities on the local environment, which has led to an increase in temperature, the presence of diseases and water, air and noise pollution in the region (Pius, 2013; Adekunle *et al.*, 2013; Odoemene, 2011). These challenges have also impacted agricultural land and destroyed the fertility of crops, which is a major source of income for the local population. The aquatic health has also been affected, causing the death of fish and eliminating fishing as an income option for locals. These factors have also led to an increase in the poverty rate and criminal activities in the region (Ebegbulem *et al.*, 2013; Imobighe, 2011). The action plan should comprise an improvement in the infrastructure, environmental strategies, soil improvement and aquatic life quality management. In addition to this, soil remediation should also be a focus to minimise the impacts of biodegradation (Adekunle *et al.*, 2013). Governments should also encourage interactions between stakeholders to identify and target the exact problems that are faced by different communities (Cools *et al.*, 2012; Pius, 2013; Odoemene, 2011; Akhakpe, 2012).

Inclusive decision-making is the democratic involvement of stakeholders to enable the fulfilment of their requirements. Democratic principles enable the sustainable development of communities by increasing the involvement of the local population in the decision-making process (Onweazu, 2012). The MNOCs have neglected the principles of sustainable development and adversely impacted the environmental conditions of the surrounding oil and gas resources. Not only this, the agitation among the population has also caused disruptions in the oil manufacturing operation (Duru and Ogbonnaya, 2012). The dynamic of MNOCs and host communities has gone downhill since the late 1990s, resulting in militancy operations, kidnapping, degeneration of host communities, disruption in socio-economic operations and vandalism. The increased crime rate in the region is also considered to be an outcome of the reduced social development and marginalization of communities (Akpomuvie, 2011). No doubt, the crime rate by the local population has increased, including sabotaging pipelines and theft of oil resources. These activities have also caused a loss of around \$61.6 billion to the Nigerian economy my 2006-2008 (Paki and Ebienna, 2011). Despite the unethical nature of operations, the criminal activities are still justified to some extent because the population has suffered from adverse environmental impacts of Multinational Oil Companies (MNOCs) on their livelihood and primary income sources. Sustainability in the NDR requires improved awareness of problems that are caused by oil extraction operations and the violation of environmental laws and regulations in the region (Akpomuvie, 2011).

Oil operations are facing interruptions due to consistent friction between Multinational Oil Companies (MNOCs), and the local population of Niger Delta region (Jike, 2010; Lugard, 2013). The poverty in NDR shows the irony of the situation because a region that is leading the economic growth of the country and is home to various rich natural resources is suffering from extreme environmental degradation and social challenges (Mikkelson, 2013). The combined advantages of corporate social responsibility and regulatory standards have also not helped with managing the adverse impacts of oil spills on regional health (Frynas, 2012; Renouard and Lado, 2012). Concerning this, Bayode et al. (2011) have recommended consistent efforts to mitigate oil spill incidents and redevelopment of communities that have been targeted due to the adverse consequences of oil spills.

The oil and gas companies in Nigeria are actively participating in measures to improve the environmental and social impacts of their operations. However, the local population shows a lack of confidence and trust in MNOCs due to a history of the adverse consequences of their operations on the population (Hilson, 2012). The mistrust can be justified because the local population continues to struggle with environmental challenges and poverty despite the claims of companies to improve the social and environmental conditions of the region (Brammer *et al.*, 2012; Sklair and Miller, 2010). The diverse nature of CSR activities

is shifting the attention of organisations towards strategies and operations that can facilitate sustainable growth. The integration of environmental stewardship has also become a requirement for companies to mitigate the adverse outcomes of their strategies. MNOCs, government bodies and local agencies can improve sustainability in the region by improving the capacity of the local population and implementing activities to mitigate the consequences of their operations for locals (Naimi, 2011). Niami (2011) has recommended an integrated approach to increase the long-term profitability of businesses along with managing the social and environmental impacts of their operations by strengthening their commitment to sustainability goals, improving the trust of the local population in businesses and addressing social and environmental problems of the local population.

The requirement for sustainable growth has encouraged collaborative dynamics between oil companies and civil society groups in the Niger Delta region. Due to this, oil firms are increasing collaborations and involvement in CSR operations in NDR (Aaron, 2012). However, the perception of the actual focus of CSR and the root cause of environmental degradation is generating confusion among MNOCs in the regions. The GMOU was implemented by Chevron and Shell in this context to highlight improvement in their previous programs. The firms have largely focused on a quick route to success and short-term gains without making an effort to understand the long-term consequences of their operations and make efforts to amend their activities to comply with regulatory standards and modify their operations as per the requirements of the local environment (Schrempf, 2012). The community partnership established public discord in the case of MNOCs in Nigeria due to ignorance towards the concerns and requirements of locals (Gardner *et al.*, 2011; Schrempf, 2011).

The diverse range of oil resources in Nigeria has also attracted conflicts on economic identification and financial gains, which lead to barriers in the unfair distribution of wealth among the population and MNOCs (Onweazu, 2012). The oil resources in NDR have been a leading source of income for Nigeria for so many years now. The financial development of Nigeria in recent years has solely contributed to the exports of crude oil and gas to foreign countries. However, the availability of oil resources has only proven to be devastating for the local environment because people lost their sources of income and became victims of the greed of MNOCs and Nigerian authorities (Dahou, 2012). The youth in Nigeria have started to get involved in theft, armed robbery and stealing of oil to manage their expenses due to the loss of their farming lands and fishing resources (Orogun, 2010). The conflicts in NDR and other regions of Nigeria can be resolved through poverty management practices and initiatives by the Nigerian government (Banks and Sokolowski, 2010). The Nigerian government can implement strategies to balance the distribution of

wealth derived through natural resources in local communities and use this wealth to improve the condition of the society and offer alternate ways of income to locals (Donwa, 2011).

Corruption is a primary barrier to the sustainable development of NDR (George *et al.*, 2012). MNOCs in NDR have focused on philanthropic activities instead of CSR to focus more on charitable initiatives than reflecting and mitigating their own doings, which led to environmental degradation in NDR (George *et al.*, 2012). The route to environmental degradation for MNOCs was easier because of the appointment of corrupt leaders in government authorities who easily compromised on environmental health in return for some financial gains NDR (Ogundiya, 2011). Corruption has found its routes in various dimensions, including regulatory bodies and government authorities who lead MNOCs to shortcuts that are harmful to the local environment. Elimination of corruption can foster growth and share understanding of environmental sustainability and innovation in the region (Ogundiya, 2011). Corruption management will reduce poverty, youth restiveness and the rate of environmental degradation in NDR. In addition to this, it can also lead the way for the promotion of CSR operations in the region (Gilberthorpe and Banks, 2011). The development and promotion of effective CSR will guarantee long-term stability in the region by maintaining the profitability of oil and gas companies without compromising on the social, ethical and environmental aspects of local habitat.

According to Shrivastava and Kennelley (2013) sustainability practices must focus on the satisfaction of the local population. The increasing awareness among people is leading to increased requirements for organisational involvement in CSR operations. The involvement in CSR operations is likely to improve the lifestyle and living conditions of local people. Globalisation has created an interdependency between society and businesses, which is why it is important for businesses to promote environmental and social standards for an improved impact of their activities on their external surroundings. However, globalisation and its associated strategies often encounter resistance from people due to the new natural and limited familiarity of the population with this phenomenon (Shrivastava and Kennelley, 2013; Mintzberg, 2010). This resistance from the population has resulted in the addition of barriers to the sustainable development of communities. The idea of place-based corporations offers a new aspect of ownership to businesses by allowing them to obtain financial gains while making positive impacts on the environment and society (Shrivastava and Kennelley, 2013). While the sense of ownership enables people to determine its importance of sustainability, it still fails to address resistance towards globalisation. However, an understanding of place-based corporations can enable organisations to be mindful of their conduct and efficiently manage the sustainability aspects of their activities (Barr *et al.*, 2011). The outcomes of sustainability strategies can be maximised by involving local people in the formulation and

implementation of sustainability approaches relevant to local communities. The importance of sustainability requires a modification of environmental strategies, including customer and organisational responsibility for regulating these practices (Barr *et al.*, 2011).

The influence of oil manufacturing operations has become quite visible in the growth of NDR through various research and assessments. MNOCs hold great authority in NDR, and they also have control over operations associated with oil discovery and production on a global scale, which has led to the problem of wealth accumulation among specific shareholders (Obi, 2012; Omotosho, 2013). The economic relevance of NDR has improved globally due to the presence of extractive powers, including Shell, Egip - Eni, ExxonMobil, TotalElf and Chevron-Texaco (Obi, 2012). However, the greed for financial gains has also increased in the region because of operations directed at controlling oil resources and associated wealth that is available in the natural environment of NDR. The ability of Nigeria to hold MNOCs accountable for their environmental and economic impacts is damaged by the influence of poor capacity, unfair resource allocation and corruption in the region (Omotosho, 2013). The imbalance in the management structure is favouring the financial interests of MNCs and neglecting the adverse impacts of these activities on the livelihood and wellbeing of the local population (Omotosho, 2013). The Nigerian government has failed to manage this imbalance in the distribution of oil wealth. The poor performance of the Nigerian government and the increasing authority of MNOCs are resulting in an increase in social inequality in the region. Poor environmental growth and unsustainability is attributed to the operations of oil discovery and production. Hence, democratized deglobalisation is important to promote the fair distribution of wealth and inclusivity in the region (Obi, 2012).

4.15. Challenges to Sustainable Development in Nigeria

African continent is known for the availability of diverse natural resources. Nigeria is among the most popular countries in Africa and is known for the availability of diverse resources, along with the cultural, economic and ecological diversity of the region (Adbullahi and Muoghalu, 2006). However, the region is still struggling with a range of developmental problems (Arko-Cobbah, 2004). It is unfortunate that most African countries have progressed in various aspects, but they are still struggling with developmental problems, and they still lag behind other resource-rich countries in terms of developmental projects and the condition of the local population (Lawal, 2006). The past 30 years have emerged to be most disastrous for most African countries (Sirleaf and Radelet, 2008). Poverty increased significantly in most of the African countries. However, African tigers were able to obtain a historic reduction in poverty with the fastest rates of growth. Regardless of this, the findings have pointed out that most sub-Saharan African

economies, including Nigeria, have reported almost zero growth in annual GDP from 1970-2000 (Akoji, 2010 and Abimiku, 2006). Except for a few countries, poor performance was recorded on similar levels across the continent. Concerning this, Collier (2007a) mentioned that poor economic development is a major reason for global poverty. Collier (2007a) identified that failed development operations and their adverse impacts on the African economy have increased in the past few decades. Collier (2007b) relied on different groups of statistical regressions of country-wide development and primary physical features, including wealth, landlocked areas and resource scarcity; human features, including small population countries and diverse ethnicities and geographic elements. The findings revealed that a combination of these factors is among the primary causes of global poverty. However, their outcomes are much more visible and drastic for sub-Saharan Africa (Collier, 2007b). Concerning this, Lawal (2006) mentioned that various mutually reinforcing elements are responsible for the decline in the developmental and economic degradation of countries. Hence, it is evident that sustainable development in Nigeria is plagued with various problems that stretch to mismanagement, abuse of resources and ecological and environmental problems.

4.15.1. Poverty

According to Imam-Tamim (2014), a nation cannot become sustainable if it appears to be developed on the surface, but a large segment of its population is dealing with poverty. Poverty is a major barrier to the achievement of sustainable development objectives in Nigeria because of its impact on the income and lifestyle of the native population. Nweze and Ojowu, 2002 and Akoji (2010) have divided poverty into three groups: subjective, absolute and relative poverty. Absolute poverty is a primary barrier to sustainable development because it is associated with unfair allocation of resources, limited income and inability of people to afford a balanced lifestyle. Absolute poverty occurs when a significant percentage of the population is not able to offer the basic necessities of life, but these resources are available to other people living in the same environment (Kuper and Kupa, 2008).

Poverty has been defined by different authors in diverse contexts. Most commonly, poverty is viewed as reduced freedom or ability of people to function due to barriers to value achievement (Sen, 1985; Sen, 1999; Nussbaum and Amartya, 1993; Nussbaum, 2000). Functioning is the means to both the survival and ends of human life, and it comprises a wide range of activities. Another relevant term in poverty is capability, which is attractive to the attention of various authors because of its improvement in social deprivation on the poverty rate in a community.

The percentage of people living in poverty has decreased significantly in the past few years. As per studies, around 1,470 million people were surviving on \$1 with an average of a day in 1981. However, these numbers reduced to 969 million people surviving on \$1 per day in 2004. The rate of extreme poverty has also declined from 40 to 18 per cent. However, the numbers have increased by almost double the rate in Sub-Saharan Africa. The number of populations living in poverty has increased from 168 to 298 million while the percentage has slightly moved from 42 to 41% (Chen and Ravallion, 2007). The life expectancy in the region peaked at 50 years in 1990, but it has declined to almost 46 years in recent years, whereas life expectancy in developing countries has significantly improved to 65 years on average (Jamison et al., 2006). The per capita annual GDP of sub-Saharan Africa was only 0.1% from 1960 to 2000, while other developing economies experienced accelerated growth to 3.6% for the same period (Collier, 2007). According to Sachs et al. (2004), the production of food per capita was recorded at 2.3% on a yearly average from 1980 to 2000 in Asia, with a reported percentage of 0.9 per cent in Latin America and a decline of 0.01 per cent in tropical Africa.

Nigeria has depicted its commitment to improving the economic conditions of the region by highlighting its aim to maximise outcomes of economic initiatives to obtain the maximum satisfaction and welfare of the local population (Imam-Tamim, 2014). Concerning this, the Nigerian government has stated that policies will focus on ensuring the effective performance of the economic system to permit wealth concentration as a source of improved life quality visible in the effective exchange of products, availability of shelter, clear water and food, health benefits, employment opportunities and welfare schemes for the deserving population (Imam-Tamim, 2014). Unfortunately, the claims of Nigeria are only found in news and media without their practical implications that are nowhere to be seen in declining economic conditions, increasing costs of living and reduced quality of life in the region.

Poverty management is crucial for the growth of Nigeria because the cries of Nigerian authorities over the integration of the Minimum Wage Act are still fresh in the minds of people. It should be considered that the Nigerian government has been involved in corruption and controversies associated with supporting unsustainable activities of MNOCs (Kolawole, 2011). The violence and use of the military against local rebellions further indicate the inability of the Nigerian government to tackle primary issues that are associated with the unethical conduct of MNOCs and their impacts on the livelihood of the local population (Uzongdu, 2011; Onuegbu, 2011).

4.15.2. Policy Implementation

Environmental effectiveness determines the outcomes of environmental improvements aimed at increasing the availability of natural resources, ensuring effective utilisation of natural resources, preventing environmental degradation and supporting sustainable development of the region to protect the wellbeing of living beings. However, the poor ability of Nigeria's national environmental regulations and policies is reflected in the continuous environmental and sustainability issues in the region. The direct or indirect involvement of citizens has been ignored in the formation and integration of environmental policies in Nigeria, which has also become a reason for the failure of these strategies (Adeboyejo, 2017; Ogunkan, 2021). The limitations of the provisions of the environmental constitution of 1999 have further destroyed natural conditions and environmental impacts of sustainability initiatives aimed at improving the atmosphere of local communities (Akamabe and Kpae, 2017).

Environmental policies are impacted by social, political and economic conditions depending on their ideological infrastructure and internal contextual reasons (Couturier and Thaimai, 2013). The commitment of Nigeria to environmental policy is focused on the implementation of effective environmental, economic, social and governance pillars in the region. However, a lack of effective integration is a major challenge to the desired outcomes of environmental policies in the region. Inadequate public engagement in the policy development process and consistent shocks by internal issues such as conflicts and corruption are also the key factors that need to be addressed to maximise the outcomes of sustainability practices (Onyenekenwa and Agbazue, 2011; Fagbohun, 2012).

4.15.3. Institutional efficiency

The NESREA (National Standards and regulations enforcement agency) was established in 2007 to support the environmental goals of the Nigerian federal government (NESREA, 2017). The agency was established to ensure the development of a clean and safe environment for the Nigerian population (NESREA, 2007). It is a leading institutional body that governs environmental conditions in Nigeria to highlight the adverse impacts of different activities on the natural environment. The NESREA acquired a ruling in 2014 against a telecommunication firm. The ruling was held before the Kaduna High Court, and the verdict led to the removal of the vast telecommunication facility from an area due to its environmental impacts. The involvement of NESREA resulted in a reduction in pollution in some facility areas, including Enugu, Kano and Owerri. The NESREA authorities have also released an armed operation against anti-environmental facilities in operational areas. An environmental impact analysis was conducted before the initiation of

the project; this extent of detailed environmental analysis was not conducted before by any other local agency, which was a major positive step towards the elimination of environmental concerns of the region (Ibrahim and Imam, 2015). However, the NESREA has failed to arrest offenders, which has only led to further deterioration of the natural environment. The continuous environmental degradation in Nigeria is attributed to the inability of local authorities to hold businesses and individuals accountable and punish them for their involvement in unethical and unsustainable activities (Erhun, 2015). The inability is attributed to various factors, including corruption, poor governance, institutional bottlenecks, ineffective legal frameworks and intimidation (Ikelegbe and Onwuemele, 2012; Ijaiya and Joseph, 2014). The foregoing analysis has shown that poor environmental governance in Nigeria is caused by various factors that need to be controlled to observe positive changes in local and national environmental health.

4.15.4. Legislation and Enforcement

The legislative dimensions of environmental growth in Nigeria have witnessed tremendous development in recent years. These legislative aspects have covered a wide range of contexts, including the allocation of natural resources, environmental impacts and the outcomes of oil and gas discovery, extraction, production, usage and disposal by MNOCs in the region. The Nigerian environmental legislation was started in 1979, and until now, over 30 new environmental laws have been proposed to improve resource usage, manage ecological health and reduce pollution in different regions of the country to minimise its impacts on the local environment (Ogunkan, 2017). The environmental legislations in Nigeria are based on the outcomes of laws and regulations that are followed by developed countries with certain modifications and innovations to make them more relevant for the Nigerian population and environment.

A positive aspect is the progress of environmental regulations in Nigeria, especially because the regulations have started from scratch and strengthened the current environmental condition of Nigeria. The regulations have largely focused on centralising management practices and environmental protection practices (Ogolla, 1995). However, the legislative component is still subjected to criticism because of the continuous decline in environmental conditions and a consistent increase in problems of the Nigerian government. Despite the vast expansion of environmental laws, the regulations have failed to make the desired impacts on the population because of various reasons. For example, the laws are scattered across various industries, the consequences of law violations are not adequate and realistic and regulatory authorities do not take serious measures to ensure the fulfilment of legal requirements as per environmental standards. The consequences are also not applied very seriously by the government

because some environmental offences are trialled administratively instead of corrective actions (Ijaiya and Joseph, 2014).

Another challenge in law enforcement in Nigeria is the absence of modern technology, ineffective response of the judiciary to green environment, inadequate supranational adjudicatory institutions for environment that support transborder supply to toxic materials and waste (Fagbohun, 2012; Ibrahim and Imam, 2015; Budnukaeku and Hyginus, 2022; Ijaiya and Joseph, 2014).

4.15.5. Corruption

Corruption refers to the consumption of products that belong to the general public by their authorities and other activities that provide personal gains to authorities at the cost of public well-being (Andvig *et al.*, 2001). Corruption is a kind of bribery and a massive barrier to the sustainable development of countries. The foreign grants of Nigeria provided by the UK were unraveled due to the bureaucratic setups and corruption in Nepal. Nepal has become a sort of corruption hub because administrative activities cannot be performed without bribing the authorities, and even licenses and permits that need to be allocated based on merit and skills are provided in return for some money that is paid to government officials; these factors are adding barriers for the development of countries (UKAid, 2020). Corruption is a major concern in Africa. It has resulted in various challenges including a decline in economic growth, reduced foreign investment, disturbance in market competition and public spending, increased manufacturing costs and overall improved costs of living. These factors have affected the quality of life and resulted in unfair allocation of resources and reduced returns on taxes. Corruption is also resulting in the violation of human rights, transparency and accountability standards in Nigeria (UNECA, 2016).

Corruption has become a development concern in Nigeria (Ochonu, 2011). Realistically, no country can survive the adverse impacts of corruption because it impacts the transparency of activities and also reduces the ability of authorities to invest in poverty reduction schemes. Nigeria is a victim of extreme corruption, which is leading to poor social and environmental health and a consistently declining quality of life for locals (Public Forum 1997; Forje, 2007).

Corruption spreads its roots rapidly in a system once the politics of a nation are infected by this virus. Corruption on a large scale immediately expands to small-scale activities where every manager, even those with limited authority, demands financial favours to support the public. It impacts the legitimacy of the government by impacting its ability to invest in sustainability projects that can improve living

standards for people. In addition to this, corruption also reduces the percentage of public resources and leads to the wastage of public funds in useless activities that are designed to facilitate the selfish gains of those in authority (Policy Forum, 1997).

Corruption is a core problem for the development of Nigeria. The roots of corruption have spread so far in the Nigerian system that everyone including locals are expected unfair financial returns through either legal or illegal routes. According to Lawal (2007) corruption has reduced the economic and political growth of Nigeria to a significant extent.

4.15.6. CSR and Information Accessibility

The private industry has significantly contributed to the development of Nigeria. However, there is debate around the outcomes of the private sector on local communities and their alliances with governments that are leading to the promotion of an unfair and biased environment for locals. It also indicates that the primary aim of private businesses is to maximise financial gains (Forje, 2007). Governments, policy makers and researchers have reached the conclusion that civil society is also a key player in ensuring good governance of organisations operating in different regions (Arko-Cobbah, 2004). Africa's public sphere is a prime example of areas that can be regulated efficiently through civil society. It indicates that an active civil society can contribute to the successful implementation of programs aimed at societal development with reduced corruption and improved accountability of involved authorities for their activities (Arko - Cobbah, 2004). Private companies are often found to be involved in whitewashing their image by promoting false information about their involvement in sustainable initiatives and shaping the public's perception of sustainability through local media. Even though it is also attributed to limited awareness and higher illiteracy in underdeveloped countries, it also highlights the ignorance of ethical aspects of business by private businesses. The private sector uses media to promote false details to the local population. According to Jansen (1995), media deception can go to an extent where facts, figures and tables are being displayed to show the environmental commitment of businesses.

Information accessibility is the right of citizens to determine the involvement of governments in different operations and measure the outcomes of these operations for their growth and well-being. The accessibility of the required information makes it easier for the public to judge the government based on its involvement in public well-being initiatives and also hold the government involved in unethical and corrupt operations. According to Byrne (1999), the freedom of the public is the foundation of a democratic

government and good governance because the independent public is able to determine and demand their rights without any hesitation.

The independence of media is crucial for transparent reporting of facts and creating awareness among the public about the acts of the government and involved corporations. However, even the media is not free and independent in Nigeria to provide accurate details to the population (Jansen, 1995). It calls for the need for effective interventions from civil society to determine the extent to which public resources are ethically used by businesses. Even though the Freedom of Information (FOI) Act has been introduced in Nigeria to ensure that the public can access the required information, the authorities are either not taking this act seriously or they are finding ways to keep real records hidden from the public eye (Ibrahim and Abubakar, 2011).

The FOI Act provides the right to people to access information in any format available, to evaluate the legitimacy of organisational claims. However, the information must be in possession of an agency or public figure to be accessed by the public (Omotayo, 2015). The act holds organisations accountable for maintaining the transparency and availability of data to ensure that the public can request access to data at any point in time without facing any barriers and obtaining details of the required information (Imam-Tamim, 2014).

The FOI Act is a useful step in improving public awareness of business activities by providing them the right to have access to transparent business activities and good governance initiatives of corporations. However, authorities can still find ways to manipulate data and reduce its accessibility for people (Ibrahim and Abubakar, 2011). Despite its potential benefits, a large percentage of the population is not aware of this law, and those who know about this law are still not able to access legal routes to hold organisations accountable (Agba et al., 2018).

4.15.7. Government Strategy and Governance Reform

The average GNP (gross national product) of the Nigerian population is around \$280 for each household. However, the average value is even lower for the residents of NDR (Essien, 2011). Despite the availability of rich oil and gas resources, NDR's HDI (human development Index) is lower than other countries and regions that have similar levels of natural resources. The HDI of NDR is 0.56 in comparison to 0.880 in Saudi Arabia, 0.799 in Libya, 0.844 in Kuwait, and 0.846 in UAE (Akinola, 2010). Most of the residents of

NDR survive on less than \$2 per day, while their hometown produces more than 2M crude oil barrels every day (Orogun, 2010).

The FGN has applied intervention strategies in NDR to eliminate the outcomes of years of neglect, marginalization and injustice that have been faced by the people. The residents of NDR have lost all hope of a sustainable future. The youth see a dark future for their hometown and finds kidnapping, violence, theft, conflicts and fights as key sources for their strategic escape (Essien, 2011). For so many years now, the Nigerian government has been struggling with integrating strategies that can improve the living standards of NDR residents. However, the efforts seem to be a cover when the government itself is not willing to hold those responsible for this condition of NDR accountable for their actions (Paki and Ebienfa, 2011).

The Nigerian government formed the NDR board in 1961, the OMAPADEC in 1992, and the NDDC (Niger Delta Development Commission) in 2000 as one of the few initiatives to improve the situation of the NDR (Essien, 2011). According to Paki and Ebienfa (2011), development must be described as means rather than a phenomenon. The authors came up with this conclusion because the financial state of NDR has only declined in these years instead of showing improvement due to the implementation of various authorities and management bodies by the Nigerian government. The failure of these structures is attributed to lack of ability, lack of resources, corruption, moral weakness, financial imprudence, faulty integration approach and nepotism (Akpomuvie, 2011b). The Nigerian government has failed to improve the living standards of a population that is home to the driver of its economic growth. Despite the fact that NDR is facilitating the economic development of Nigeria, the region itself has only suffered from adverse environmental, social and economic impacts. The promises of a bright future upon the discovery of oil resources seem like fancy words after 50 years of oil discovery with a significant increase in poverty, unemployment and crime rate along with the destructive environmental state of the region (Omojimate, 2012).

According to Akinola (2010), the revenue-sharing formula can play a key role in assisting the national government of Nigeria to ensure the accessibility of required resources to people living in host communities of oil-producing regions. The ethnic minority of NDR has suffered from the unfair allocation of oil revenues; according to Orogun (2010), the oil revenue share of minorities was around 50% in 1966, but it reduced to a drastic low of 1.5% in the mid-1990s. The rapid decline led to protests and strikes by minority groups, which led to an increase of 13% in 1999, but it was only in response to global campaigns,

not because of the fact that the Nigerian government genuinely acknowledged the gaps in its provision of revenue. The government established the Niger Delta ministry in 2008 and also founded Technical Committee on the Niger Delta (TCND) to provide a solution for the perceived injustice in the community (Rexler, 2010). However, the new authorities were only able to moderately control the crisis, and overall, they had remained unsuccessful in their attempts to provide fair access to resources to people. The failure can be attributed to underlying problems, including influences, politics and corruption (Kew and Philips, 2013).

4.15.8. Comprehensive, Comprehensible, and Enforceable Environmental Enactment

Nigeria has established different laws and regulations to govern the activities of the government and align their activities with the requirements of the general population. There are around sixty environmental laws and policies that can be found in different industries of the region. However, the laws are scattered across different industries and are implemented in different ways, which impacts their application and increases the potential for corruption and time waste in their integration (Onyenekenwa and Agbazue, 2011). There is only one positive constitution in Nigerian provided in section twenty of the constitution to strictly deal with the management and protection of the natural environment. However, the section is not justiciable and does not provide any specific provision to hold the government accountable for the violation of environmental standards of the country (Fagbohun, 2012).

The analysis has highlighted weaknesses in the legal structure of Nigeria in managing and controlling the environmental impacts of business activities. Nigeria needs an inclusive, sophisticated, well-structured and coherent environmental system that can provide guidelines to the Nigerian government for regular sustainability of different actions (Erhun, 2015). The weakness of the legal system is also reflected in punishments and consequences that range from fines and imprisonment. However, the consequences are rather unrealistic in nature, due to which they are not taken seriously by the authorities. A complete transformation of the environmental laws and regulations is required in Nigeria to hold businesses, people and authorities accountable for their adverse environmental impacts and set realistic consequences that lead to resistance among people towards the violation of laws.

4.16. Conclusion

CSR and community engagement have both proven to be beneficial for the growth and development of organisations. Both elements provide different benefits to organisations associated with improved brand

image, a decline in operational costs, attracting potential customers, creating an equilibrium between power and responsibility, promoting long-term gains, enabling the fulfilment of relevant laws, improved image within the general public, improved ability to invest in different communities, improved access to financial resources, better relationships with employees, ability to produce innovatively and capability to strength dynamics with target communities. The corporate engagement and CSR approaches provide a wide range of benefits to organizations. However, the outcomes are totally dependent on the ability of organizations to efficiently integrate these strategies and continuously analyse these dimensions.

5. Chapter Five: Research Design and Methodology

The chapter provides a thorough review of the data gathering techniques as well as research procedures that make it possible to analyse the findings and find answers to the research questions. The research paradigm is introduced at the beginning of the chapter as a basic concept that guides the selection of technique, population sample, and study design. It becomes clear whether the realism paradigm used in the research was appropriate. Additionally, it draws attention to the relationship that exists between the technique and the objectives of the study and offers an in-depth assessment of the selection criteria. In order to make certain that a reliable, appropriate, and effective research approach is used across the course of the research, the chapter includes a discussion with critical review. The reliability and validity of the interviews, the questionnaire, and the usage of the study's methodologies will all be justified.

The entire process of research is described, including the design, strategy, and research methodologies, all of which are supported by the rationale behind the choice.

5.1. Introduction

This chapter on research design and methods also demonstrates the way the purpose of the study will be accomplished by the result of the study that is eventually produced. The researcher highlights the study's strategy, design of the research, data collection, techniques of data analysis (qualitative and quantitative data analysis), and ethical consideration. Since the data was gathered throughout the study period from each aspect of the source of the data, the research employed these mixed techniques. Consequently, the goal of this approach is to meet the goals and study plan that the researcher has created.

5.2. The Study Area

5.2.1. Target Population for the Study

The local people, policy makers, opinion and community leaders, academicians, interest group leaders, business professionals, journalists, and Niger Delta non-governmental organisation members made up the research's sample population. Using a random sample technique, the research's population was established. The research was conducted in the Ogoni village of Bodo, which is situated in Rivers State's Gokana Local Government Area (Figure 15). With around 69,000 residents (Maconachie and Gavin, 2013), it is without a doubt the nation's biggest indigenous population. Bodo is located east of Nigeria's Niger Delta at the southernmost point of the Gokana Kingdom in Ogoniland. Its outward boundaries are Andoni to the east, Bolo to the west, as well as the Atlantic Ocean and Bonny to the south (Alawa, 1977; Piegbara and Kedei, 2003; Tanen, 2005).

Bodo is split into 35 villages, each of which is historically governed by a centralised council of chiefs headed by a king. Pollution from petroleum and other environmental disasters are the consequence of oil exploring in the Niger Delta. Some of these issues comprise agricultural disturbance, contamination of water supplies, and harm to marine life (Osuagwu and Olaifa, 2018). According to Ifelebuegu et al. (2017), a spill of oil that can occur on land or within the water, results in the release of a liquid petroleum-based substance in the ecosystem. This type of pollution is caused by human activity. Many creek dwellers, whose livelihoods depend on natural resources within their surrounding area, are negatively impacted by spills of oil and water seepage, which degrade aquatic life and cause devastation on ecosystems (Adati, 2012; Pete *et al.*, 2021).



Figure 18: The Bodo region. Source: BBC News, (2014)

Due to the destruction of formerly productive fishing grounds along with the reduction in the number of acres of high-quality agricultural land, the damage to the environment brought about by the spill of oil along with other oil and gas operations has deteriorated people's financial circumstances and contributed to their continued poverty (Kingston, 2011). Chukwuemeka et al. (2011) evaluated the effects of societal disputes and the consequences of foreign investment in the area and found that participants were more concerned about environmental destruction than monetary compensation. According to Chukwuemeka et al. (2011), the inhabitants of the NDR think that compensating for environmental damage would not be a good way to preserve their ecosystem. The Niger Delta region's destruction of the environment is considered to be an international issue by environmentalists along with other campaigners (Obi, 2010).

Ogoniland indigenous people were the main subjects of this investigation. The choice of Ogoni indigenous people is crucial for this case study since only those who have been impacted by the issue under investigation make up the sizable participant pool required for the research to create a shared knowledge. The demographic and sample selections were crucial to the study's effectiveness. The sizes of the groups

demonstrated the range in socioeconomic class, gender, age, and educational backgrounds. Eshlaghy et al. (2011) claims that the sufficient population in the randomly selected sample within this research enabled for comprehensive evaluation of the associations between different experiences, procedures or events.

5.3. Geographic Proximity and Public Attitudes toward Energy Development

Another frequently investigated predictor of the public's views towards the development of energy is geographical proximity to current or potential energy projects; nevertheless, empirical investigations have yielded inconsistent results. The theory that opposes something because it doesn't happen in my backyard, or NIMBY, is arguably the most well-known. According to NIMBY theory, those who are closest to a planned construction may reject it out of self-interest due to concerns about possible detrimental effects on their health, safety, or value of their property (Braun 2017, Schively 2007, Bell et al., 2005, Cotton 2013,). The term "NIMBY" persists notwithstanding academic research that has essentially refuted opposing reasons as being solely self-interested (Devine-Wright 2009, 2017, Ellis et al., Devine-Wright et al., 2007). NIMBY has been directly questioned by an increasing quantity of literature, which finds that those who are closest to real energy production tend to be more encouraging (Firestone and Kirk 2019, Alcorn et al., 2017, Hoen et al., 2011, Boudet et al., 2018, Gravelle and Lachapelle, 2015,). This has led to the creation of a number of opposing labels, such as yes-in-my-backyard (YIMBY) (Smith and Marquez 2000) as well as please-in-my-backyard (PIMBY) (Jerolmack and Walker 2018, Brinkman and Hirsh 2017).

Individuals who compete against the oil and gas production within the Niger Delta of Nigeria can make decision regarding leaving the licenced regions where this growth is taking place; whilst other individuals who are in support of the activity can relocate there looking for business prospects or employment. The analysis of the presumed advantages above the costs and vice versa in the initial stages of development od resources builds the foundation for public perspective and reaction (Boudet et al., 2018, Bugden and Stedman, 2019, Bugden et al., 2016, Zanocco et al., 2019). According to Jerolmack and Walker (2018), people's attitudes about oil and gas development might be influenced by their political philosophy, political view of rights to property, sense of independence, and mistrust of liberal beliefs. For this reason, local people were targeted as participants in this study.

5.4. Rationale to gather Data from Expert and Public

In order to investigate public opinion among the Bodo community's primary social groupings, 260 questionnaires for surveys were handed to the population. Additionally, in order to better comprehend the opinions and perspectives of the respondents on oil and gas development, the present research relies on a comprehensive interview with 18 Niger Delta specialists, including experts from the industry and policy leaders. The purpose of the interview was to elaborate on the outcomes of the survey. By recognising and investigating the elements that influence the view of risk for the exploration and extraction of oil and gas among specialists (policy makers and industry professionals) and the community, this research adds to the body of knowledge. Perceptions among experts and the general public is essential to risk management. It was critical to acknowledge the differences in beliefs and values that are prevalent both inside and across the Bodo community's social groups. Decisions on oil and gas prospecting must take into consideration matters of public interest and policy relevance.

Our understanding of the opinions of experts and the general public, in addition to whether they agree or disagree on the possible hazards connected to oil and gas development, is improved by this study. The fact that the search for oil and gas is a complicated scientific procedure backed by scientific information and the role specialists perform in the discovery and extraction procedures, it was crucial to involve experts in this research.

5.5. Questionnaire Sample Size Determination

The research employed purposive sample and simple random sampling techniques to choose the research's representative respondents. Every member of the sample had a comparable likelihood of being selected or of receiving a response that according to the data analysis reason, may be greater than chance. This is ensured by simple random sampling. In order to get the best and most appropriate information, a sample size selection approach was employed (Sileyew, 2019). Both probability (purposive sampling) and nonprobability (simple random sample) sampling techniques were applied in this investigation. This can be attributed as a result of the features of the data sources that enabled the researchers to incorporate numerous approaches. This increases the trustworthiness of the study output and its decision-making process by aiding in the triangulation of the data gathered during analysis.

5.6. The Scope of the Research

With little focus on to the downstream procedures, this research concentrates on environmental management throughout the upstream (exploration and production) operations of the oil and gas corporations in the Niger Delta. While transportation, distribution, petrochemical manufacturing, refining, as well as marketing operations make up the downstream, exploration along with manufacturing

operations make up the upstream. It is crucial to emphasise that this study will not impede corporate or national politics related to the oil and gas industry in Nigeria or elsewhere. It will only analyse and assess the environmental and social problems raised by the Niger Delta's upstream oil and gas operations, as well as potential solutions. The study's key characteristic and objective is to give long-term solutions to the socioeconomic and environmental problems in the Niger Delta.

A methodology that combines qualitative and quantitative methodologies was used in this research to give a more thorough understanding of the results of the research and its larger context. In order to provide an unbiased investigation of many stakeholders, there is a growing trend and consensus in qualitative research to embrace the concepts of relativism and realism (Hammersley, 2018). The many points of view contribute to qualitative research and offer important advantages. Retaining a realist perspective misses the ways in which researchers interpret their data, despite knowing that their data are factual and represent separate realities. According to relativism, there are several realities, none of which is more important than the others, and every perspective captures the truth regarding societal occurrences. (Andrews, 2012; Hammersley, 2018). This is essential for investigating and deciphering the fundamental causes influencing how individuals behave with complicated systems of energy (Woods, 2006; Yiridoe, 2014).

5.7. Research Design

The aim of the research design is to offer the research an appropriate structure. The choice of research strategy is one of the most important decisions within the method of research design because it dictates how pertinent data will be gathered for the purpose of the research. Nevertheless, there are several other interconnected decisions in the procedure (Aaker et al., 2000).

This research used a combination of methodologies. The initial phase of the research involved distributing a set of questionnaires that were well-organized to members of the public who were not specialists, as well as conducting semi-structured interviews with important experts from collaborating organisations, such as policy officials and industry experts.

With a stress on persons, organisations, and industries, this method offers the researchers with a profile of important characteristics of the phenomenon of concern that have been comprehensive. As a result, this study methodology allowed the researchers to collect information on the societal effects of the extraction of oil and gas and research in Nigeria's Niger Delta from a variety of participants. Additionally, this aided in the analysis of the reaction about the impact on the welfare of the community.

5.8. The Rationale of Mixed Method Approach

Appropriate qualitative and quantitative approach was used in the data gathering and analysis. Mixed method approach was regarded as beneficial for this research since it generated a detailed knowledge of the basis factors impacting the opinions of the general public along with specialists related to the extraction of oil and gas within region of Niger Delta. The mixed method approach was assumed as adequate for this research as it enabled more exhaustive examination of the research questions through the incorporation of personal experiences and expert explanations from the qualitative research and interviews with the statistical analysis generated by the survey data in the qualitative research. This enabled the investigator to develop the design of the method in a more detail examination (Creswell, 2014; Holloway and Todres, 2003; Choy, 2014; Neuman, 2006).

The key benefit of the qualitative approach was that it allowed participants to mention complex questions regarding the topic under investigation (Onwuegbuzie and Teddlie, 2003; Yauch and Steudel, 2003). The investigator was capable of deducing the development of themes or patterns from the research through the implementation of detailed interview strategies as well as open-ended questions because of the qualitative data. The quantitative information was acquired through pre-planned instruments (Howell, 2018). In order to evaluate and interpret the mindset measures and perspective, a statistical software was utilised. The use of the qualitative technique was advantageous in elucidating the viewpoints of those who took part within a restricted dataset, acknowledging their experiences within the research's environment, and framing the research from their views. The benefit of the quantitative data technique approach was that it helped to show the causal connection among ideas and variables, derive conclusions from a big population (dataset), and investigate the implications of modifications to an extensive sample (Creswell, 2014). Each of the complementing strategies under investigation saw strength increase and weakness decrease thanks to the combination method. Utilising the mixed method technique, it was simple to promote comparisons between groups and assess the degree of disagreement and agreement in the responses (Byrne, 2001; Choy, 2014). (Figure 19)

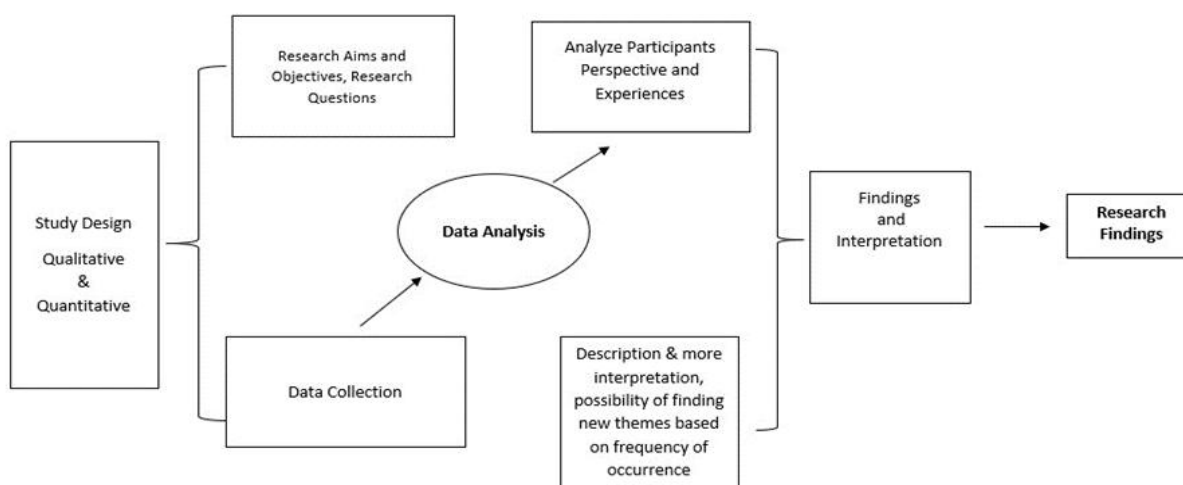


Figure 19: Workflow Mixed Methods Research (Choy, 2014)

5.9. Quantitative Study

5.9.1. Design of the Survey Questionnaire

The survey instrument for this instrument was generated for existing literature (e.g., Bodo, 2019; Ahenkan and OseiKojo, 2014; Marzec-WrOblewska *et al.*, 2012; Greyl, 2018; Enuoh and Inyang, 2014). In other words, this study would utilize measurement variables/items that have been validated in previous studies. Taking this methodological approach is important towards ensuring validity in this study (Opote *et al.*, 2013; Opote and Madichie, 2016). The self-completion brochure that served as the survey instrument had 28 items on a 5-point Likert scale, with the words "Strongly Agree" at one end and "Strongly Disagree" at the other. For instance, the "Strongly Disagree," "Agree," "Neither Agree nor Disagree," "Disagree," and "Strongly Agree" options took around thirty minutes to finish (appendix 4). The author of the study was able to easily quantify, compare, and summarise responses from participants and the social context of ethnic communities in connection to oil and gas extraction thanks to the 5-point Likert scale. Using an ordinal scale, respondents were questioned about how much they agreed or disagreed with a specific statement.

Perceptual instruments play a crucial role in investigating the effects of oil exploration to the extent that perception measurements are able to reflect the social context of the local population. Greider and Krannich (1985), relying on the same methodological and theoretical perspective, emphasised the significance of introducing a subjective construct that includes social aspects in energy/perception

research. The researchers made the case that a study that only considers objective constructs could overlook crucial issues—that is, the most significant processes and factors—when attempting to comprehend and interpret the community's social environment. Theodori (2009) pointed out that the influence of the social reality process might fluctuate between being "soft" and "hard." This research investigated how the general population views the societal effects of oil drilling in the Niger Delta. Although there are multiple settlements in the Niger Delta region, just one was chosen for the purposes of this study. The main petroleum firms that operate in Nigeria picked this neighbourhood since it is where their main activities are located. Compared to others, this particular community is more affected by the primary effects of oil exploration in the Niger Delta, both positively and negatively.

For the quantitative data analysis, a straightforward random and snowball sampling strategy was used (the distribution of the survey questionnaire). For the purpose of examining significant local social and environmental problems related to oil and gas exploration operations in the Niger Delta region, 260 questionnaires for surveys were distributed online between January and March 2022 to people who were chosen at random at different places in the Bodo area. Self-administered questionnaires were used to ensure that participants from a range of age groups participated in the study. 230 completed questionnaires, or 89% of the total number disseminated, were sent back to the researcher after being distributed (a sample of the questionnaire may be seen in the Appendix). This suggests that the research's instrument was objective, practical, interesting, and had a suitable sample size (Figure 20) (Johnson and Owens, 2003).

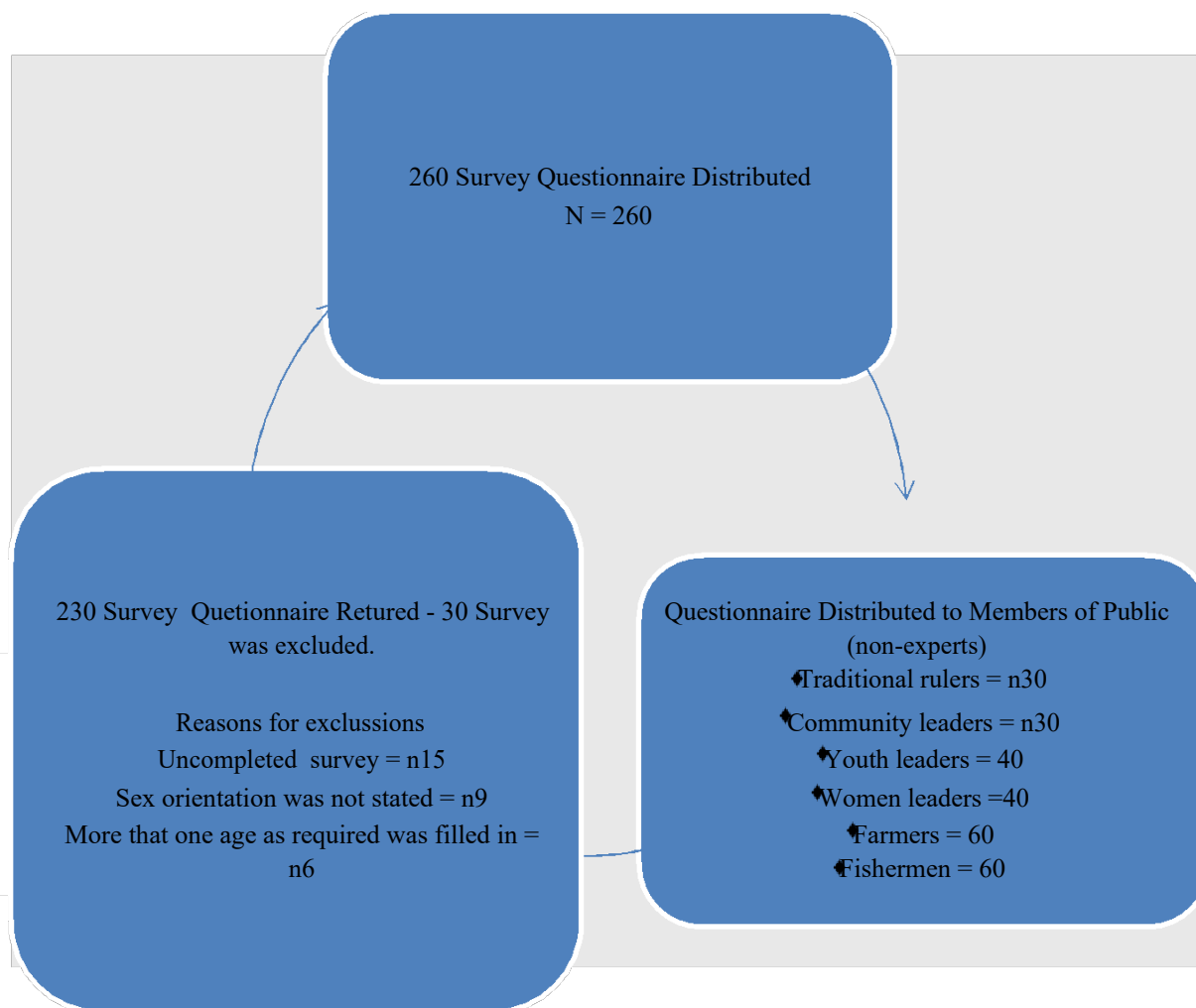


Figure 20: Flow Chart of Participants in the Survey

5.9.2. Survey Format

The main sources of data for this research were questionnaires, which were used as surveys in the present research. The questionnaire was created by the researcher and assessed by my research supervisors (Dr Mary Kelly and Professor Garvin Gilmore) in the Department of Geology, Geography and Environment, School of Engineering and Environment, Kingston University London.

As was previously mentioned, the researcher used a set of questions from Howell's (2018) research and adjusted them to gauge the responses of respondents on oil and gas development, considering both its possible drawbacks and advantages. The survey instrument is summarised in the section below. Table 10

breaks down the survey questionnaire's design into the following elements (the survey questionnaire may be found in Appendix 4).

- The demographic details of the participant, such as age, ethnicity, employment, level of education, and income, were covered in Section 1.
- Data on how the public views and experiences the effects of oil and gas development, as well as the environmental and financial advantages, is covered in Section 2.
- The opinions of the participants on the social effects of oil and gas development in the area were the main topic of Section 3.
- The awareness of the participants on the roles played by oil companies in resource governance, justice for society and the environment, stakeholder involvement, and misuse of the environment was the main focus of Section 4.

Table 1: Research Instrument Development – Survey

Section	Research Instrument Development
1	Age
2	Marital status
3	Sex
4	Occupation
5	Monthly income
6	Educational qualification
7	Ethnic group
8	Community perception of Risks and Benefits
9	Public Access to Information
10	Stakeholder Engagement and Participation

11	Governance
12	Communities concerns about oil exploration activities.

5.9.3. Quantitative Data Analysis - Kruskal–Wallis (KW) Test

The data was entered and analysed utilising SPSS version 27. In order to produce reliable statistical conclusions, the Kruskal-Wallis test is a nonparametric technique that is employed to analyse the differences, similarities, as well as relationship between two or more independent samples (mostly ordinal data samples and at least one measurement variable) of equal or different sample size (Figure 19). Whenever the sample data fails to meet the ANOVA requirements of normality and the test of differences among the variables and multiple groups, the test operates under restricted theoretical assumptions. Considering the small sample size ($n=260$ people) that was obtained for the quantitative investigation, it was also beneficial to do this analysis.

The data procedure included test statistics of H (i.e., the variance of the rankings among the ethnic groups) after calculating the mean ranks for every one of the four ethnic communities (Igbo, Ibibio, Ikwere, Annang, Ijaw, Bahumono, Ejagham, Efik, Oron). H is roughly the distributed chi-square value in a statistical perspective. The research's level of statistical significance, shown by $p = .05$, indicates a 5% probability of detecting a difference. The likelihood of discovering the observed variable whenever a null hypothesis (H_0) is accepted or held true is known as the p-value, and it is less than 0.05.

According to the null hypothesis, there was no difference or effect between the groups or set of variables in the statistical observations. On the other hand, an observation that showed certain impacts or differences ($p > 0.05$) is what is known as an alternative hypothesis (H_1) (Goldstein, 2011; Hazra and Gogtay, 2016; Ostertagova et al., 2014). These findings then served as the foundation for the quantitative research's interpretation.

5.10. Qualitative Study

5.10.1. Design of the Research Instrument- Qualitative Study

The schedule for the interview consists of twelve main components, each with a set of suggested questions within a structured interview style (see to Table 2 regarding the list of questions).

Table 2: Research Instrument Development – Interview:

Section	Research Instrument Development
1	Age
2	Marital status
3	Sex
4	Occupation
5	Monthly income
6	Educational qualification
7	Ethnic group
8	Community perception of Risks and Benefits
9	Public Access to Information
10	Stakeholder Engagement and Participation
11	Government policies
12	Communities' concerns about oil exploration activities.

5.11. Data Collection Instruments

Interviews involving the participants served as the main measuring tool used in the current research, delivered by the researcher. 18 individuals that were chosen for this research were interviewed online. In order to elicit comprehensive answers from participants, open-ended and semi-structured interview questions were implemented (Barnham, 2015). According to (Patton, 2015), employing an interview strategy with semi-structured and open-ended questions facilitated the elicitation of detailed replies from research participants. Interviewing was a useful method for learning about social problems from the actual experiences of individuals.

Eighteen open-ended and semi-structured questions were incorporated in the interview procedure used for the current study in order to inquire about topics related to the main research question. Upon request, all unprocessed interview data will be made accessible.

Authenticity, trustworthiness, and dependability of the results are important factors during any qualitative investigation. Follow-up questions were allowed due to the semi-structured interview methodology and open-ended questions, which allowed for the collection of sufficient data from respondents to guarantee recurrent themes. According to Gustavsson-Jertfel et al. (2016), open-ended questions allow participants to openly react to the questions as well as to explain their answers as needed.

5.12. Selection Criteria and Qualitative Data Collection Technique

The researcher found professional linkages of petroleum and gas sector specialists located throughout Nigeria, including geologists, engineers, and policy experts. Exploratory conversations helped identify a few of the individuals. The individuals chosen have a wide range of pertinent expertise in policymaking, the natural gas and oil industries, and the research environment. For the purpose of the research, a purposive sampling strategy was utilised to find and choose interview subjects who would be knowledgeable about the topic being studied (Finley, 2014). According to Yin (2017), a deliberate sample facilitates the acquisition of knowledge and a more profound comprehension of a phenomenon or occurrence. In the current study, I selected individuals using a deliberate sample technique, as employed in previous research by Nag and Gioia (2012) as well as Seawright et al. (2013).

The total number of participants for a qualitative research investigation is seldom suggested in the literature (Saunders and Townsend, 2016, Baker and Edwards, 2012). But according to the research, a qualitative investigation needs a sufficient number of respondents overall to attain saturation in data (Onwuegbuzie and Leech, 2005). This means that sampling till saturation is reached is the appropriate quantity to support a qualitative research study (Patton, 2015). The interview process was strengthened, and the research's validity was increased by bringing in a diverse group of policymakers along with technical specialists.

Academics made a variety of suggestions regarding the right number of samples in a case study approach. A sample size threshold of one and an acceptable sample size of twenty were suggested by Yin (2017). For this investigation, twenty volunteers were chosen. The total number of participants meets the guidelines set out by the IRB at Walden University. While Angel-Watford (2014) utilised a sample of 18 to investigate succession planning within local employment organisations in Texas, Skelton (2015) utilised a sample of

10 to investigate information management methods in small-scale service enterprises. Over the course of three months, during January to March 2022, eighteen (n=18) interviews with respondents were performed at several places in Bodo, in the Nigerian Niger Delta area. The online interview continued for around forty minutes, up to saturation was achieved. The audio recording of the English-language interview was done. Those who participated were invited to speak for themselves and, if they wished to expand their replies, offer context-specific remarks and points of view.

In order to facilitate positive working relationships, Morse and Coulehan (2015) stressed the research's confidentiality as well as the significance of giving respondents a sense of centrality and assurance that the information they divulge will be advantageous to their companies, the industry, and themselves. By eliminating obstacles related to language and operating within a similar framework of comprehending issues and concepts, the interviewer and interviewees were able to establish a positive rapport with each other by utilising the connection with interaction and public relations procedures (Doykos et al., 2014). In addition, this research used anonymity and secrecy which were important for gaining the trust of the participants (Holgate et al., 2014).

On the contrary, data saturation was the basic issue which was related to the sample size issue within qualitative research. Data saturation worked as a quality measure and the factor for appropriate sample size throughout qualitative research (Morse, 2015). Fusch and Ness (2015) have defined saturation of data as the technique for ensuring that appropriate, high-quality data are acquired for the research. The selection of appropriate interview subjects' sample to prevent the generation of new information from interviews with the similar people is called as data saturation. Knowing whether to apply data saturation as well as when it happened was one of the problems with the technique.

The interviews were conducted online but were recorded using an audio recorder by the researcher so that they can be handwritten and transcribed later on. Carr (2014) suggested that digital recording of interviews be done. In order to ensure the authenticity and trustworthiness of the data collected from the interviews, a diary with handwritten notes taken throughout the interviews was retained as a backup to the audio recordings of the interviews (Thomas, 2016). The examination of concepts, ideas, and comprehension of the experiences, views, and perspectives expressed throughout the interviews was aided by the handwritten notes (Morse, 2015). Interview summaries made it easier to code and relate to each individual.

All recorded data was converted to text and handwritten comments were added as a complement to the recorded data. The recorded materials were translated either right away, or within 72 hours after the interviews, so order to preserve the respondent's original contexts, themes, and interpretations. In order to ensure integrity of meaning, every interview's audio recording and transcript were compared. Matching aided in guaranteeing data analysis quality. The transcripts were examined, processed, typed, and sent to the respondents via email for approval or to provide any missing information in order to guarantee correctness and authenticity. Leung (2015) observed that maintaining uniformity in the data processing procedure enhances the research's dependability and reliability. According to Connelly (2016), verbatim reports, uniform formatting, and the use of a similar word form as well as text structure are all ways to ensure accuracy in transmission mechanisms.

5.13. Pilot Study

Academics advise doing a pilot research to validate the test instrument (Leung, 2015). Before the questionnaires were finally distributed, a pilot study was conducted in this study to pre-test the research instrument for this study (Baker 1994). Following methodological precedence (Opute, 2008; Opute et al, 2013; Opute and Madichie, 2016) pilot testing of the survey instrument for this study (summarised in Appendix 1) was conducted with 30 participants. The survey instrument (questionnaire) is structured on a five-point Likert scale. In addition to this, the pilot study of the interview guide was also done from 5 respondents to pre-test the instrument. Following methodological precedence (e.g., De Vaus, 1993; Opute et al, 2013; Opute and Madichie, 2016), the pilot study for this research would aim to achieve the following targets:

1. Create and evaluate the research instrument's suitability,
2. Assess whether the research tool is realistic and workable, and
3. Collect preliminary data.

Careful steps would be taken to ensure the appropriateness of the research instrument for exploring the geographical setting for this study. For example, respondents would be allowed to offer suggestions towards enhancing the wordings of the questions to their understanding. The primary survey was to begin when the questionnaires had been revised and final changes created, taking into account respondent ideas to guarantee the accuracy, reliability, and validity of the questions included in the questionnaires.

The peer reviews contributed towards improving and using the instrument within the research. Gustafsson-Jertfelt et al. (2016) state that the use of open-ended questions and semi-structured interview

within this research enables for follow-up investigations which lead to inadequate information from respondents to ensure recurring themes. For repeated themes, the information acquired from the interviews was composed, categorised and analysed.

According to Barry et al. (2014), the categorisation and hand-coding of these topics made the research more consistent and accurate resulting in the improved validity and reliability of research. Along with the manual coding, the usage of qualitative data analysis programs such as NVivo helped in improving the dependability of the coding process (Woods et al., 2016). The utilisation of NVivo software helped in performing coding and data analysis constantly. Moreover, the secondary data in the research was acquired from the investigation of corporate papers and was combined with the main data acquired from interviews (Wilson, 2014, Woods et al., 2016). The combination of secondary and primary information enhanced the validity and reliability of the research (Varpio *et al.*, 2017).

The 28 semi-structured interview questions which were utilised for obtaining the primary data were well-received by the research participants. In order to code, organise and analyse the data that was obtained, NVivo 12 analytic software was used. The utilisation of NVivo software for the analysis of data helped in the identification of themes from interview responses which encompasses the key data of the research. After that, the information acquired from the interview questions was cross-referenced with the information obtained from the papers which the two case study businesses had analysed and made accessible publicly (Houghton *et al.*, 2015).

5.14. Data Organization Technique

In order to access and recognise the stored material, the transcripts were appropriately tagged. Moreover, the data acquired through the interviews was also labelled, archived and recorded. For avoiding data loss, backup files were also created within the computer storage facilities (Carr, 2014). The data was saved within the order in which interviews were carried out.

Considering the recommendation of the research of Connelly (2016), adequate labelling along with line numbering were used. Within a diary, the information from the files was cross-referenced with the written notes from the interviews (Yin, 2017). The historical arrangement of the notes ensured sufficient retention of the data strengthening the integrity of the research (Morse, 2015). According to Thomas (2016), the data gathered, audio recordings, and notes made are all included in the research's database and need to be preserved appropriately. Coded labels were used to record data that was directly connected to the responses given by participants (Noble and Smith, 2015).

5.15. Data Analysis

Within qualitative case study designs, triangulation is used by researchers to gain a deeper knowledge of the topic under investigation. The research's validity and trustworthiness were increased using triangulation (Varpio et al., 2017). Merging of data and conclusions in a study was made possible by triangulation (Fusch and Ness, 2015). In order to achieve thoroughness and enhance the credibility and validity of the findings, four distinctive triangular techniques that were utilised by the researchers were notified by Hussein (2015). These four techniques include data triangulation, theoretical triangulation, investigator triangulation as well as analytic triangulation. Along with this, the investigators have recognised methodological triangulation which requires the integration of two different research methodologies for examining the same problem (Hussein, 2015; Thomas, 2016).

For the generation of reliable data and enhancing the reliability and credibility of the research, I used the methodological triangulation (Eid and Elbanna, 2018). Hussein (2015) asserts methodological triangulation as the procedure of studying a phenomena making use of two or more different methodological techniques. Utilising two data sources, I employed methodological triangulation to guarantee comprehensive data gathering that would bolster the research's validity and accuracy.

5.16. Triangulation and Computer Aided Analysis

For ensuring attention to detail, validation and generation of reliable research data, the investigator utilised methodological triangulation. Methodological triangulation encompassed making use of various data sources for the evaluation of a phenomena within the similar research and triangulation of the resultant data for ensuring an inclusiveness of data and conclusions (Hussein, 2015; Thomas, 2016). This research used methodological triangulation which involved the usage of data from respondent interview and research survey. Morse (2015) mentioned the usage of triangulation along with member verification and widespread description for developing thoroughness within the research for improving reliability and validity.

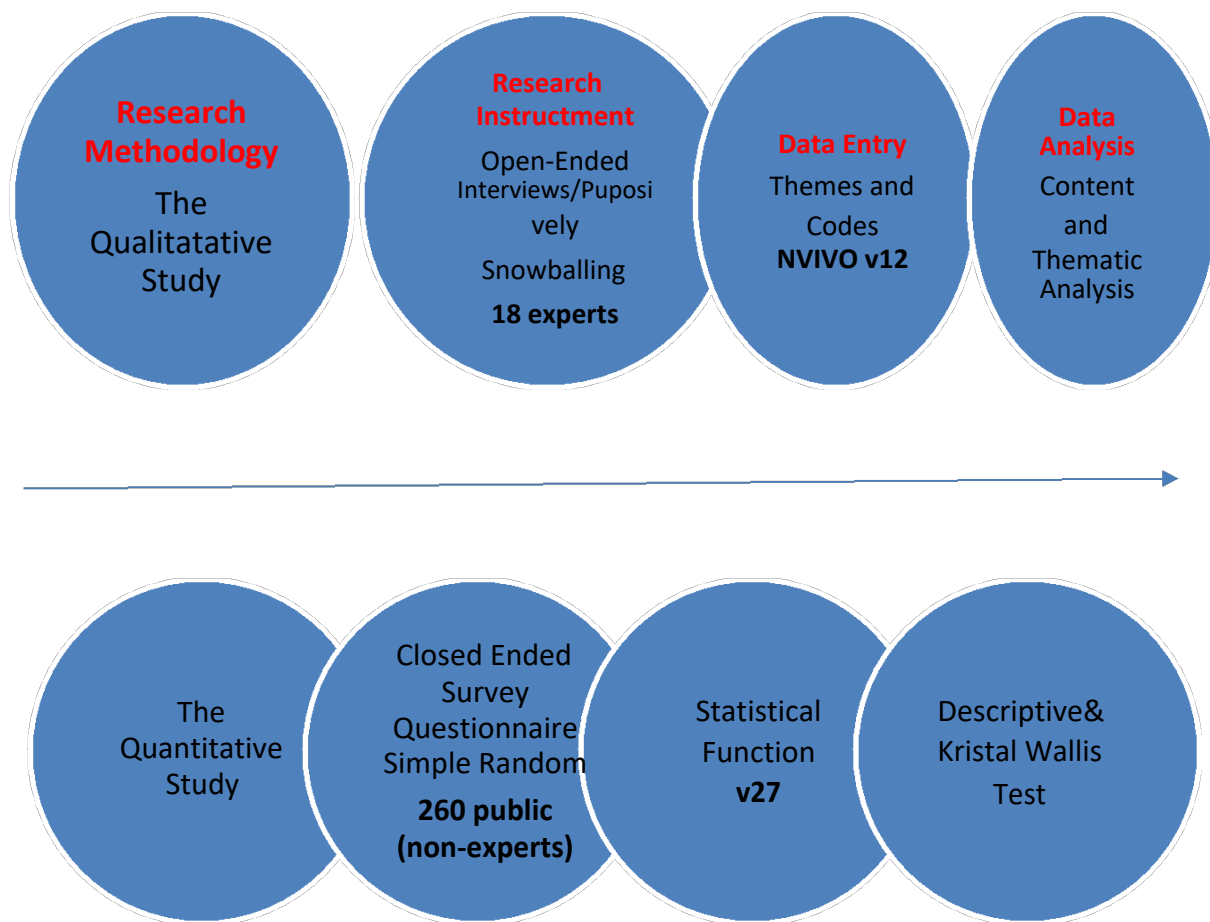


Figure 21: Data Design and Processing

5.17. Data Transcription

For the generation of data for this research, the interviews with the participants of the research were transcribed. Moreover, the information provided by the participants was proved by the journal notes which were made during the interviews. Furthermore, the generation of firm data, an efficient reliable procedure of transcription of interview stimulated positive engagement and an efficient collaboration with the individuals who participated. Although, I used a computer program to help in coding and analysis of the information which was generated (Lucas et al., 2014), it was my responsibility to develop a reliable and an authentic case study report. I also made use of slow-motion replay device for listening to the interview tapes various times in line with the findings of Dasgupta (2015) to ensure adequate transcription. Each of the transcription was carried out approximately 72 hours after the interview with

the participant. Microsoft Word was utilised for typing and saving the transcription of the interview. In order to maintain secrecy, the names of the participants were coded, for instance P1-P18. Based on the suggestions of Cole and Harbour (2015), I made use of colour coding for the identification of themes within the interview transcripts. For ensuring adequate analysis has been carried out, this process ensure that themes from the acquired data are identified, categorised and coded with regards to the main research topic (Thomas, 2016; Vohra, 2014).

Using the NVivo programme. Using the NVivo software 20 edition, information gathered from the interviews involving the 18 participants was coded and evaluated. Digital recordings of the interview data were made (Carr, 2014). The digital recording served as the foundation for the procedure of analysis and coding. Using NVivo software to code the data enabled me to create themes and organise the data into categories. According to Yin (2013a), the analytical approaches and methods used must be pertinent to answering the study issue. NVivo software ensured uniformity in the coding and analysis process, even though it was my job to find, classify, and code the themes related to the study issue.

Software for computer-assisted qualitative analysis, like NVivo, additionally contributed to quality assurance (Lucas et al., 2015). While Atlas, which is employed in both qualitative and quantitative research, NVivo is primarily a qualitative analysis tool. Software that works with Windows is also NVivo. Lucas et al. (2015) claimed that the credibility of a research can be built by computer-assisted qualitative data analysis software (CAQDAS), such as NVivo.

Stakeholder theory served as the research's conceptual foundation. Stakeholder engagement, corporate social responsibility (CSR), and stakeholder management were additional important ideas in the research. The themes found in this study were influenced by the conceptual framework as well as the major concepts found in the investigation. In order to interview the individuals who were participating in the research, the research process encompassed eighteen semi-structured and open-ended questions.

5.18. Qualitative Data Analysis – Content and Thematic Analysis

During the in-depth interview, variables impacting experts' perceptions and behaviours regarding oil and gas exploitation in the Niger Delta region were discussed. Qualitative software (NVivo v20) was used to transcribe the data ($n=18$ interview transcripts) and then apply it to thematic content analysis (Table 3, Figure 22). In order to find themes or recurring patterns of categories reflecting similar meanings, the data was analysed. The NVivo programme facilitated the identification of certain quotes from the audio transcripts, each one of which is labelled with a unique code that reflects the topic of the quotation. A

number of quotes were given unique codes, which made it possible for the researcher to spot any emerging themes or subtleties. We looked at the codes to see if there was a causal link or any emergent categories of meaning from the information set. Numerical indicators have been given to the codes, which indicate the frequency, number of relationships, and density (i.e., the degree of relevance or significance).

Table 3: Review of Steps used in Thematic and Content Analysis

Phase	Description of the process
Data Familiarisation	Data transcription reread the information and made notes on initial thoughts
Generated initial codes	Collected information pertinent to each code and systematically coded the most interesting elements of the data collection as a whole.
Searched themes	Sorted codes into prospective topics and acquired all information pertinent to each theme.
Reviewed themes	Created a thematic "map" of the analysis by verifying the themes work with reference to the coded extracts (Level 1) along with the whole data set (Level 2).
Finalised themes	Continuous analysis produced precise definitions and labels for each subject, as well as improved the details regarding every theme and the study's overall narrative.
Findings and outcomes	The last chance for examination. A professional report of the study was created using a selection of colourful, captivating extract samples and a final analysis of those extracts that was connected to the research topic and literature.

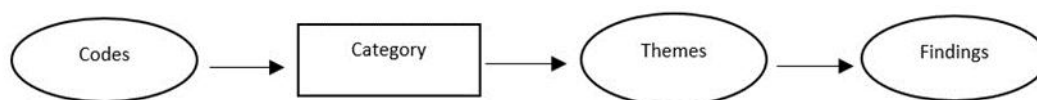


Figure 22: A streamlined Codes-to-Findings for the Qualitative Inquiry.

5.19. Reliability and Validity

The concepts of validity and reliability in a qualitative study are concerned with determining and confirming the adaptability, correctness, dependability, and reliability of the research's data and conclusions. According to Varpio et al. (2017), evaluating data from various sources utilising a qualitative research approach strengthened the research's internal and construct validity. Threats to authenticity, trustworthiness, and transferability were the researcher's top priorities in any empirical study (Onwuegbuzie and Corrigan, 2014). The plans and techniques utilised by the research's supporter were the main emphasis of proving validity and dependability (Anney, 2014; Yin, 2013b). Sarma (2015) pointed out that researchers make subjective decisions on the methods they would use to ensure validity and reliability in their study.

5.19.1. Reliability of data

Measurement reliability throughout time in addition to amongst the diverse elements in the instrument is confirmed by the reliability of measurements that defines the extent to which it is bias-free (error-free) [8]. The data's stability and uniformity have been examined by reliability analysis. When doing a reliability analysis, the researcher verified the exactness and accuracy of the measuring process. Although there are various definitions and methods for defining reliability, the idea becomes coherent in a number of contexts (Sekaran and Bougie, 2010). After a measurement produces identical results throughout the data processing phase, it fulfils the reliability criteria.

5.19.2. Validity

According to Babbie (2010), face validity is the subjective assessment that the instrument captures the relevant information that the instrument seeks to capture (Polit and Beck, 2008). It is an indication that the instrument seems to be a credible measure for certain variables. In order to improve clarity and broad appropriateness, the researcher made sure that ambiguities were removed when creating the instruments for this study by utilising the right terminology and concepts (Polit and Beck, 2008). In order

to confirm the validity of the measuring instruments and ascertain if they ought to be taken at face value, the researcher also presented the devices to the joint supervisor and research supervisor, who are both specialists in occupational health.

When developing the measurement devices for this investigation, the researcher was led by evaluated literature pertaining to adherence to occupational health and safety standards and data gathering methodologies. Additionally, the researcher was helped to prevent doubts regarding the content of the data collecting measuring tools by the pre-test research that was carried out afore the main study. The measuring tools were enhanced after a cautious examination by the statistician, the researcher's supervisor, and other joint specialists to make certain all study-related concepts were covered.

5.20. Ethical Considerations

Ethical issues are important issues that researchers must consider in the process of undertaking research (Creswell, 2003; Yin, 2003), and ethical issues elate to guidelines and best practice standards that must be followed towards ensuring that research is undertaken in a decent, organized manner that reflects integrity (Yin, 2003; Creswell et al, 2007). Blaikie and Priest (2019) assert that effective ethical practice requires voluntary involvement of the individuals who become a part, their informed consent and assurance that they can withdraw from participating in the research at any time. The procedure comprises protecting the participants' interests, privacy, as well as confidentiality in accordance with accepted norms and procedures of the Kingston University Data Protection Policy and Ethics Committee.

To match with ethical requirements for a study at this level, a number of relevant steps were taken in this study, namely:

1. Prior to conducting interviews or survey, ethical clearance was acquired from the School of Science, Engineering and Computing, and Department of Geology, Geography and Environment, Kingston University London.
2. In order to maintain confidentiality and privacy, the study instruments were not intended to collect private or sensitive information from the participants.
3. The participants were clearly informed about the purpose of this research and were assured that data collected for the purpose of this research would be held confidentially (e.g., Creswell, 2003, Yin, 2003). The identity of participants would be held confidential.
4. The participants in this study were informed that they can withdraw from this research at any time if they so wish. No participant was coerced into participating in this study (Creswell, 2003).

5. The people who participated in the study did not incur any unneeded or unreasonable risks as a result of their involvement, either psychologically or emotionally.
6. All participants in this study were of reasonable age (not minors).

5.21. Conclusion

The general structure of the study for the particular subject was represented by the research technique and design. The techniques and sources of data were employed for data collecting. This research process, which includes all factors and goes from problem conception to problem validation, indicates the whole research tactics and framework. It has established a basis for researchers on the formulation and framing of research technique. This indicates that it is beneficial to researchers to use it as a combination of the models and examples for the procedure of gathering research data, from the design of the problem statement to the final results. This research flow, in specific, aids novice researchers in understanding the research atmosphere and methods.

6. Chapter Six: Findings and Discussion

6.1. Introduction

Numerous complexes, varied, and interconnected factors impact perceptions and opinion towards the exploration and production of oil and gas. According to Whitmarsh et al. (2015), understanding the roles that perception plays in affecting behaviour connected to oil and gas development has been the subject of much academic and policy study over the past 10 years (McNally et al., 2018). This particular research addresses issues with the perception of risk related to the exploration and production of oil and gas, presented as a multidisciplinary examination. Given the potential benefits of oil and gas production as well as the extreme uncertainty around the hazards to the environment and human health, it has become crucial to investigate the fundamental factors influencing the views of both experts and general public.

The findings indicated that oil and gas development have its own benefits and drawbacks. Overall, the public is largely opposed to the activities of oil and gas exploration in the Bodo community and has demonstrated a high risk to human wellbeing and the environment, despite mixed responses of the

environmental experts. On the other hand, certain environmental experts and personnel from NOGs also oppose oil and gas exploration significantly, while government officials and employees support it significantly.

6.2. Quantitative Study

About 260 members of the Bodo community volunteered for the quantitative investigation. The quantitative data was collected using 28-item survey questionnaires with a 5-point Likert scale. These questions were adapted from a research instrument validated from similar studies.

6.2.1. Sociodemographic Profile

In this quantitative study, most of the people who participated are Ogonis (99%) and 1% are non-Ogoni's as illustrated in Figure 23. With regards to the ages 16% were 18 to 29 years, 46% were 30 to 49 years, 30% were 50 to 69 years, and 6% were 70 and above. With regards to marital status 23% were single(unmarried), 55% were married, 7% were single parents, 9% were widowed, 1% were divorced and 2% were separated. . With regard to occupations, participants came from a variety of background (Figure below). With regards to income the majority (60%) are earning less than 65k and above 38% are earning over 65k. With regards to education 29% attained bachelor's degree, 22% Higher National Diploma, 19% Secondary School Certificate and 14% attained master's degree.

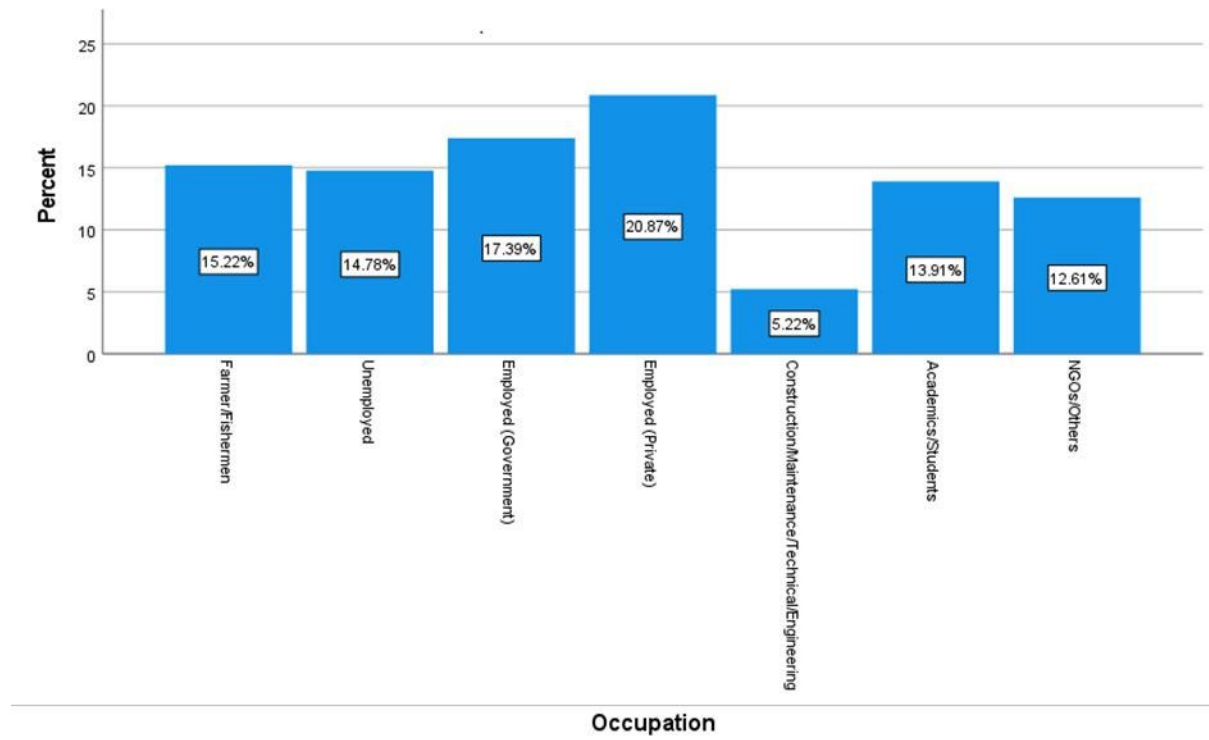


Figure 23: Occupation profile

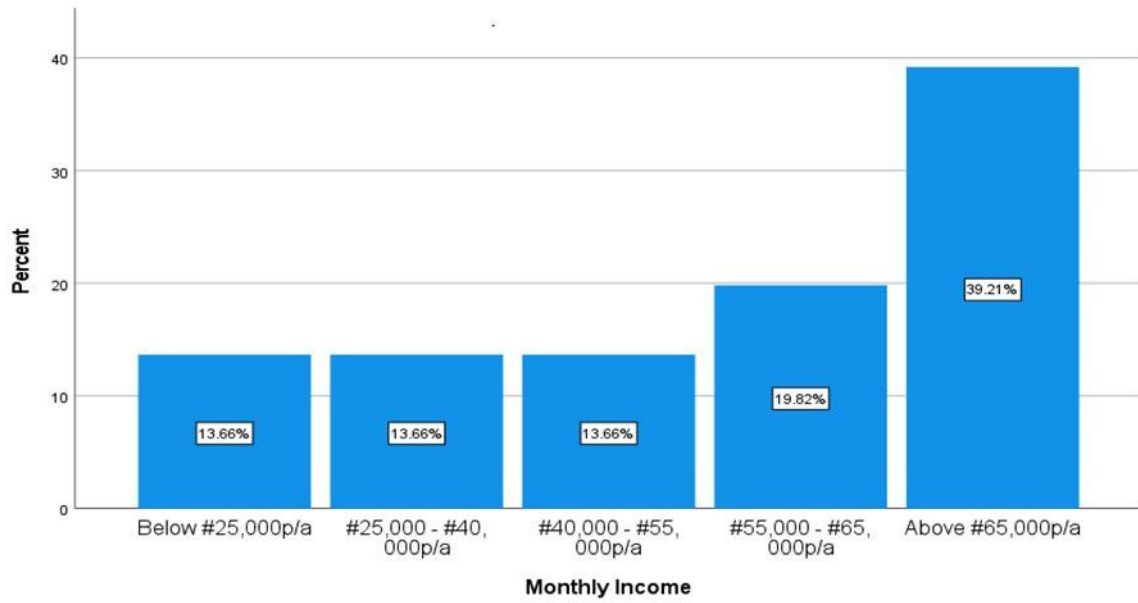


Figure 24: Monthly income profile

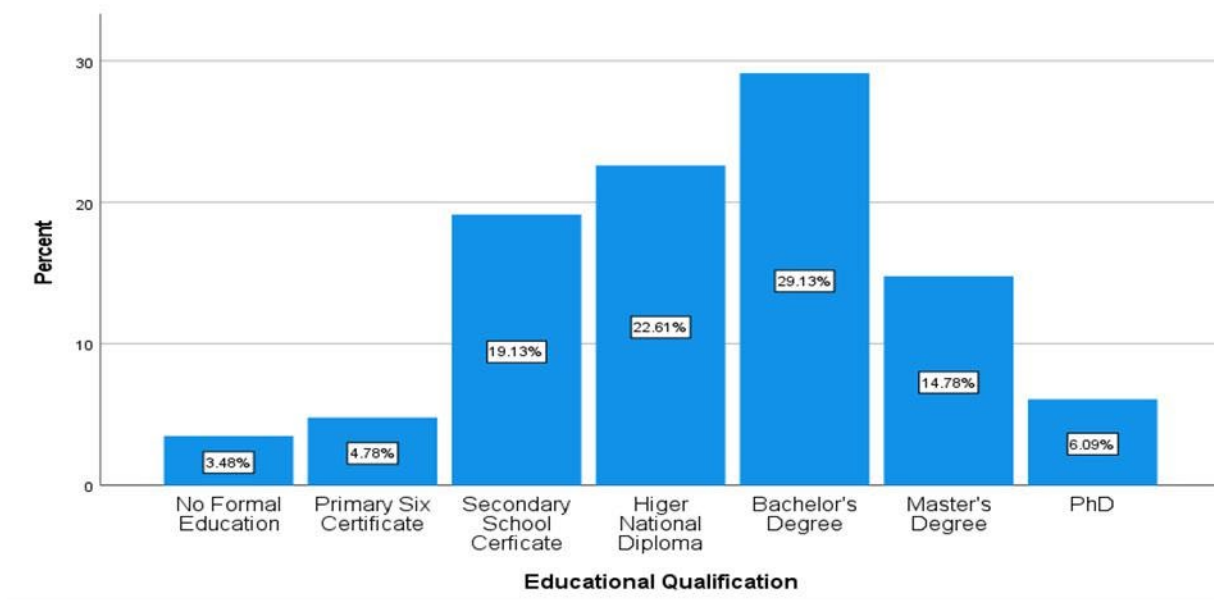


Figure 25: Educational qualification Profile

6.2.2. Descriptive Statistics

6.4.2.1 Community Perception

With regards to responses to the first section of the survey questions which were on perception.

Q8 (1). Most people agree that children in the oil producing region at greater risk deformities caused by suspected environmental pollution in the oilfields.

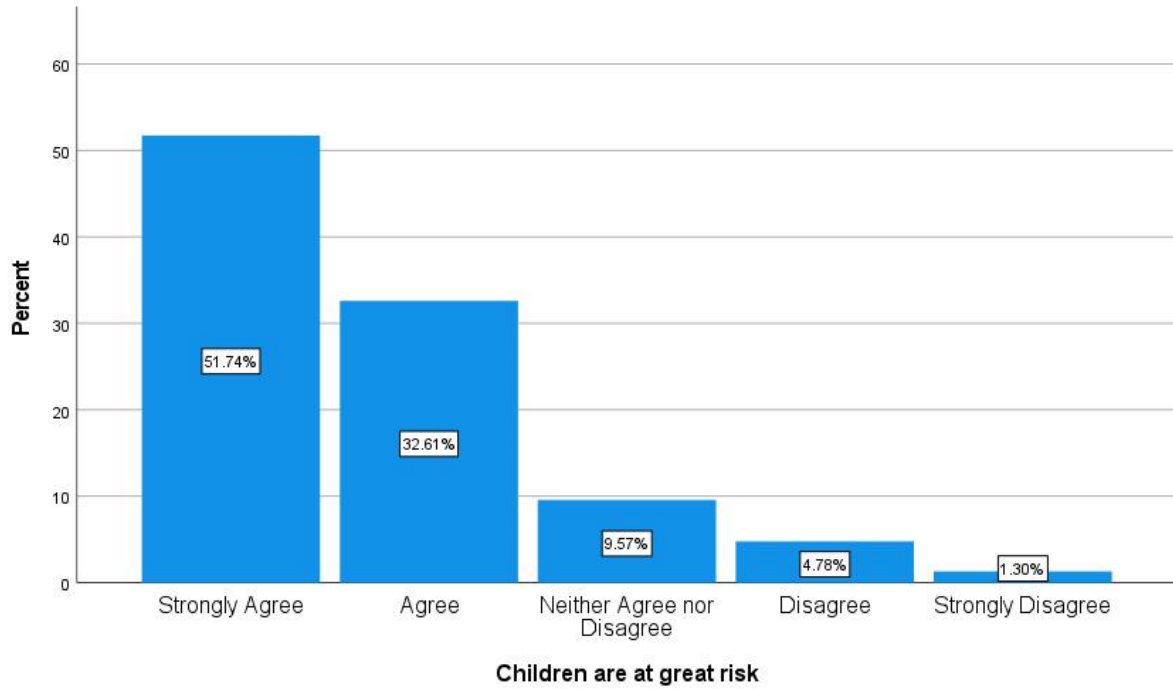


Figure 26: Children at greater risk

Q8(2). With regards to high rates of unemployment in the oil-producing region the responses were mixed. As many agreed and disagreed. For example, as illustrated in the graph below 42% of the respondents agreed while 45% disagreed.

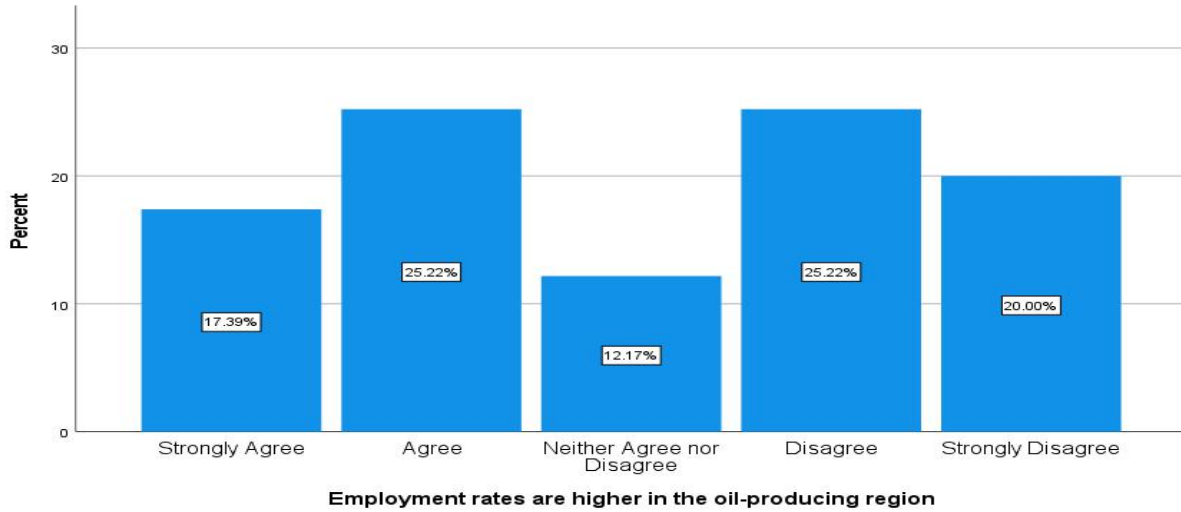


Figure 27: high rates of unemployment in the oil-producing region

Q8(3). On this question, the result from the survey indicates that, over 60% of the respondents expressed the view that oil and gas development projects resulted in the displacement of the host community. While 20% disagreed with this view and 17% neither agree nor disagreed.

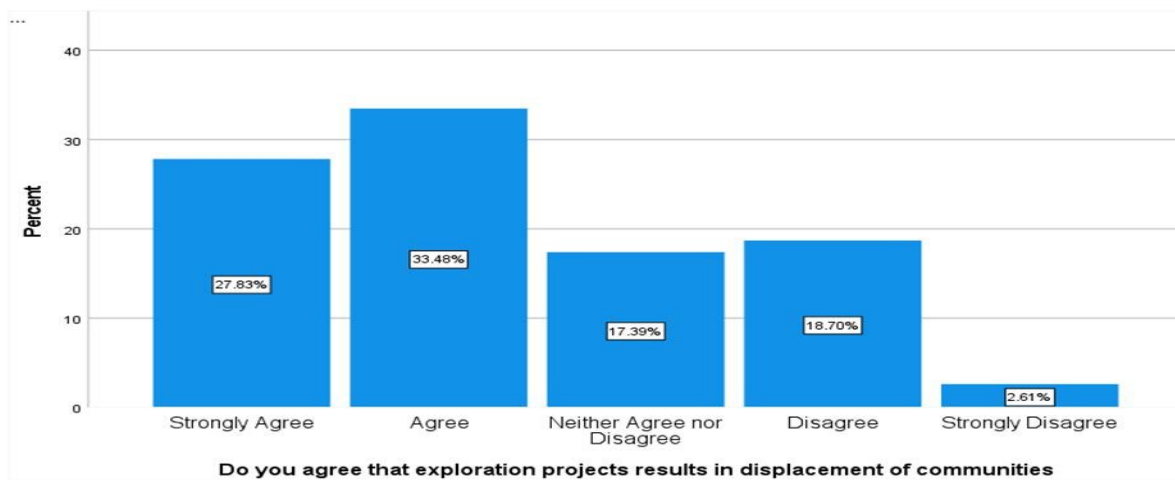


Figure 28:oil and gas development projects resulted in the displacement of the host community.

Q8(4). With regards to increased cost of living, most of the respondents (87%) agree that oil based environmental degradation has exacerbated the living standard of the locals in the South-South region of Nigeria. Over 80% of the respondents agree that increased living costs means many households are cutting back on essentials, with low-income households most at risk.

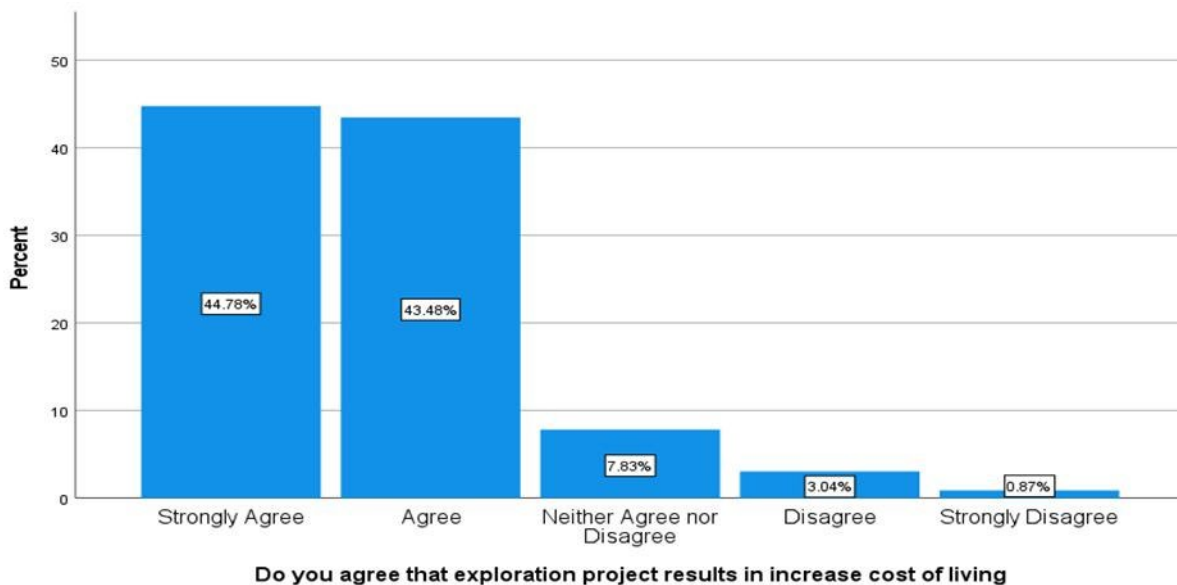


Figure 29: Exploration Projects and cost of living

Q8(5). As illustrated in the Table below, the findings obtained from this study strongly reveal that most of the people agree that oil and gas will be safe if properly regulated and monitored. Over 80% of the respondents agree that there is need for effective environmental legislation with adequate follow up.

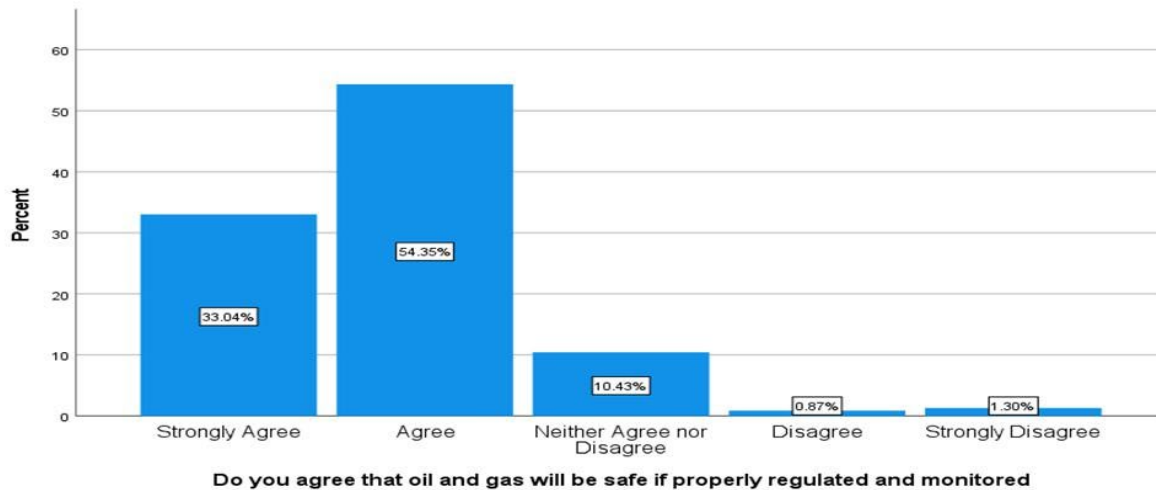


Figure 30: Oil and gas will be safe if properly regulated and monitored

Q8(6). With regards to peoples' perception, the result of the findings from the table below demonstrated that most of the people agree that exploration activities need to be more regulated. 35% strongly agree and 51% agree, while 4% disagree and 8% show no interest on the issue.

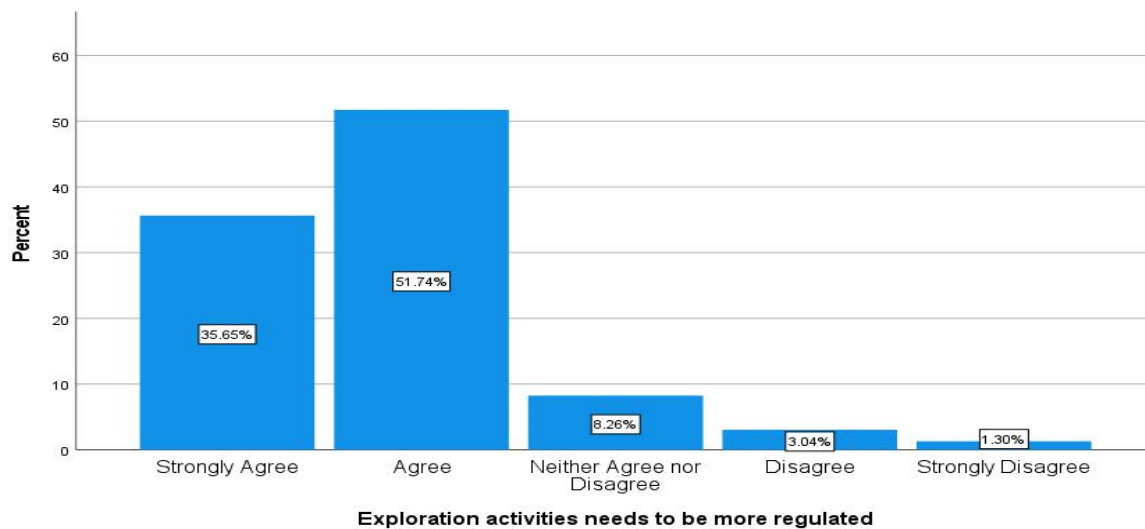


Figure 31: Exploration activities need to be more regulated

Q8(7). With regards to Nigerian economy, over 70% of the people agree that oil discovery brought a great wealth to Nigeria, while about 8% disagree and 19% show no interest on the issue.

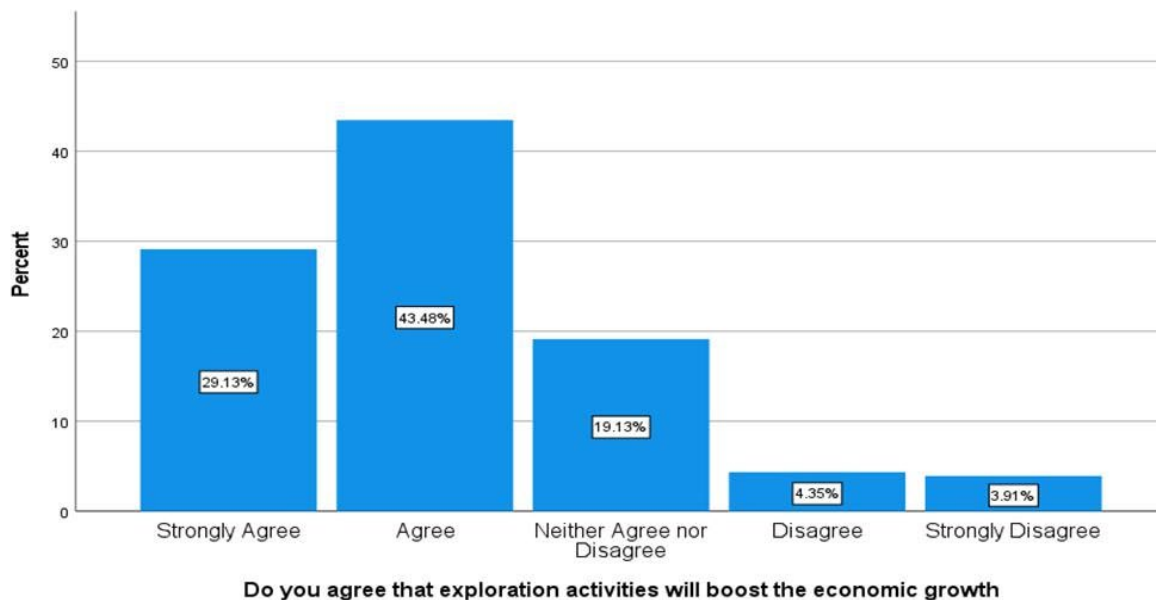


Figure 32: oil discovery brought a great wealth to Nigeria

Q8(8). On this question, the result from the survey indicates that over 60% of the population agree that oil and gas explorations are biggest threat to our existence and the was based on their perceptions towards these activities, while 13% disagree, 5% strongly disagree and 14% neither agree nor disagree.

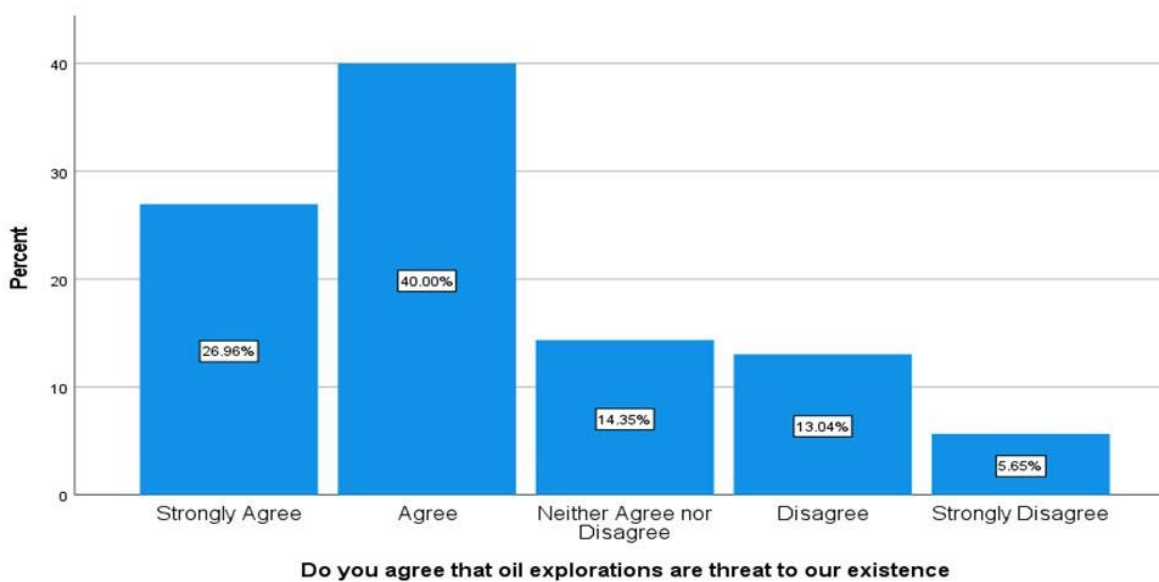


Figure 33: oil and gas explorations are biggest threat to our existence

Q8(9). The findings from this study provided useful insights to the provision of social amenities in Niger Delta communities. With regards to responses on perceptions most respondents agree that the oil and gas projects have significantly improved social amenities in the Niger delta region with over 60% agreed and 10% disagreed.

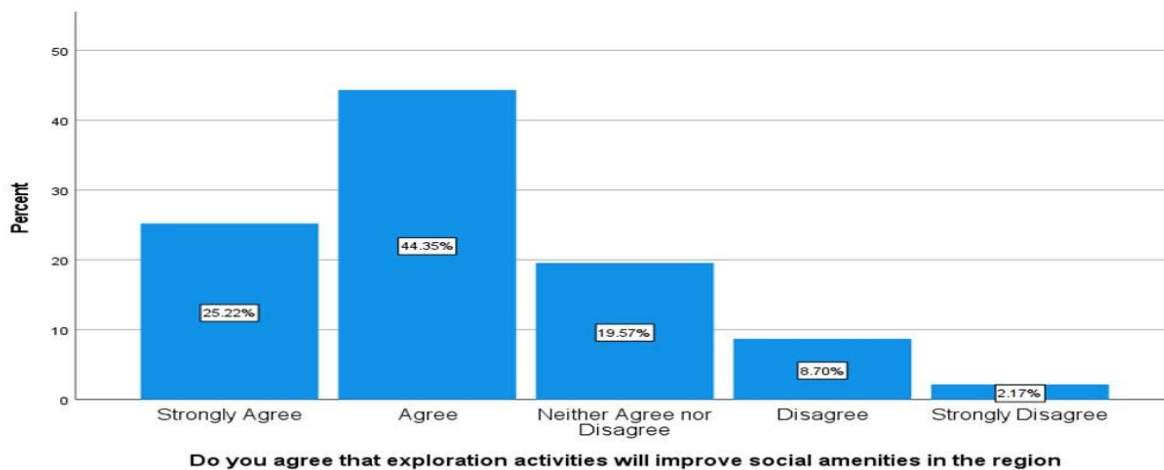


Figure 34: provision of social amenities in Niger Delta communities

Q8(10). With regards to increased rural-urban migration in the region, most people (79%) agree that with increasing soil infertility due to the destruction of agricultural productivity, farmer have been forced to abandon their land, to seek illegitimate alternative means of livelihood with the increase in rural-urban migration. From respondent's perspectives, over 70% of them agree that pollution the water, damaging aquatic and land resources is the primary reason for rural-urban migration.

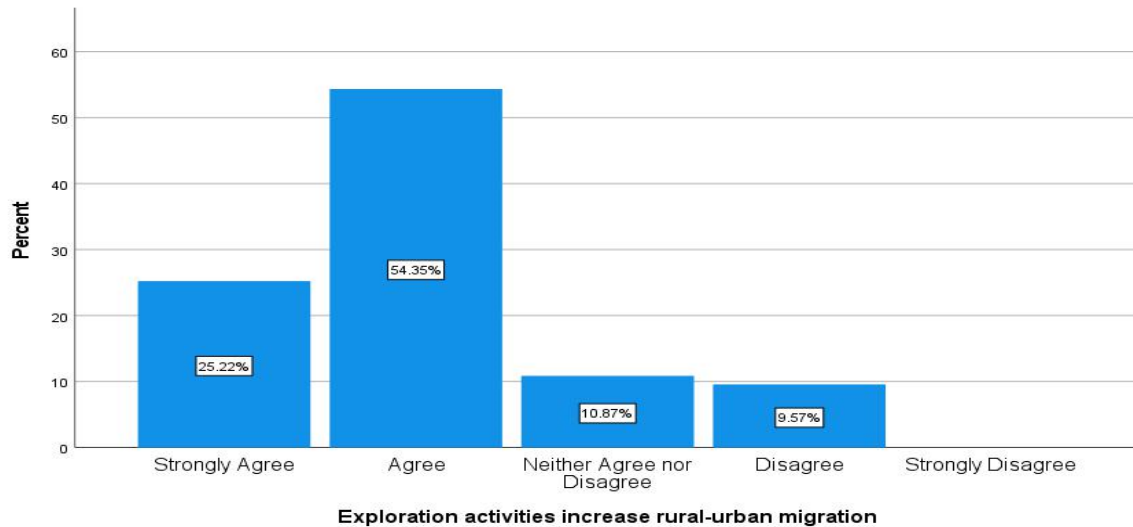


Figure 35: the increase in rural-urban migration

Q8(11). With regards to preferred energy source most people agree that switching to renewable energy will benefit the society more, with over 80% of respondents showing their support for it.

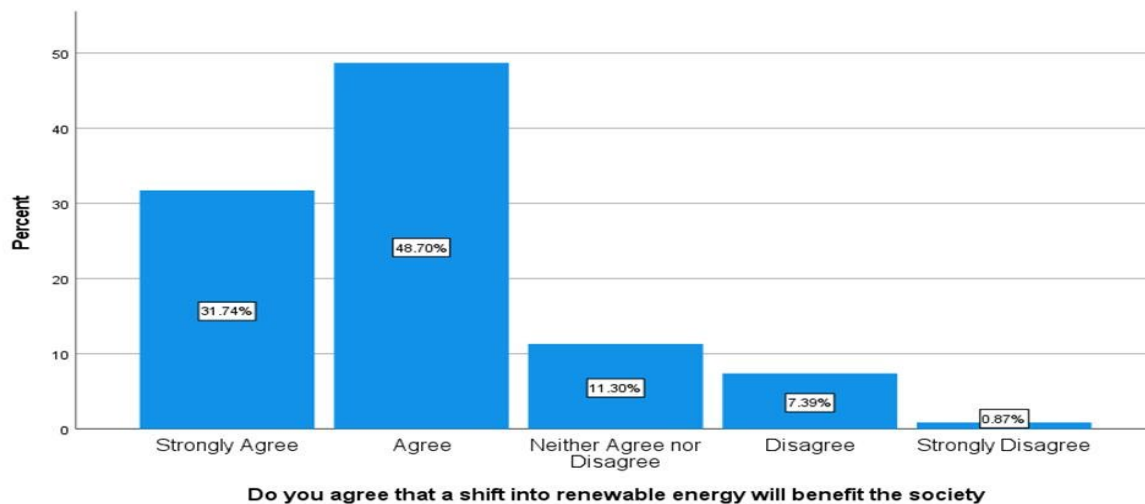


Figure 36: switching to renewable energy will benefit the society more

Q8(12). Most people agree that statutory laws and regulations are ineffective in Nigeria. Over 60% of the respondents agreed that despite the existence of many regulations and enforcement and monitoring institutions, environmental pollution caused by corporate activities continue to persist and has remained unabated while 20% disagreed.

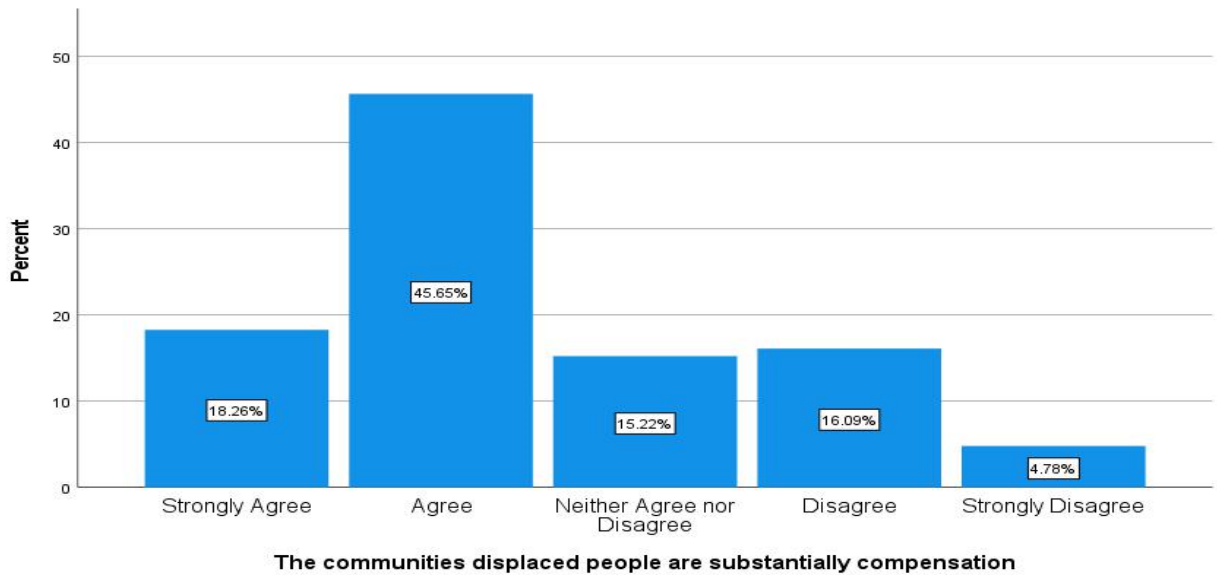


Figure 37: Statutory laws and regulations are ineffective in Nigeria

Q8(13). Drawing from participants' responses to question in the graph below, the findings from survey evidenced the importance of improved understanding of sustainability for delivering sustained social change. Overall, 80% of the people agree that corporate social responsibility can play crucial roles in the life of landowners, while 6% disagree and 11% neither agree nor disagree .

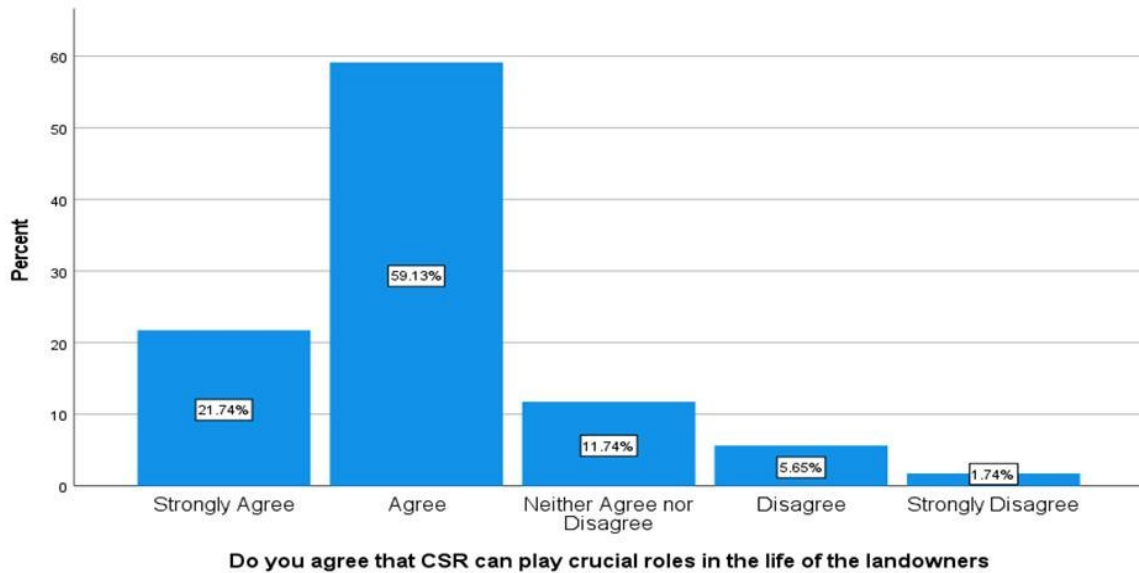


Figure 38: Improved understanding of sustainability for delivering sustained social change.

Q9(1). With regards to water pollution most people agreed that all the water in the have been polluted. Result of the findings has suggested that most of the people agree that many of the children were born with deformities caused by suspected environmental pollution in the oilfields as shown in the table below.

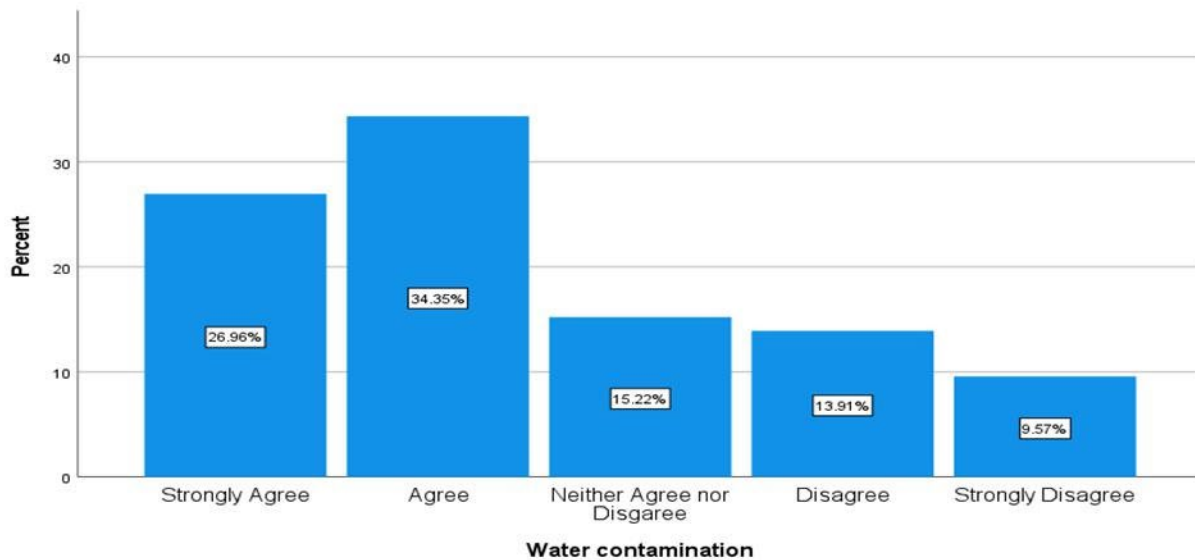


Figure 39: Water contamination

Q9(2) Opinions of respondents in the questionnaire survey differ on if the air pollution in the region resulted from exploration activities or not. Overall, over 50% of the respondents agreed and 22% disagree while 15% in were not sure of their opinion.

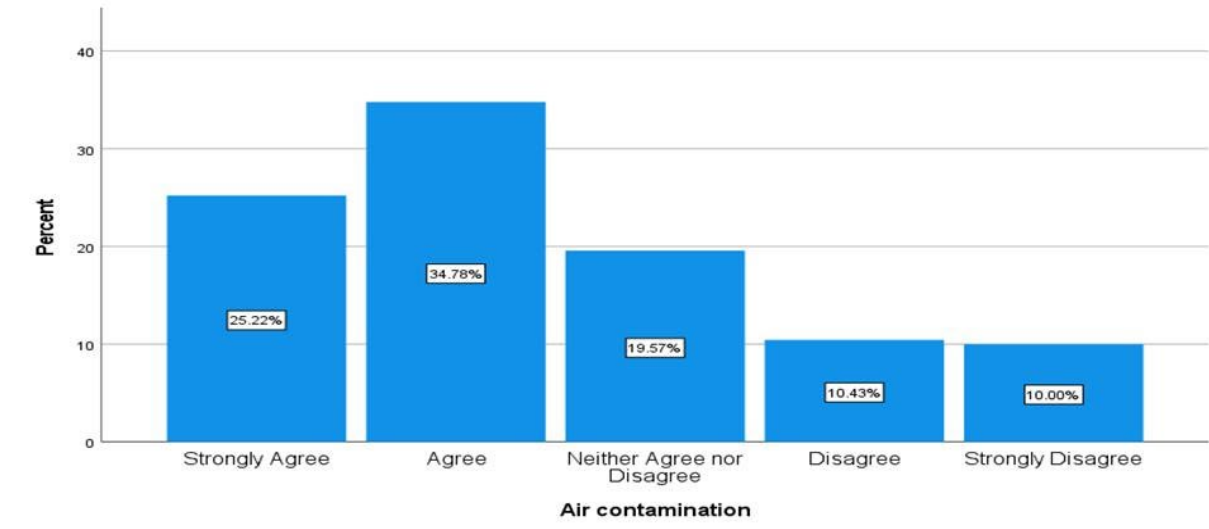


Figure 40: Air Contamination

Q9(3). With regards to health impacts of oil exploration impacts in the Niger delta region, most people agreed (18% strongly agree and 36% agree). Over 50% of participants agreed that majority of the locals depend on untreated surface water and wells, which leads to health problems from waterborne diseases.

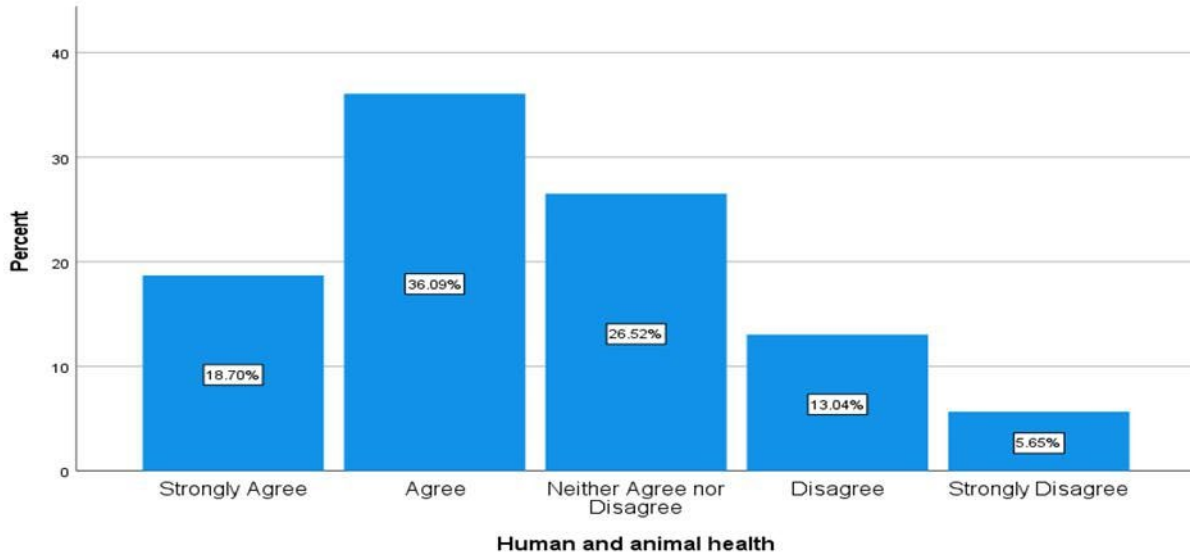


Figure 41: Human and Animal health

Q9(4). On the question if exploration activities are threat to existing economies or not, most people agree that agreed. 16% respondents strongly agreed, 35% agreed, 18% agreed, 7% strongly disagreed and 21% neither agreed nor disagreed.

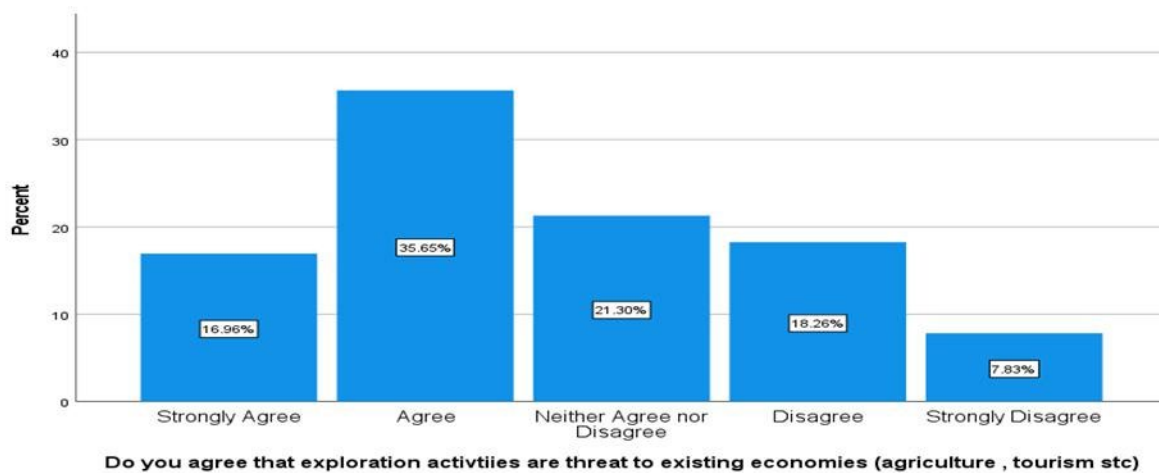


Figure 42: Exploration activities are threat to existing economies

Q9(5). Most people agreed that water pollution, damaging aquatic and land resources is the primary reason for rural-urban migration. With increasing soil infertility due to the destruction of soil micro-organisms, and dwindling agricultural productivity, fishermen have been forced to abandon their land, to seek illegitimate alternative means of livelihood. With 25% strongly agreed and 54% agreed.

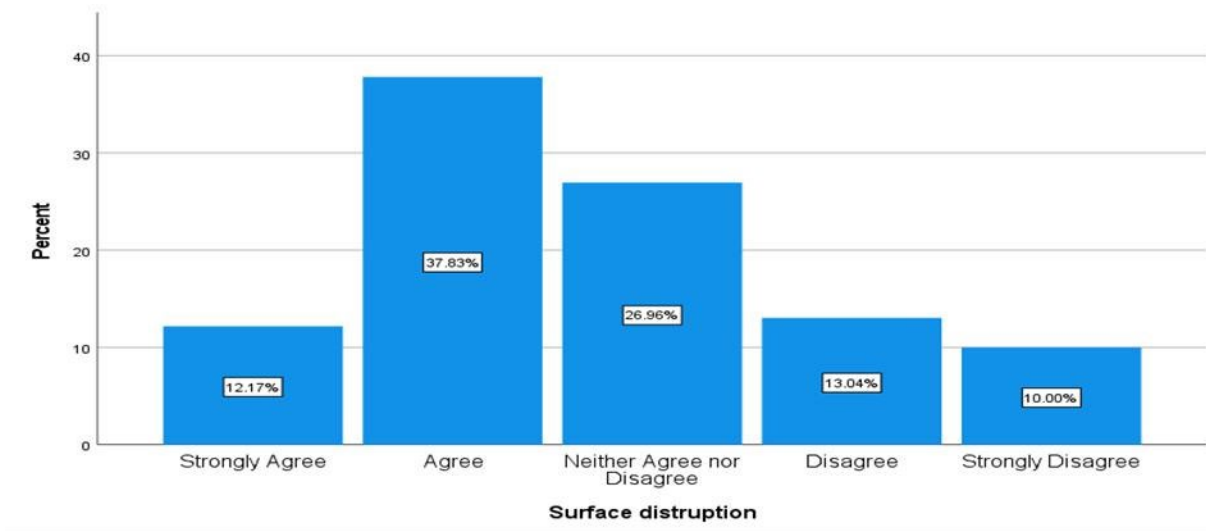


Figure 43: Surface disruption

Q9(6). Most of the respondents to the survey questionnaires voiced their outrage of government total neglect they said most of the infrastructural facilities available in their communities were provided by the oil companies and non from the local, state or federal governments. Overall, 52% of the respondents agreed, while 20% disagreed.

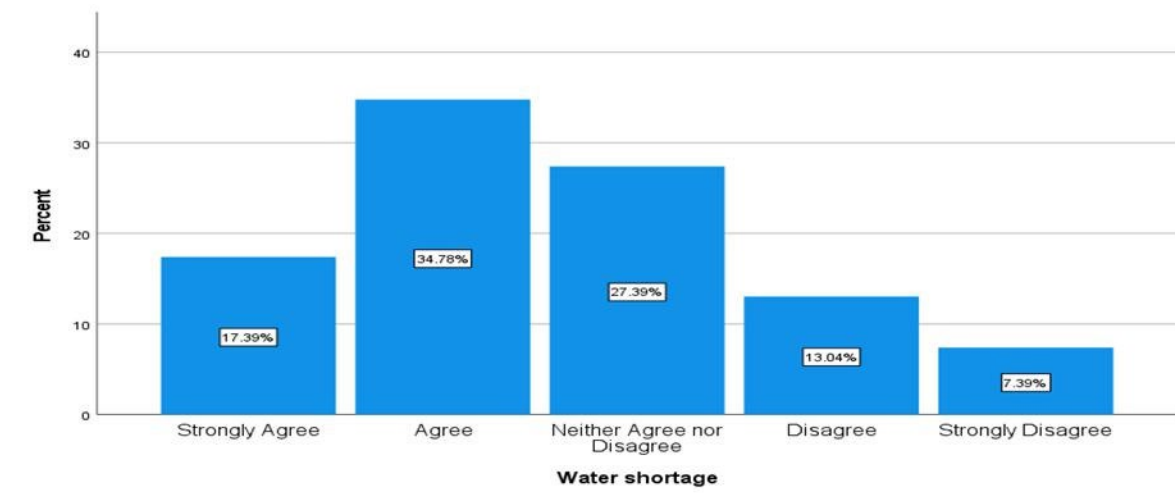


Figure 44: Water shortage

Q9(7). The conflict is considered as a threat to Nigeria's unity as indicated by the respondents where more than 40% of the total respondents answered agreed, 29% respondents disagree, and 28% "neither agree nor disagree". Overall, over 40% agree that the conflict is a major threat to Nigeria's unity.

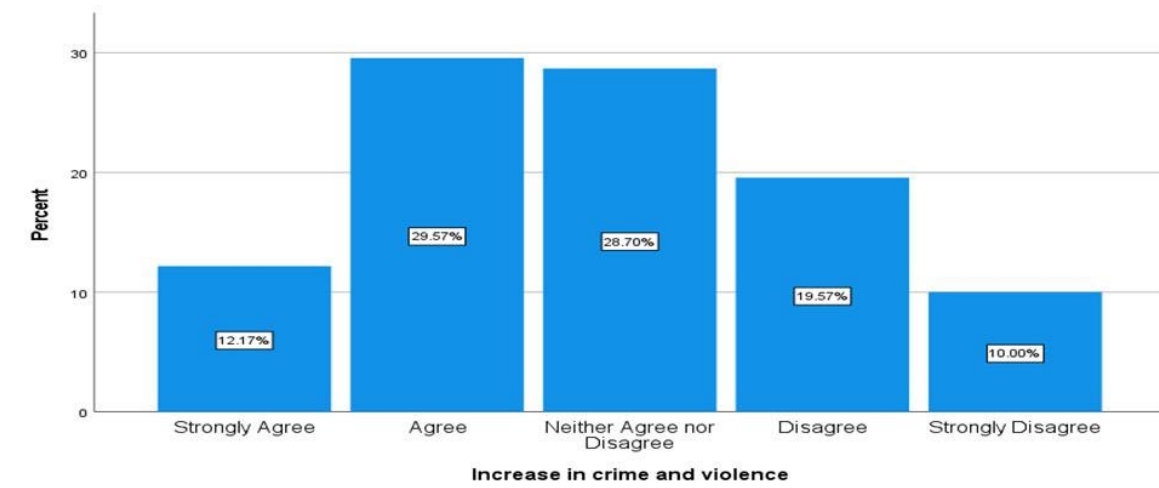


Figure 45: Conflict is a major threat to Nigeria's unity.

Q9(8). With regards to water overflow in the region, a survey result revealed that 45% agreed and 20% disagreed while 33% show no concerns as illustrated in the figure below.

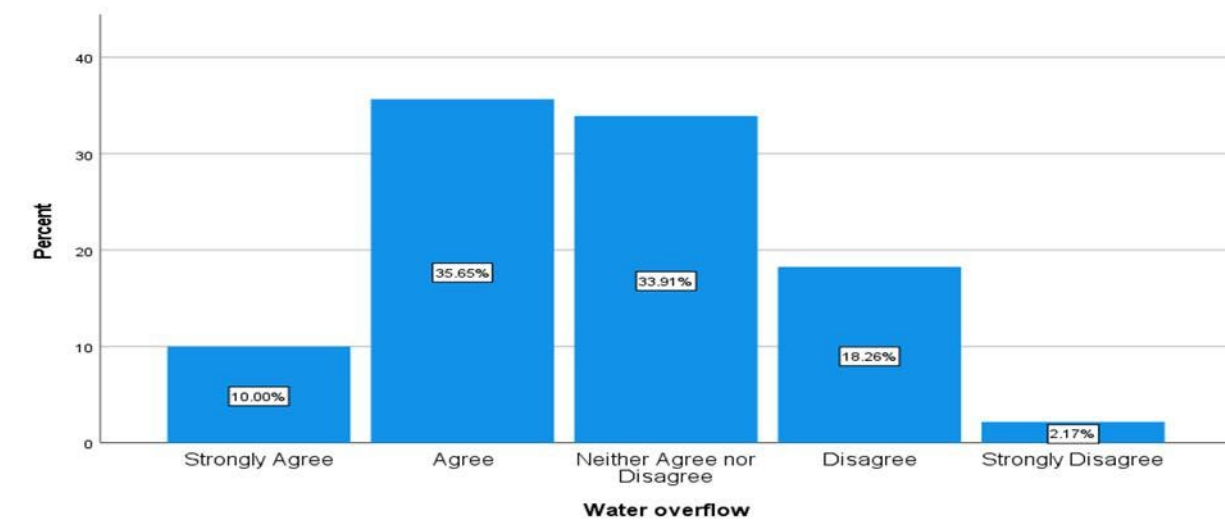


Figure 46: Water overflow

Q9(9). With regards to marginalisation 79% agree while 21% disagreed and 29% neither agreed nor disagreed. From respondent's perspectives, over 70% of them agree that people in the oil producing region have been marginalized.

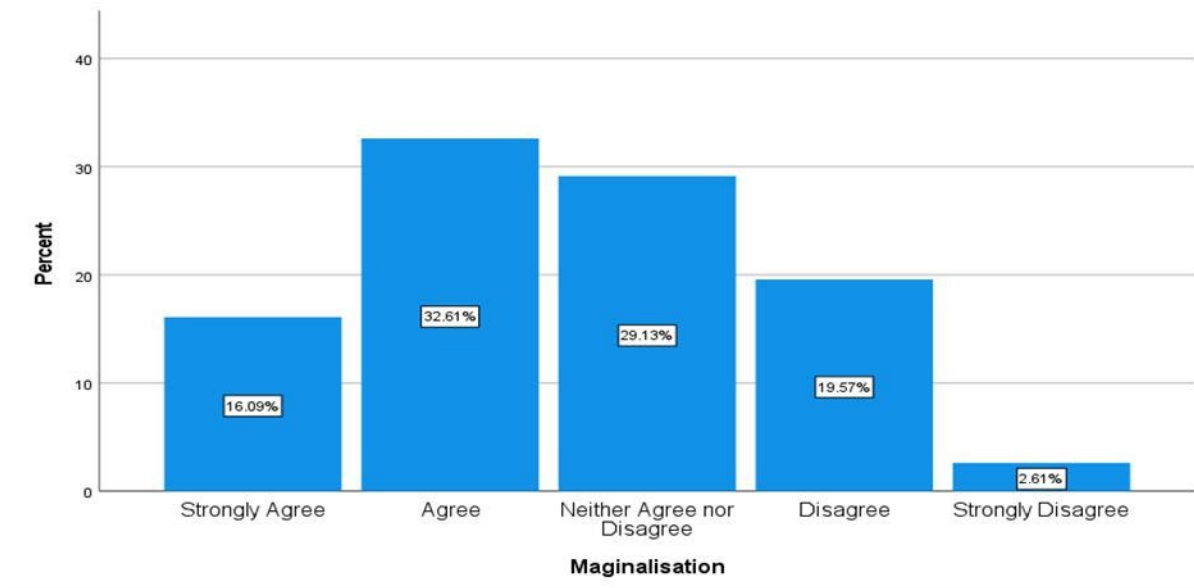


Figure 47: Marginalisation

Q9(10). With regards to community displacement in the oil-producing region the responses were mixed. As many agreed and disagreed. For example, as illustrated in the graph below 40% of the respondents agreed while 27% disagreed and 29% neither agreed nor disagreed.

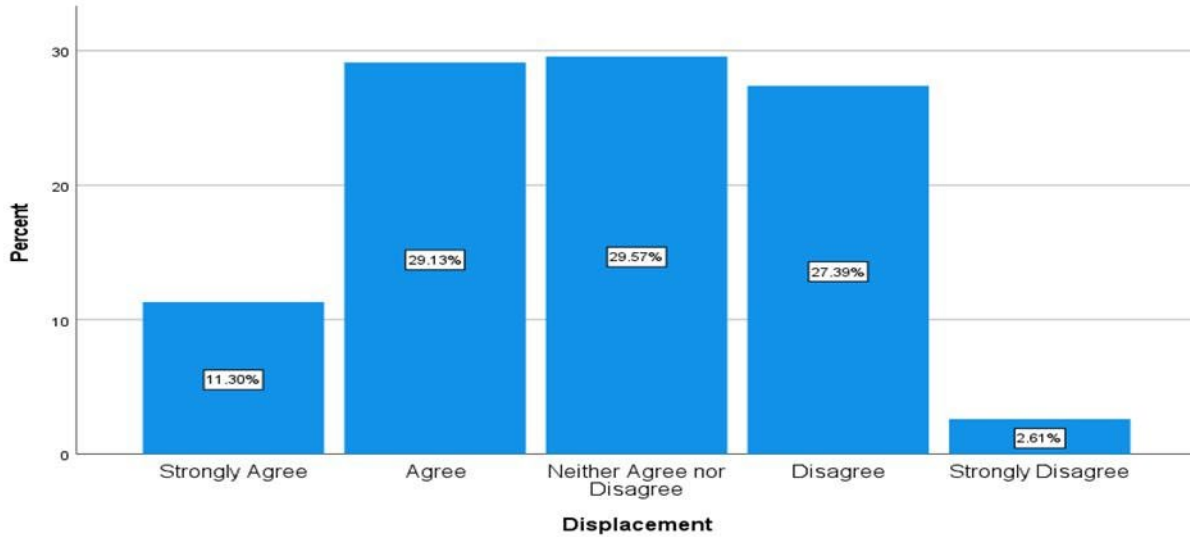


Figure 48: Displacement

Q9(11). With regards to responses on whether global warming in the region was as a result of exploration activities, most people agreed (58%), 21% disagreed and 19% neither agreed nor disagreed.

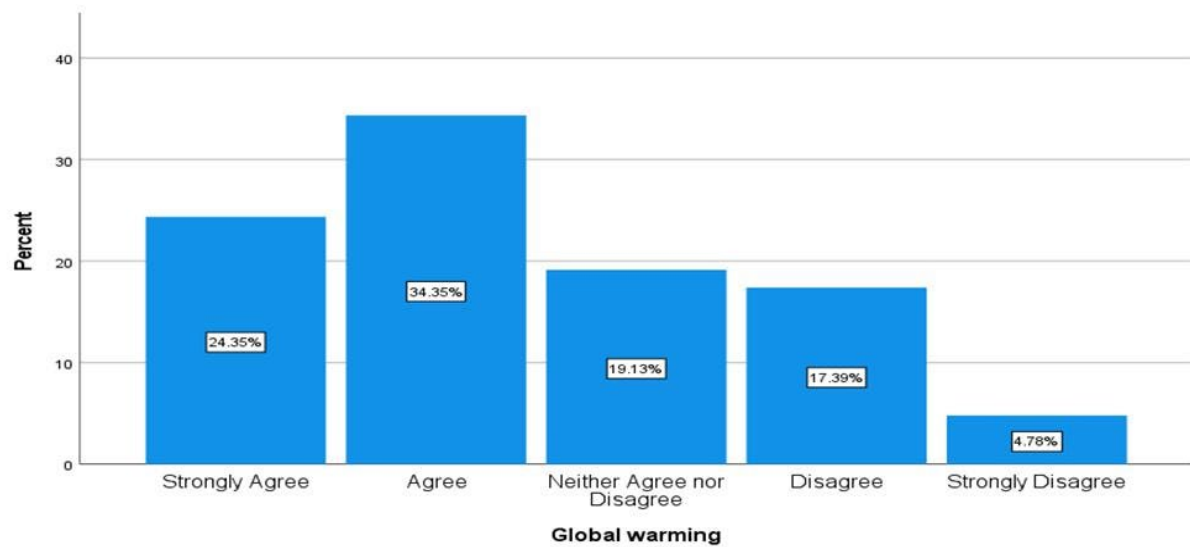


Figure 49: Global Warming

Q9(12). On the question if the entire landscape in the region have been degraded or not, over 50% of the respondents agreed, 16% disagree while 30% neither agreed nor disagreed the opinion as shown on the table below.

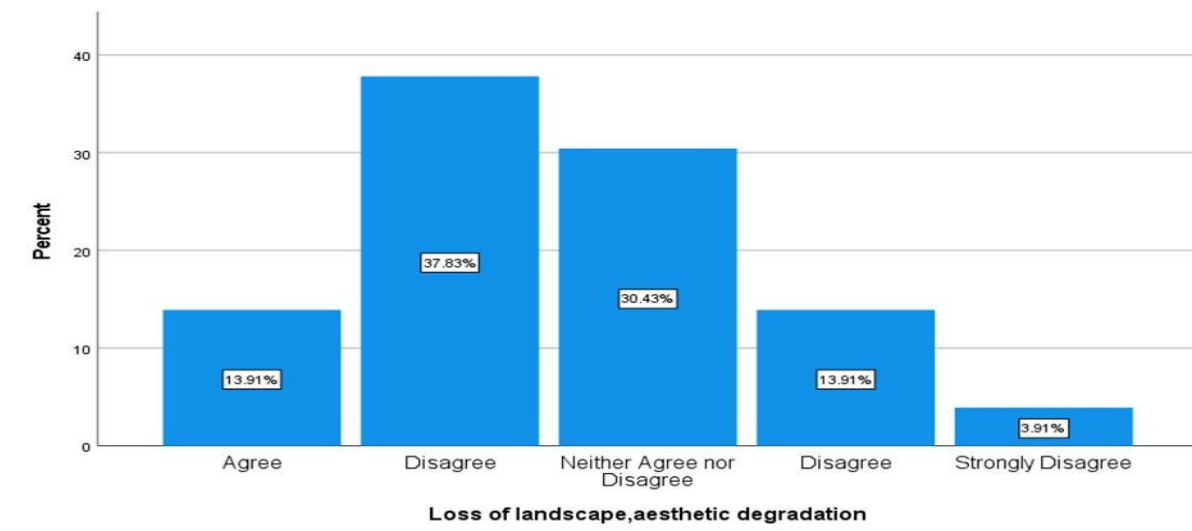


Figure 50: Entire landscape in the region have been degraded

Q10. With regards to contaminated water most participants agreed that poor access to adequate drinking water has had serious implications for the general poor health, environment, economic activity and sustainable livelihoods in the Niger Delta region.

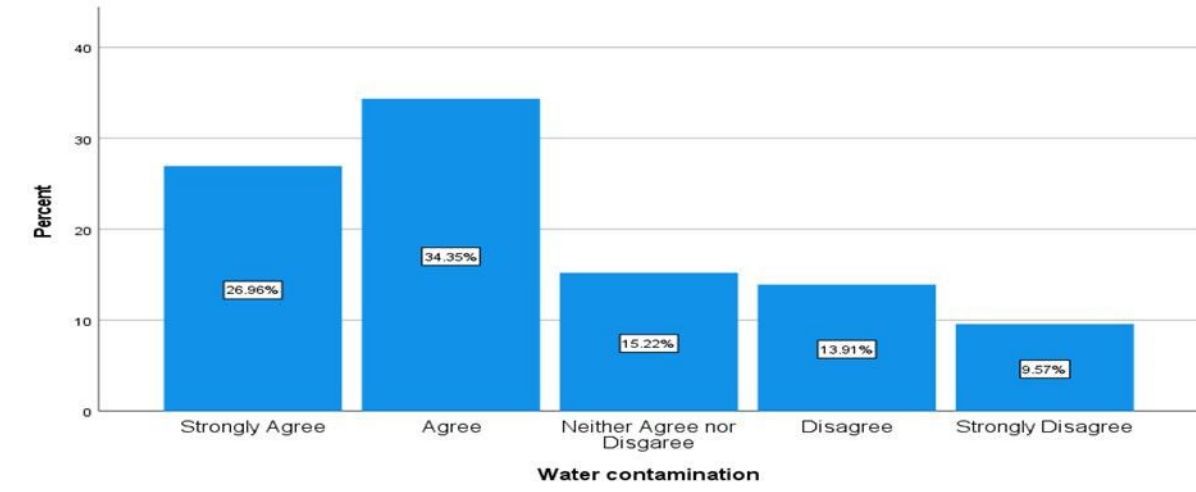


Figure 51: Water Contamination

6.4.2.2 Communities Concerns about Oil Exploration Activities

Q11.1. Most of the respondents to the questionnaires voiced their outrage of government total neglect. Overall, 76 percent expressed the view that oil and gas development did not address the key issues of the Niger Delta region, they stated that the programme has made the community suffer from administrative neglect, 15% disagree with this view and 6% neither agree nor disagree. The results, taken together, revealed wide-spread distrust in the projects and the powers behind it.

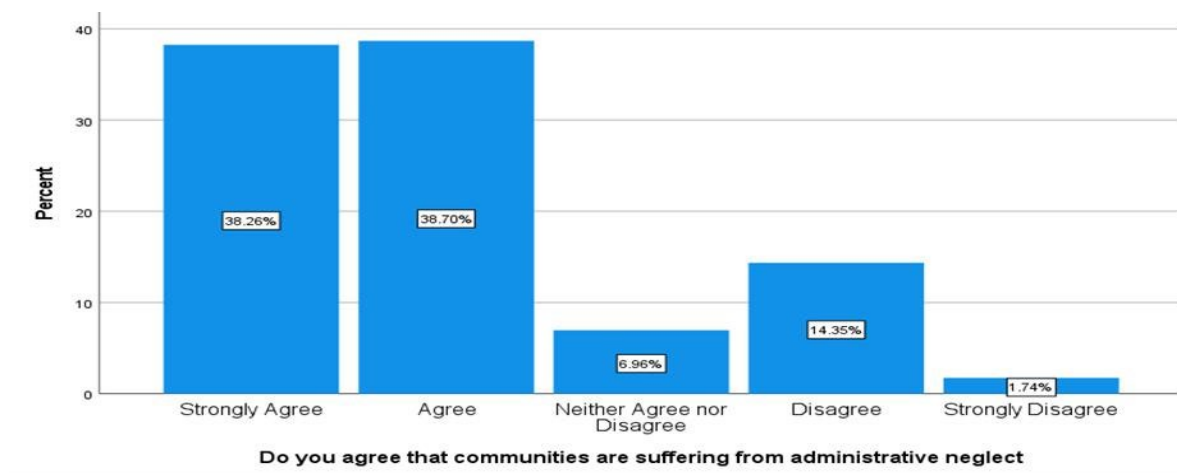


Figure 52: Community suffer from administrative neglect

Q11.2. With regards to provision of financial assistance to indigenous people in the Niger Delta region, the responses were mixed. As many agreed and disagreed. For example, as illustrated in the graph below 38% of the respondents agreed while 44% disagreed.

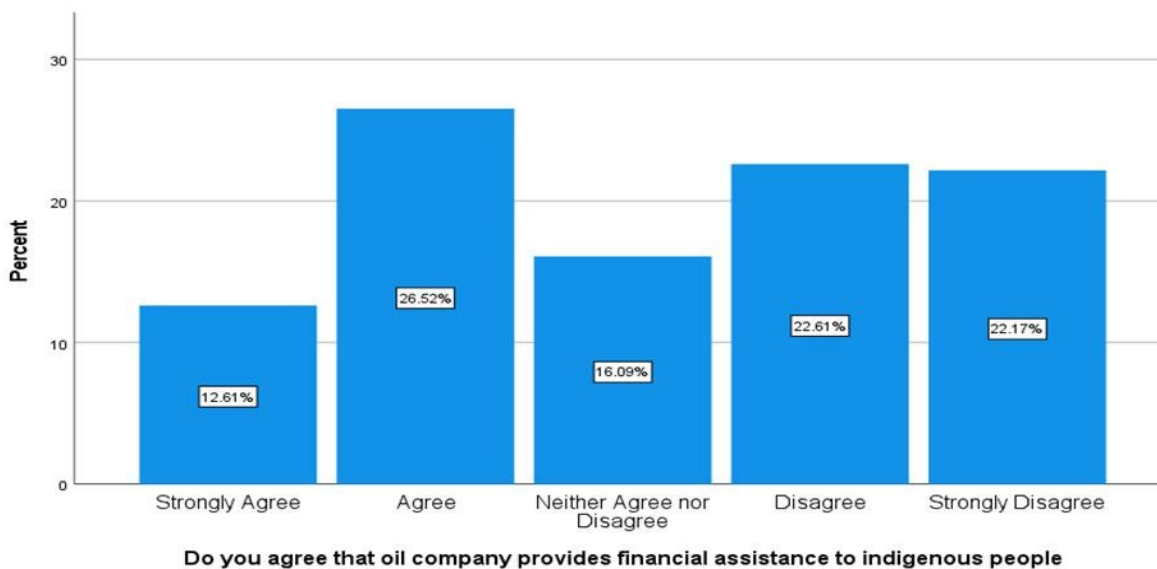


Figure 53: Oil companies provide the indigenous people with financial assistance in the Niger Delta region

Q11.3. With regards to job creation to indigenous people in the oil-producing region the responses were mixed. As many agreed and disagreed. For example, as illustrated in the graph below 39% of the respondents agreed while 32% disagreed.

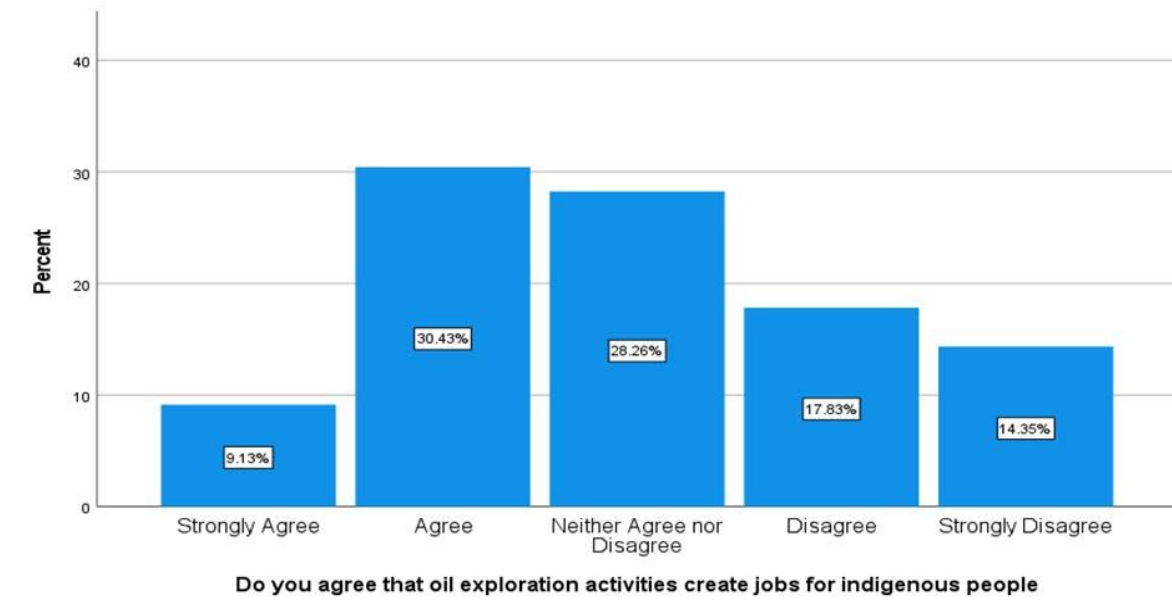


Figure 54: Job creation to indigenous people

Q11.4. On the question if community elders in the Niger delta were corrupt or not, most people agreed. For example, 60% agree while 16% disagreed and 23% neither agreed nor disagreed. Overall, 60% of the population believed oil revenue should be used to create sustainable and diverse investments for long-term benefits for future generations while addressing current challenges.

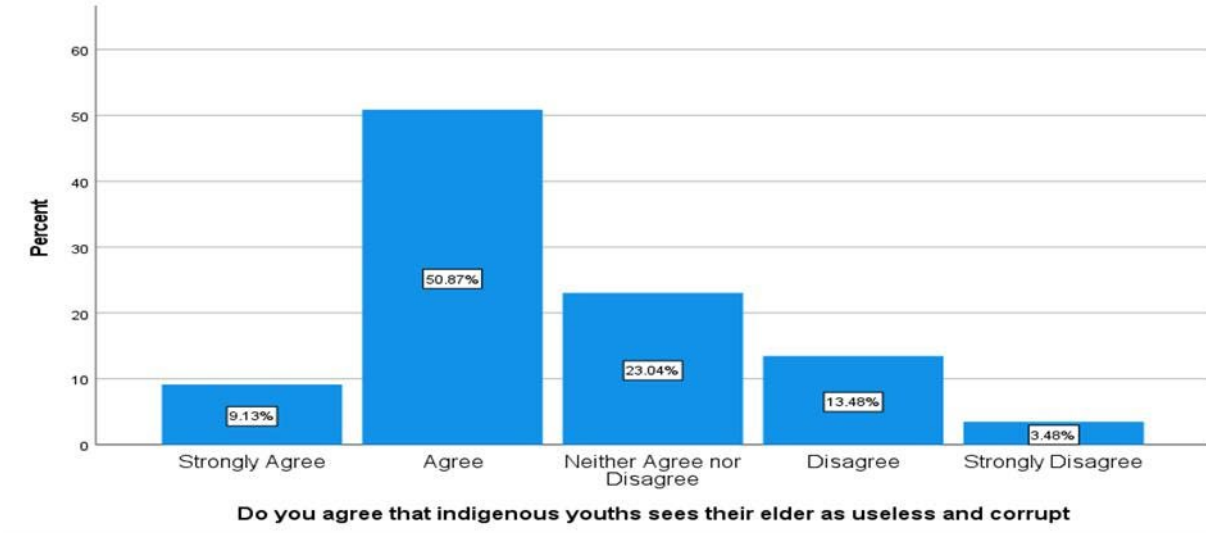


Figure 55: Community elders in the Niger delta were corrupt or not

Q11.5. On this question, the result from the survey indicates that, over 60% of the respondents expressed the view that oil and gas development projects rewards criminality while 14% disagree with this view and 16% neither agree nor disagree. The results, taken together, revealed that over 60% believe that sabotage and theft through oil siphoning has become a major issue in the Niger River Delta states as well, contributing to further environmental degradation.

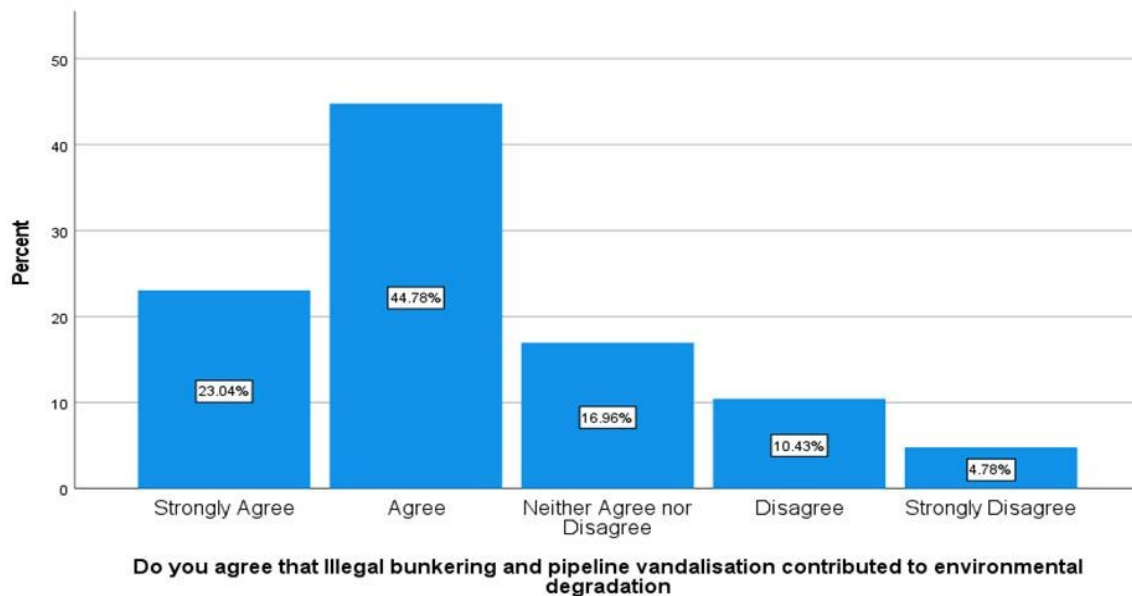


Figure 56: Sabotage and theft through oil siphoning has become a major issue

Q11.6. On the question if environmental degradation increases poverty Niger delta region or not, 30% strongly agreed and 44% agreed. Overall, 74% of the total respondents agreed that environmental pollution reduces the potential for sustainable livelihood, thereby increasing poverty in the region.

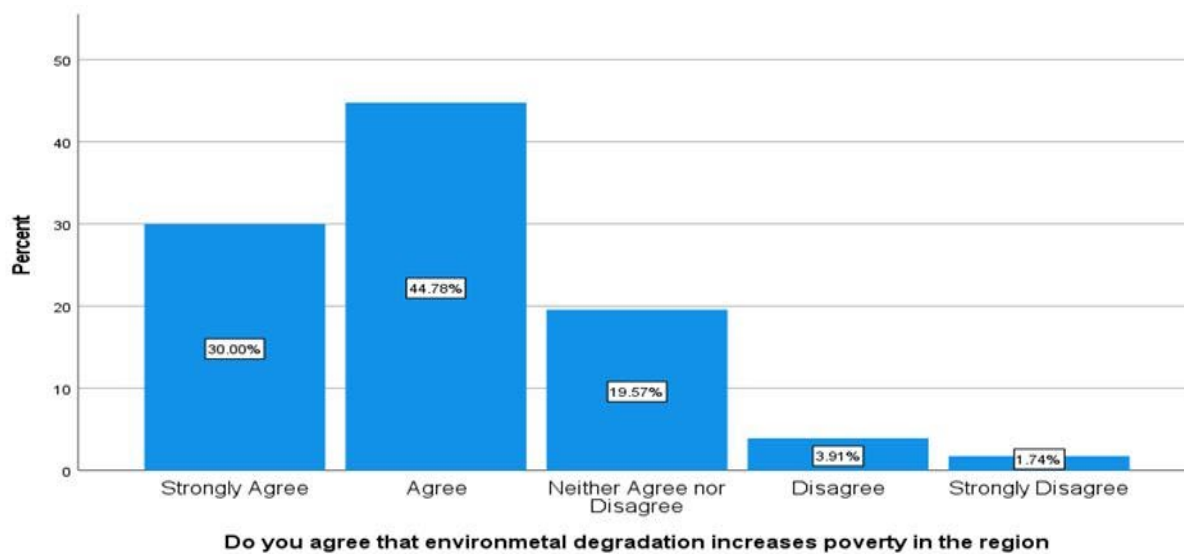


Figure 57: Environmental degradation increases poverty Niger delta region

Q11.7. With regards to tackling oil-related problem in the Niger delta region, over 80% of the respondents agreed that there is need to keep all parties around the negotiating table to tackle the problems, while 1% disagreed and 15% neither supported nor opposed the view.

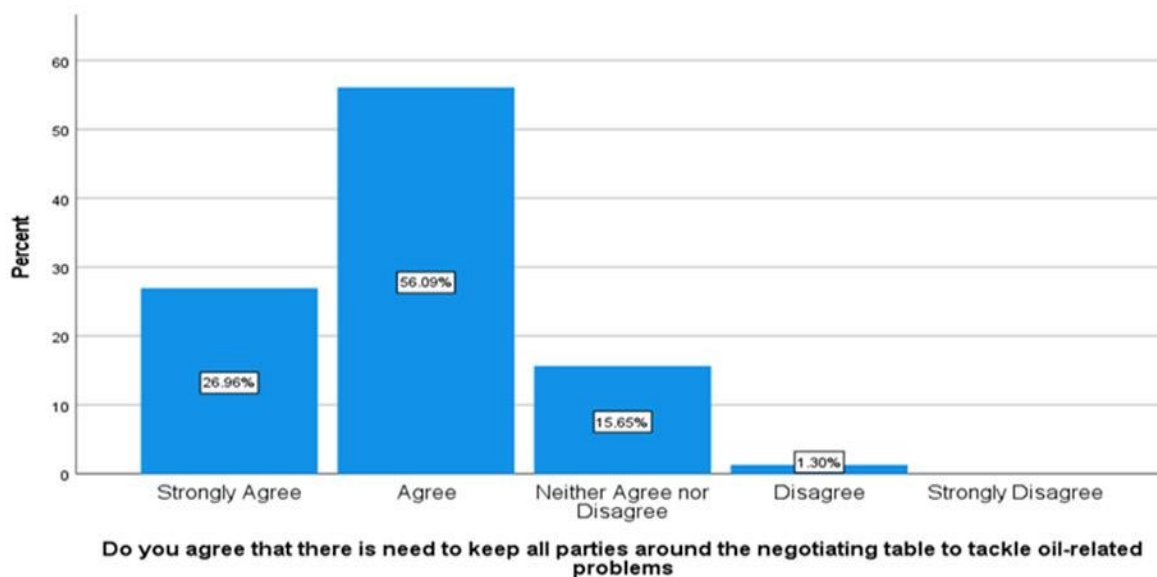


Figure 58: Negotiating table to tackle the problems

Q11.8. With regards to impacts of oil and gas exploitation on Nigerian economy, the findings revealed that large number of the people agree that that oil discovery brought a great wealth to Nigeria with 34% strongly agreed and 47% agreed.

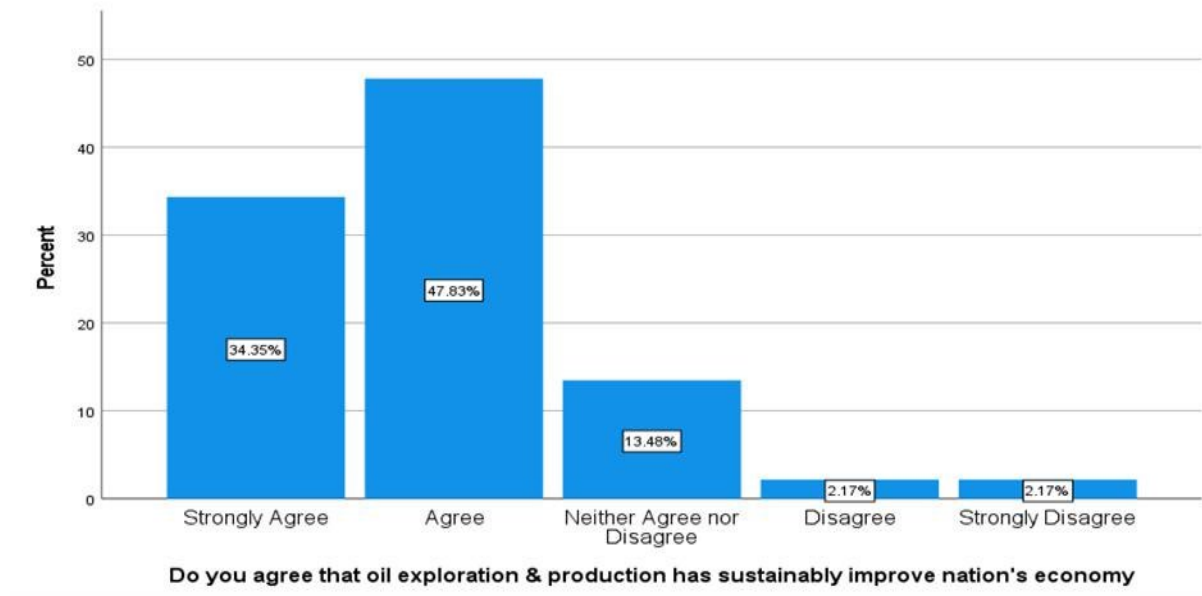


Figure 59: Impacts of oil and gas exploitation on Nigerian economy

Q11.9. On this question of environmental destruction, the result from the survey indicates that over 70% of the total respondents agreed that multinational oil companies in the need to refrain from their various activities damaging the environment while 11% disagreed and 15% neither agreed nor disagreed.

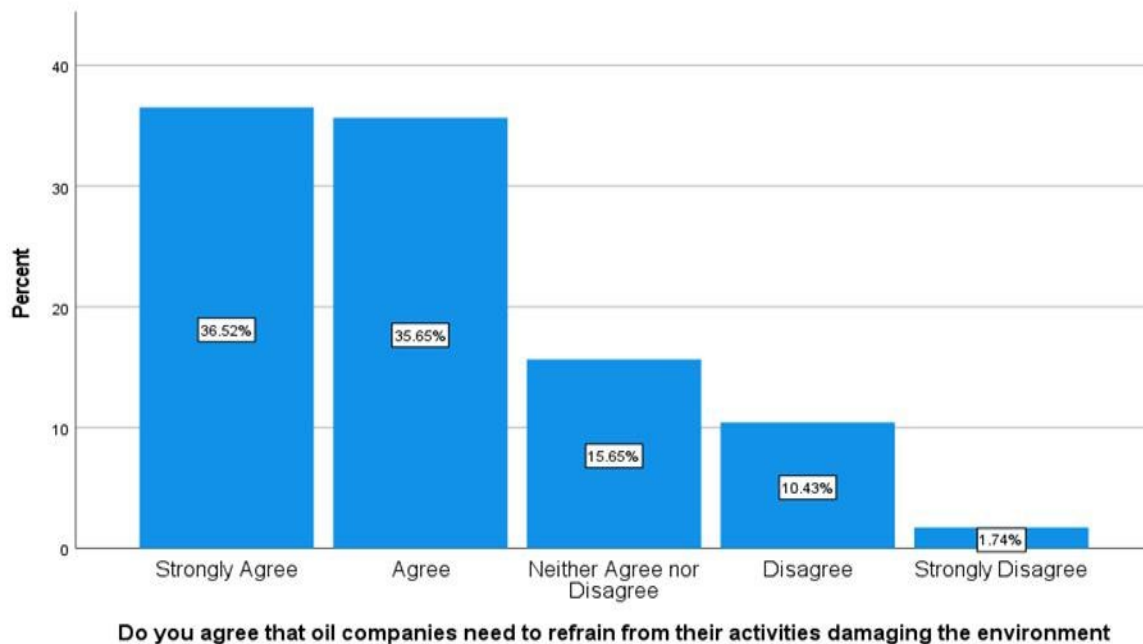


Figure 60: Multinational oil companies in the need to refrain from their various activities damaging the environment

Q11.10. With regards to scholarship provision to students at all levels of education the Niger delta region, over 80% of the respondents agreed that multinational oil companies operating in the oil producing region provides scholarships to secondary schools, universities. They believe that schools have been renovated and qualified teachers mobilised to give these generous but poor kids qualitative education.

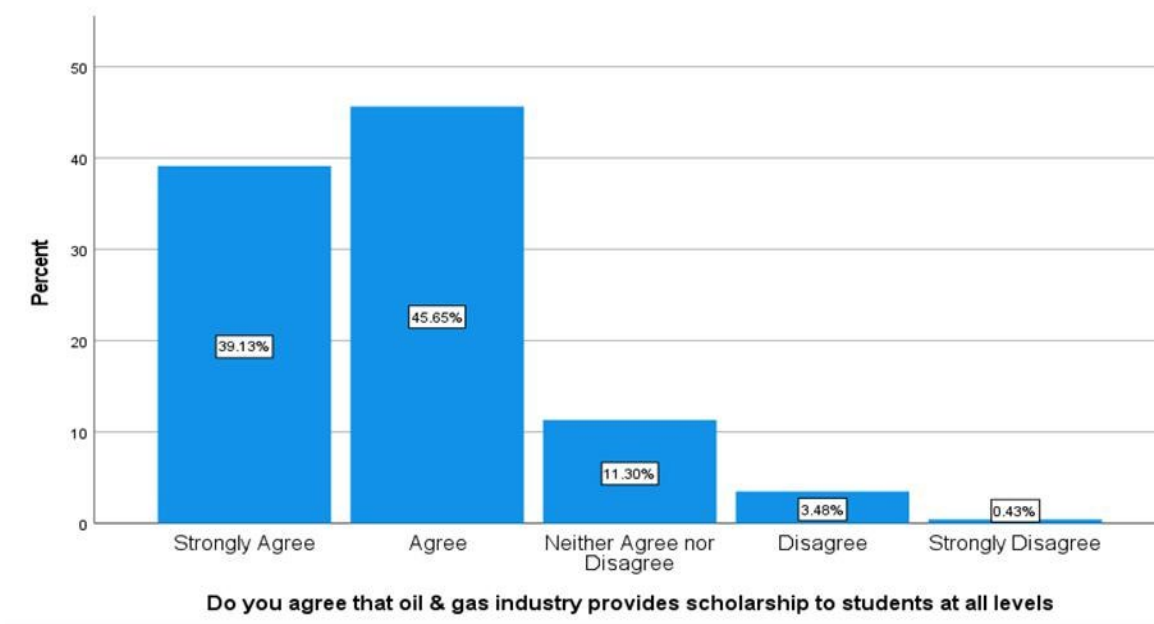


Figure 61: Scholarship provision to students at all levels of education

6.4.2.3 Oil Company's Role in the Environmental Abuse

Q12. With regards to responses on oil company's role in the environmental abuse most people agreed as illustrated in the in the graph below. The results showed that over 80% of the population agreed that Niger Delta region has suffered some setback in terms of development compared to other regions in the country.

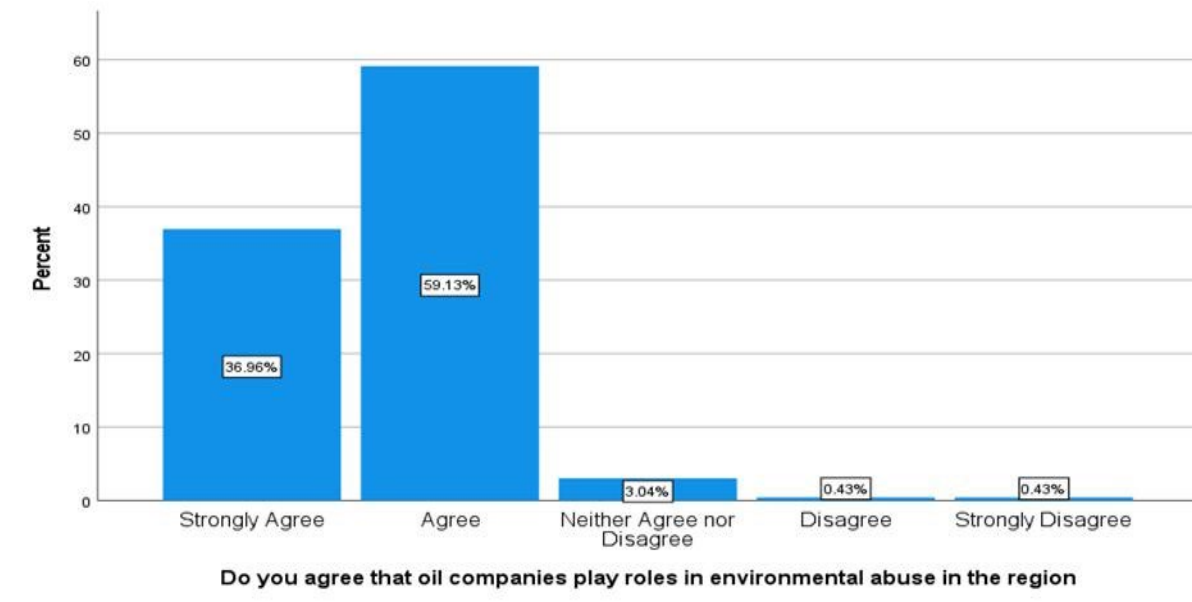


Figure 62: Oil company's role in the environmental abuse

Q13(a). With regards to poverty being high in the Niger Delta region most people agreed that the long neglect of this region's development poses a great barrier to attaining socio-economic transformation and poverty alleviation.

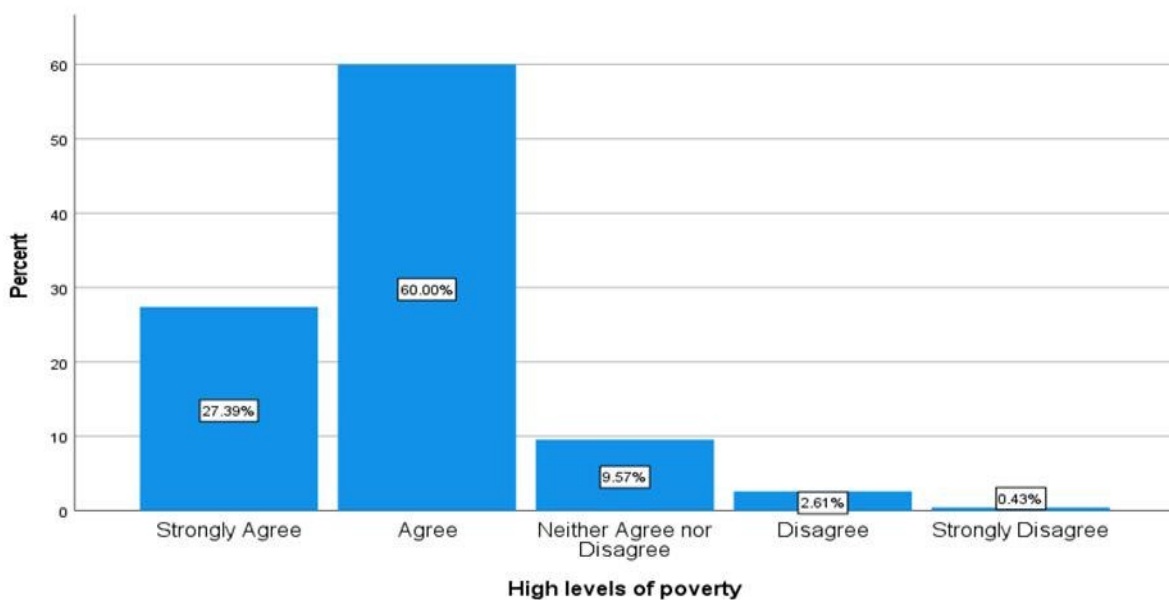


Figure 63: High levels of poverty

13(b). The findings obtained from survey strongly reveal that oil and gas projects contribute to high rates of unemployment in the oil-producing region. For example, over 29% of the respondents strongly agreed and 55% agreed. Overall, 84% of the population have concluded that their original source of livelihood of fishing and farming have been destroyed, making most of the people in the region jobless and poor.

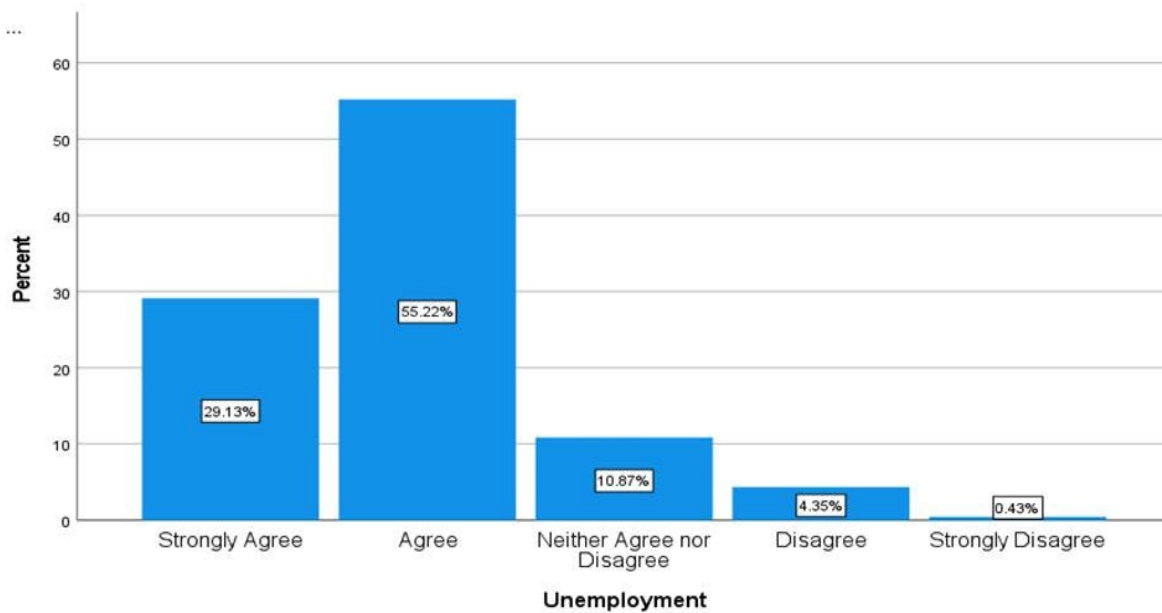


Figure 64: Unemployment

13(c). With regards to non-inclusion of the locals in the environmental decision-making process most people agreed. Over 80% of the respondents agreed with this view while only 1% disagreed of the respondents and 9% neither agreed nor disagreed.

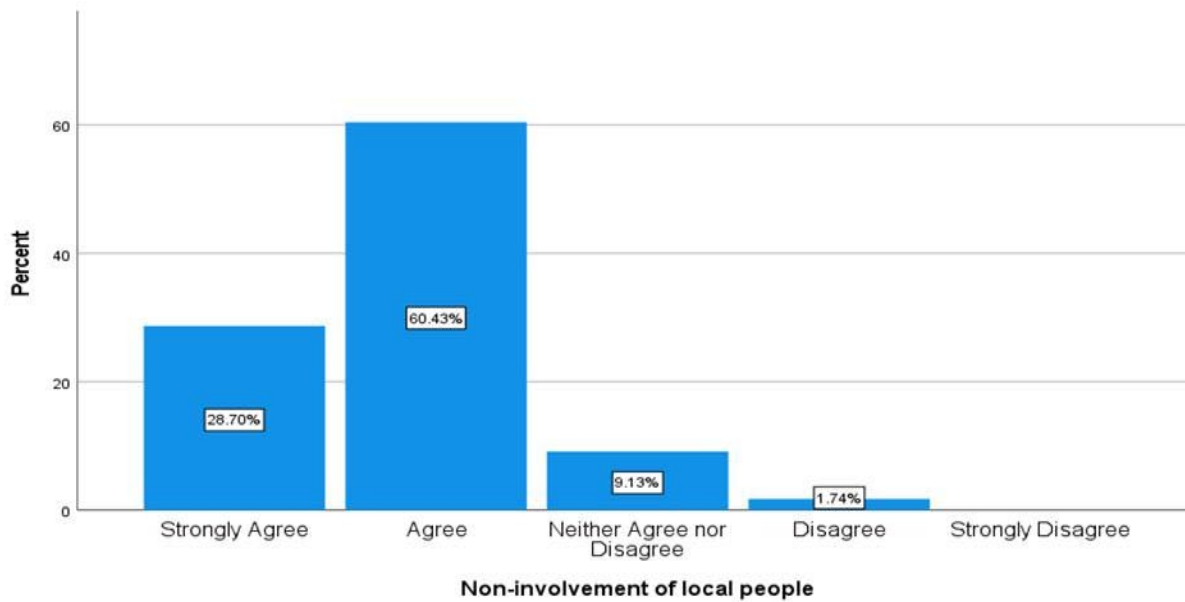


Figure 65: Non-Involvement of Local People

13(d). Most people agreed that entire people in the Niger delta region were marginalised. Over 70% agreed on evidence relating to political aspects of social exclusion encompassed marginalization of indigenous communities through land grabs and unequal representation in political decision making.

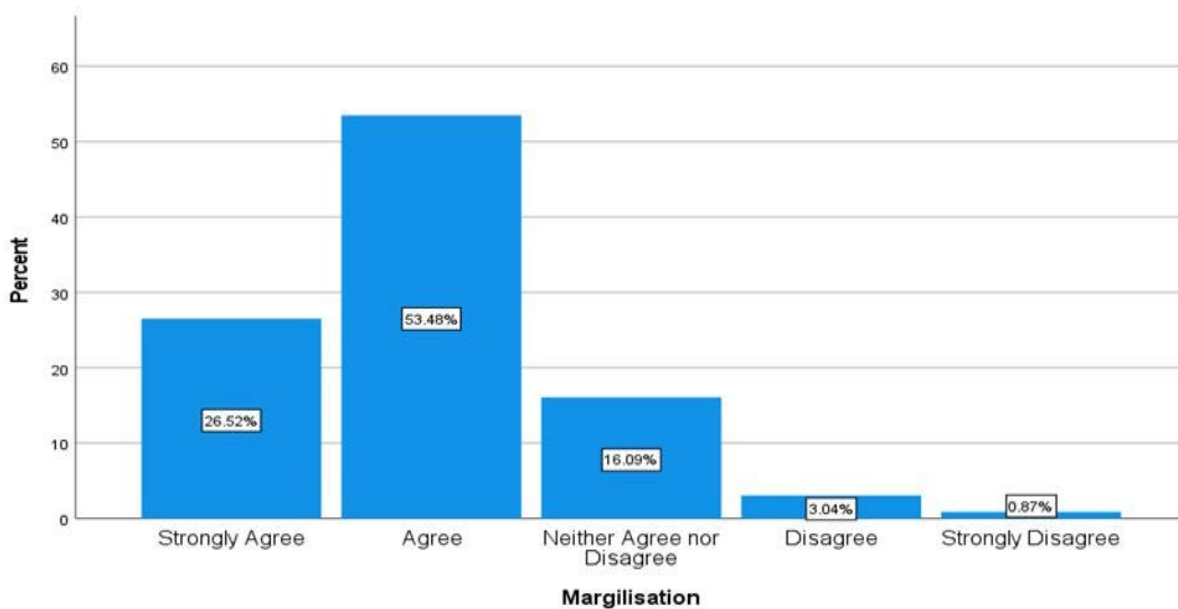


Figure 66: Marginalised

Q14(a). With regards to poor governance in Nigeria many respondents agreed. For example, as illustrated in the graph below over 70% of the respondents agreed that lack of government investment in social infrastructure; poor health and wellbeing linked to land, air, and water pollution; homelessness and lack of social cohesion.

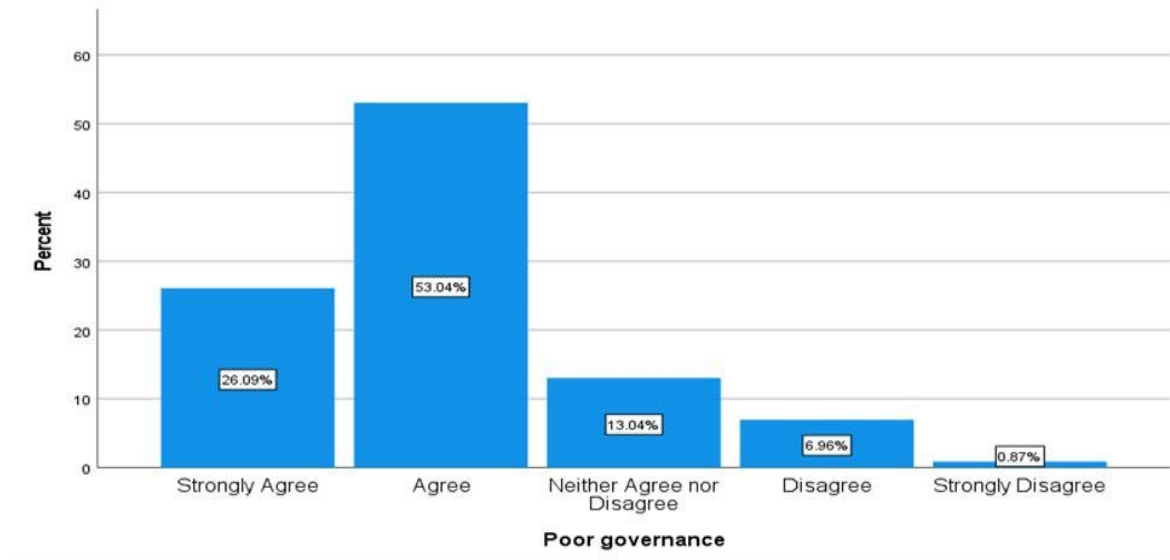


Figure 67: Poor Governance in Nigeria

(14b). With regards to exploitation in the region 76% of the respondents agreed that oil corporations and governments exploit resources without involving or compensating residents and landowners. Only 7% disagreed with this view and 15% neither agreed nor disagreed.

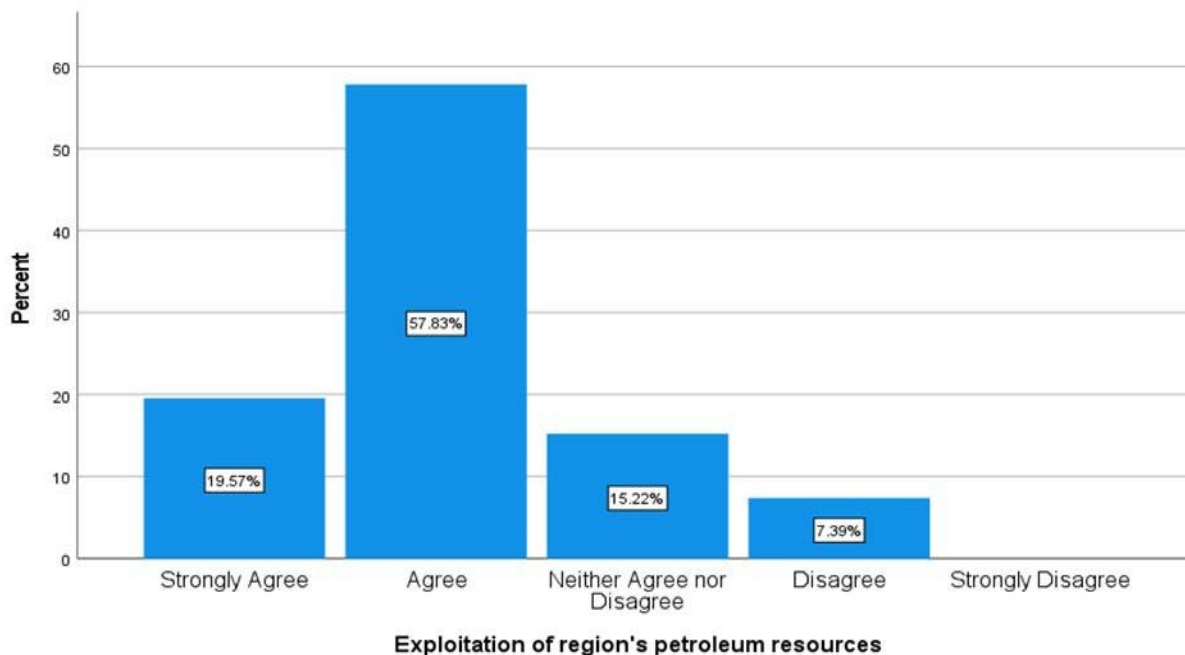


Figure 68: Exploitation in the Region

(14c). With regards to peoples' opinion on sustainable issues most people agreed that exploration and exploitation of natural resources in this region has had extensive consequences on the livelihood activities of the people. 76% of the population agreed that poor access to adequate drinking water has had serious implications for sustainable livelihoods in the Niger Delta region while 5% disagreed.

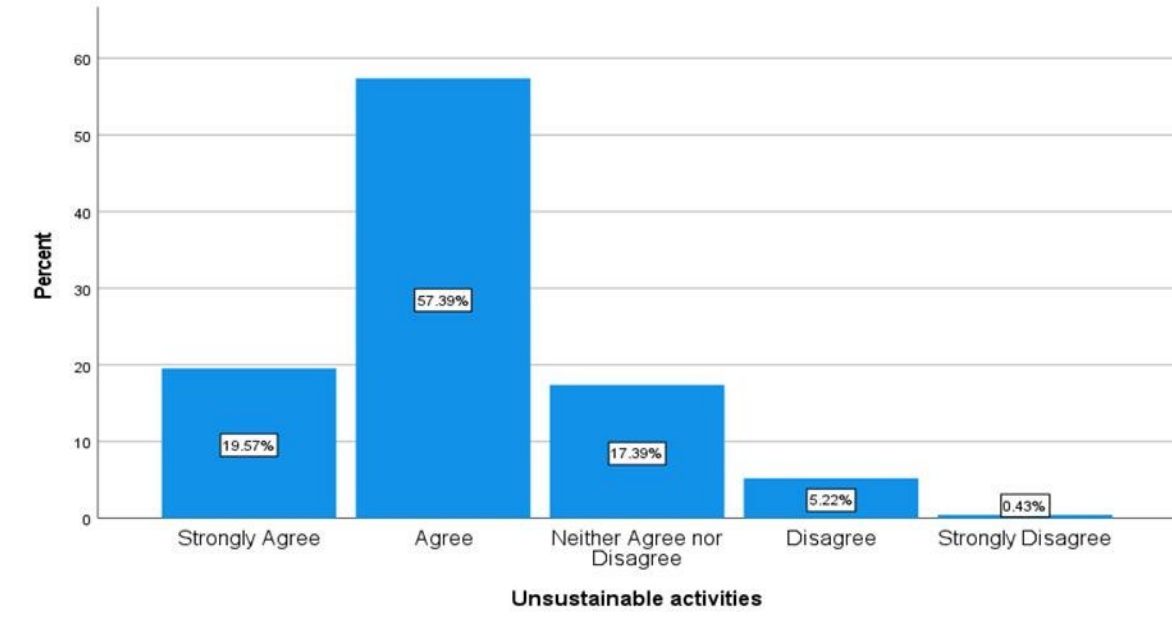


Figure 69: Unsustainable Activities

(14d). Most of the respondents agreed that regulatory agencies in the oil and gas sector are not doing enough to ensure multinational oil companies clean-up oil spills the Niger Delta environment. For example, 22% strongly agreed and 53% agreed while 11% disagreed and 11% were not sure. Survey results reveal extent of Shell's failure to clean up Niger Delta oil spills and had offered the community only food as compensation.

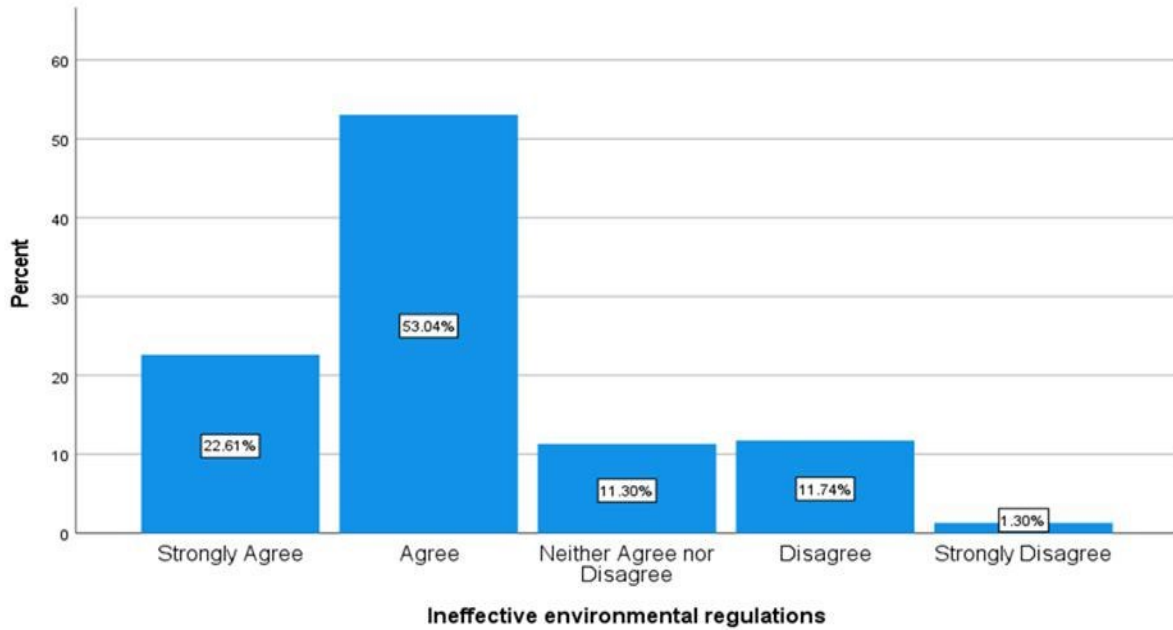


Figure 70: Ineffective Environmental Regulation

Q15. With regards to peoples' response on the spate of environmental abuse in the region most of the people agree that statutory laws and regulations are not fit for purpose (20% strongly agree and 47% agree).

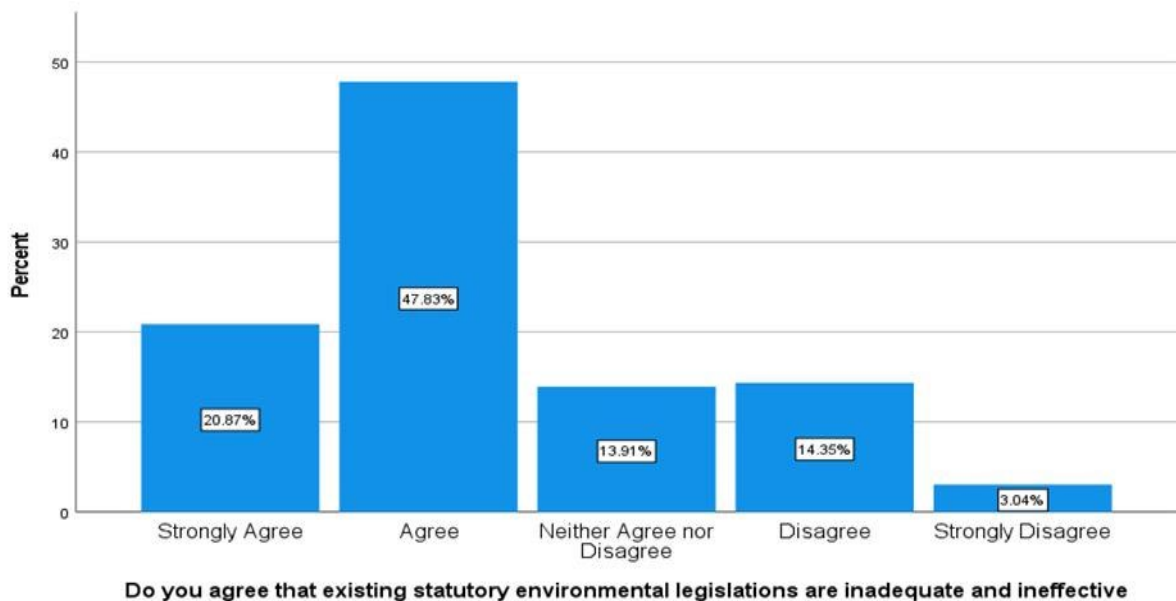


Figure 71: Statutory laws and regulations

Q16(a). Most people (86%) agreed that oil spills have left land and water ways inaccessible and unproductive, resulting in further deforestation and exploitation of marginal land as people are pushed to find alternative sources of income, while 3% disagreed and 6% are not concerned.

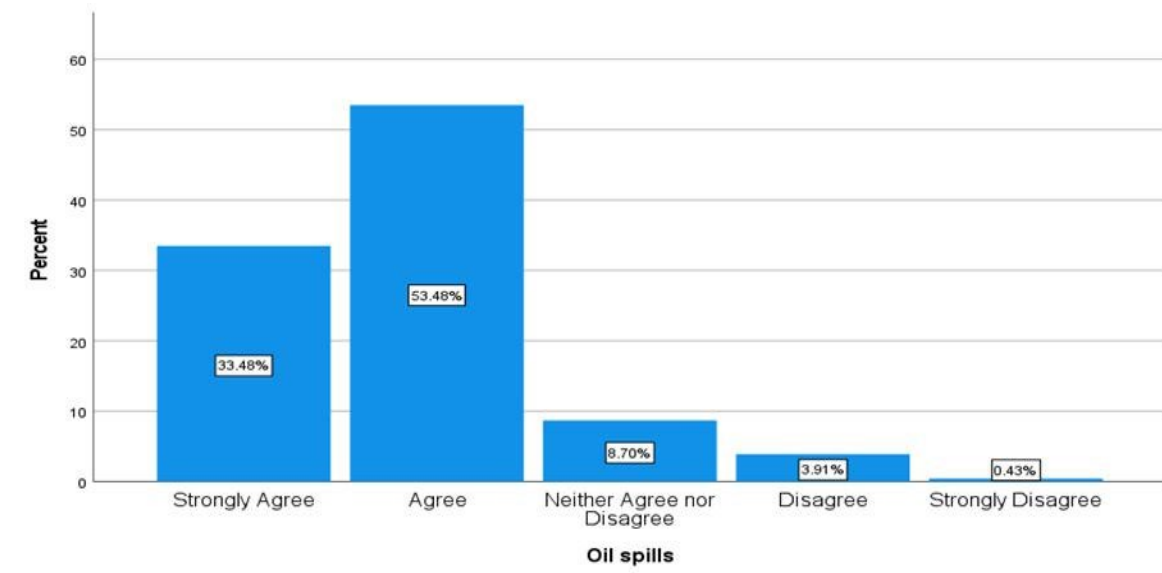


Figure 72: Oil Spills

16(b). As illustrated in graph below, most people agreed that gas flaring pollutes the air, and it is common practice among companies in Nigeria especially in the Niger-Delta region which is hazardous to the ozone layer of the area and leading to climate change. As many strongly agreed (29%) and agreed (56%).

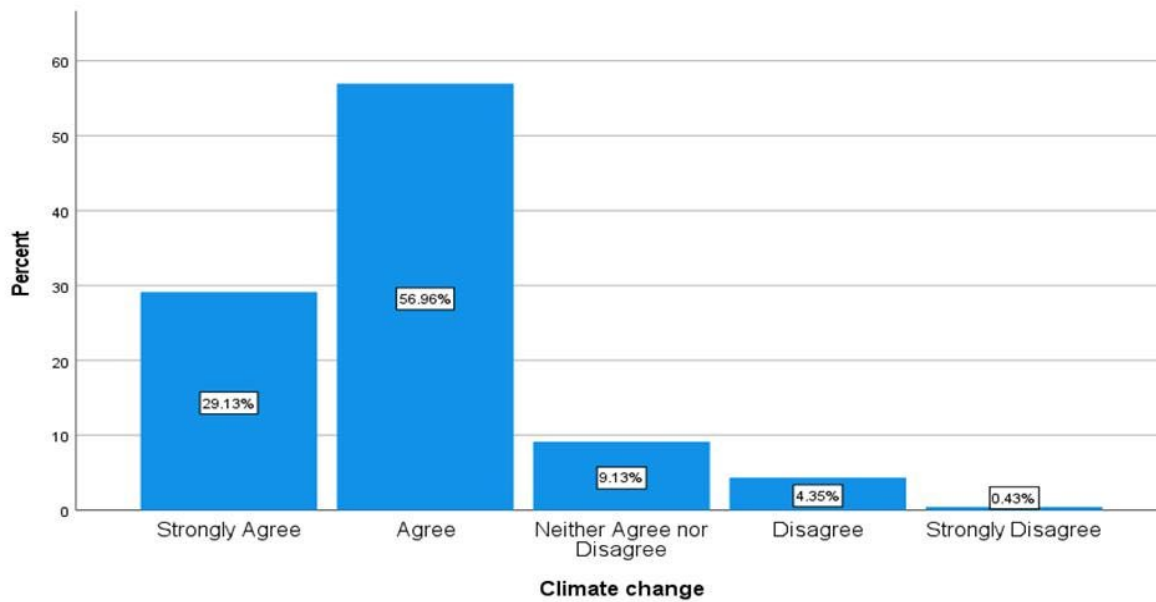


Figure 73: Climate change

16(c). With regards to pollution, over 90% of the people agreed that air pollution today in the Niger delta region remains the single biggest environmental threat to health, shortening tens of thousands of lives each year. While only 2% disagreed and 5% neither agreed nor disagreed.

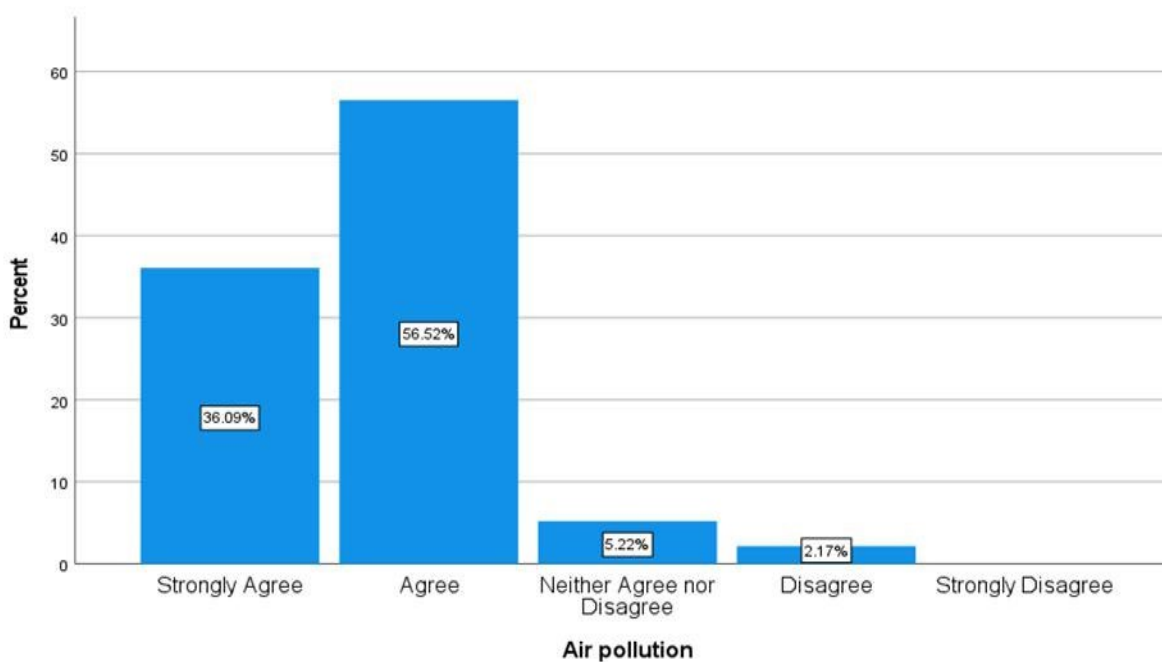


Figure 74: Air pollution

Q17. The findings from the survey revealed that most people agreed that the Niger Delta communities are poor managed by the oil producing company and the Nigerian government 25% strongly agree and 44% agree as shown in the graph below. Overall, 69% of the respondents believed that oil region in Nigeria seems to be stuck in a time warp, with little real change since oil was discovered 45 years ago.

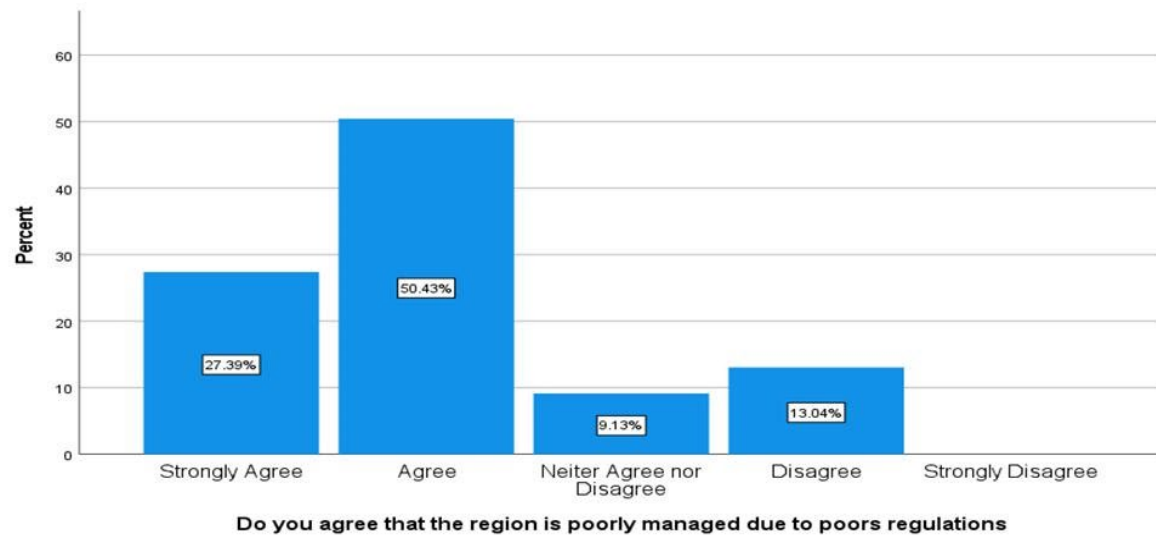


Figure 75: Niger Delta communities are poor managed by the oil producing company

Q18. On the question if compensation can solve environmental-related problems in the region or not, 26% strongly agreed and 56% agreed. Over 80% agreed that in practice, compensation can take the form of projects that restore and/or improve common resources through measures such as habitat restoration, species rehabilitation and/or resource enhancement designed to offset the impacts of environmental damage.

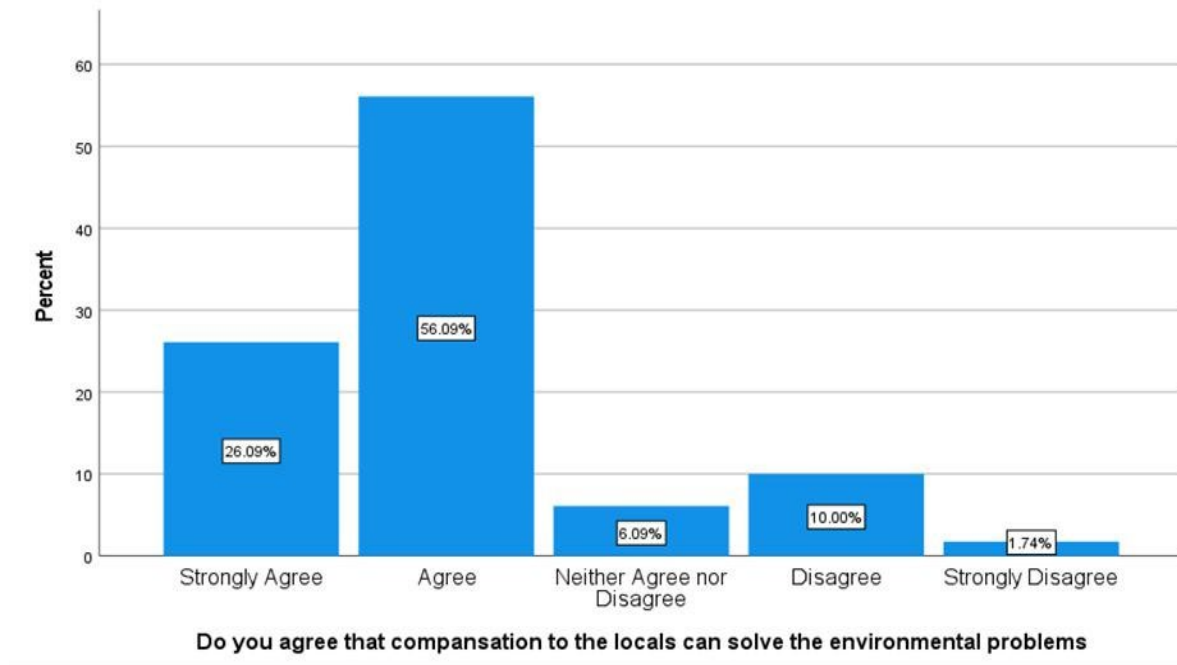


Figure 76: Compensation can solve environmental-related problems

Q19. With regards to provision of social amenities the responses were mixed. As many agreed and disagreed. For example, as illustrated in the graph below 62% of the respondents agreed while 27% disagreed.

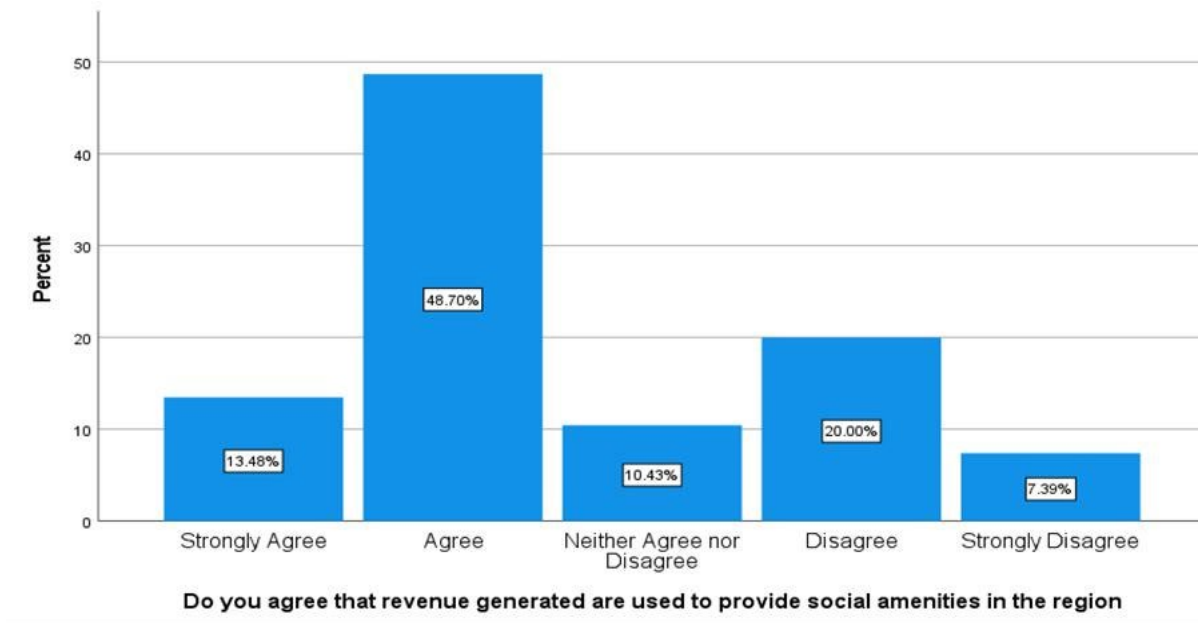


Figure 77: Provision of social amenities

Q20. On the question if government inaction has contributed to Niger Delta crisis or not, 26% of the respondents, 56% disagreed, while 10% disagreed and 6% neither agreed nor disagreed.

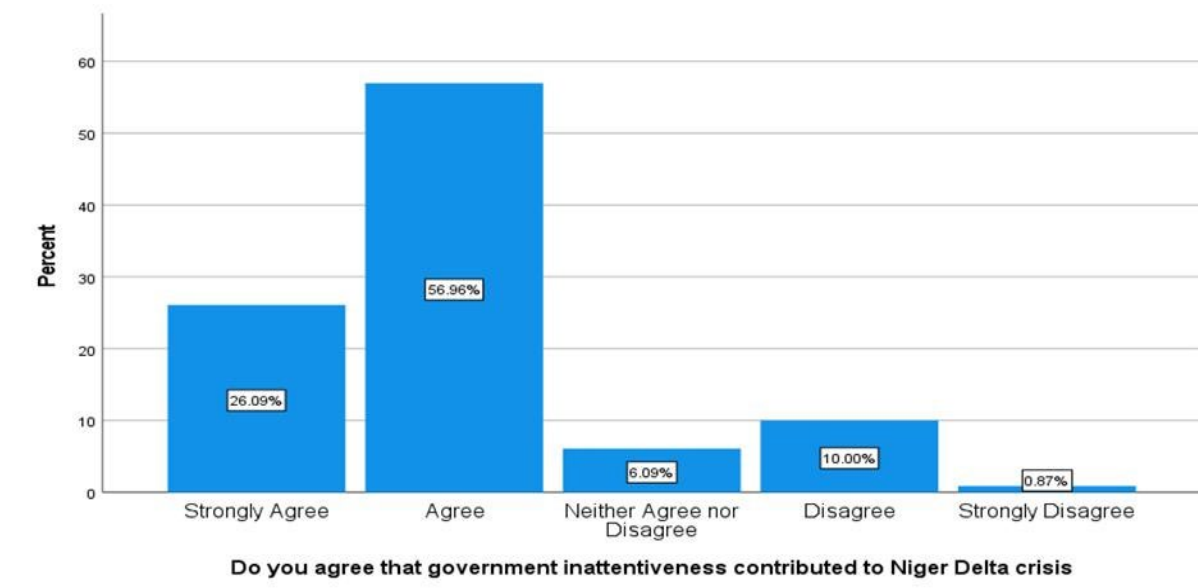


Figure 78: Government inaction has contributed to Niger Delta crisis

Q21. On the question if Nigerian government should adopt international laws and regulations or not, 88% agreed and 4% disagreed. Overall, most people agreed that the current Nigerian statutory laws and regulations are ineffective and efficient.

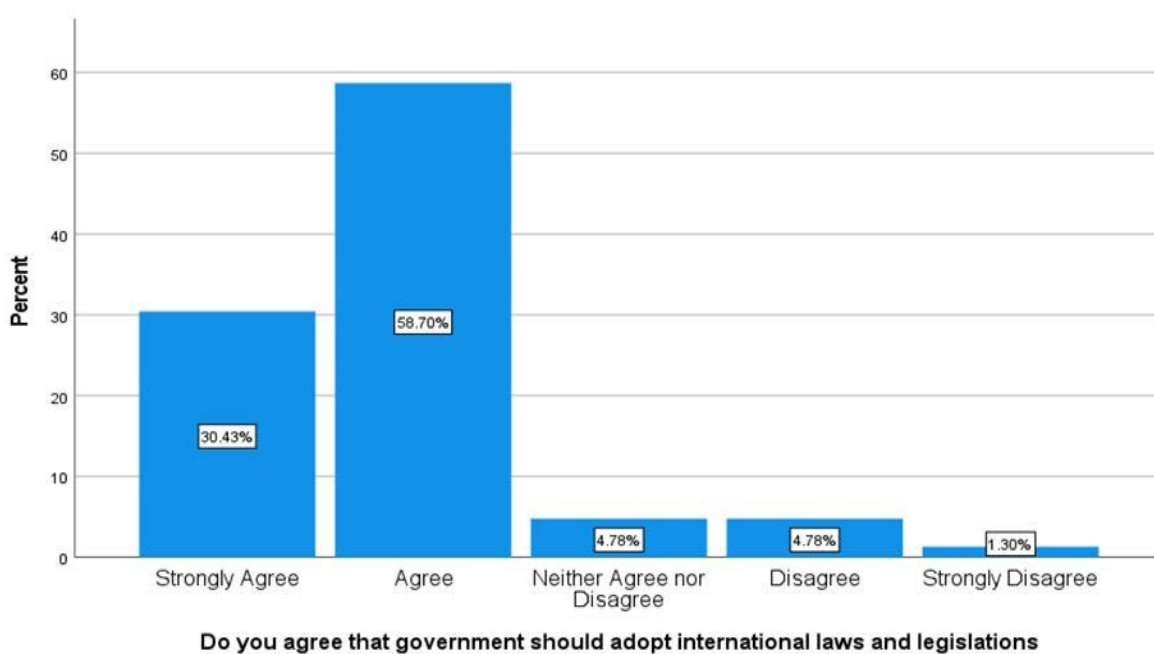


Figure 79: Nigerian government should adopt international laws and regulations

Q22. Most people agreed that the activities of petroleum industries in the Niger delta region have resulted in declined crop yields, leading to a significant decrease in food security in the household. For example, 33% of the respondents strongly agreed and 57% agreed.

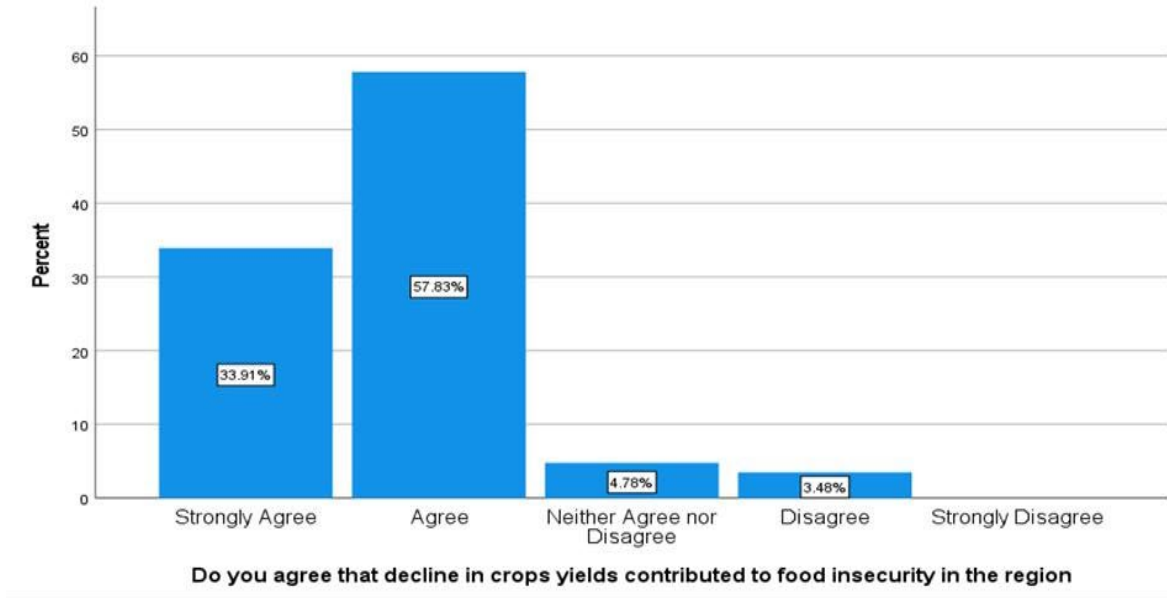


Figure 80: Declined crop yields, leading to a significant decrease in food security

Q23. On the question if Multinational Oil Companies gives management jobs/promotions (which are much more highly paid) to foreign workers rather than local workers in Nigeria or not, 79% of the people agreed and 10% disagreed, while 10% are less concerned.

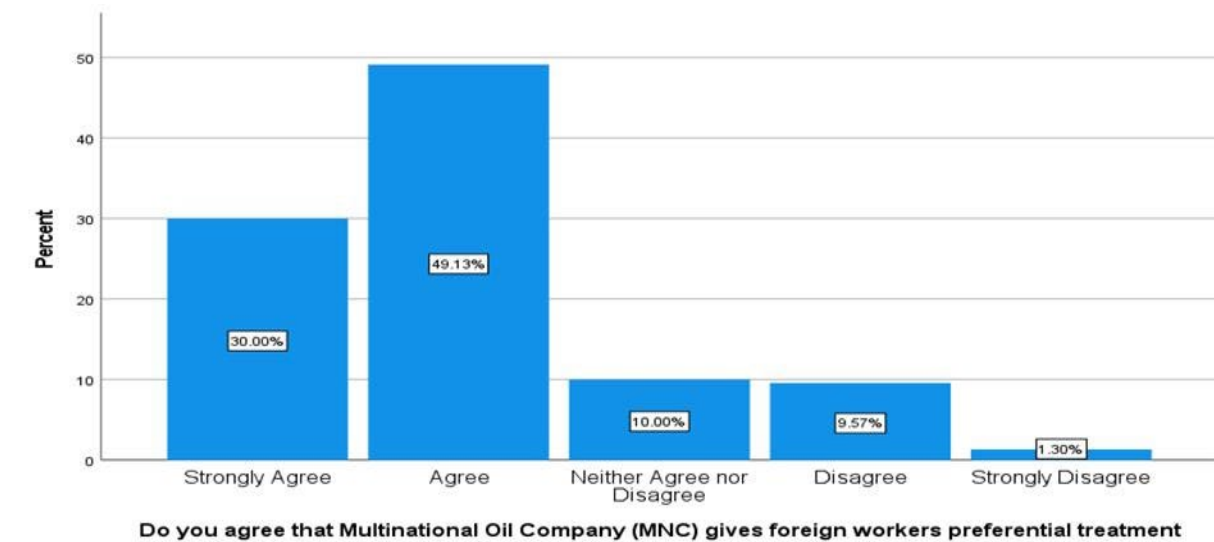


Figure 81: Multinational Oil Companies gives management jobs/promotions

Q24(a). Most people agreed that despite the huge allocations from the Federation account to the Niger Delta states, there is still grinding poverty, neglect and deprivation in the region that produces the nation's oil wealth. The tables indicate that over 70% of the respondents agreed to this view.

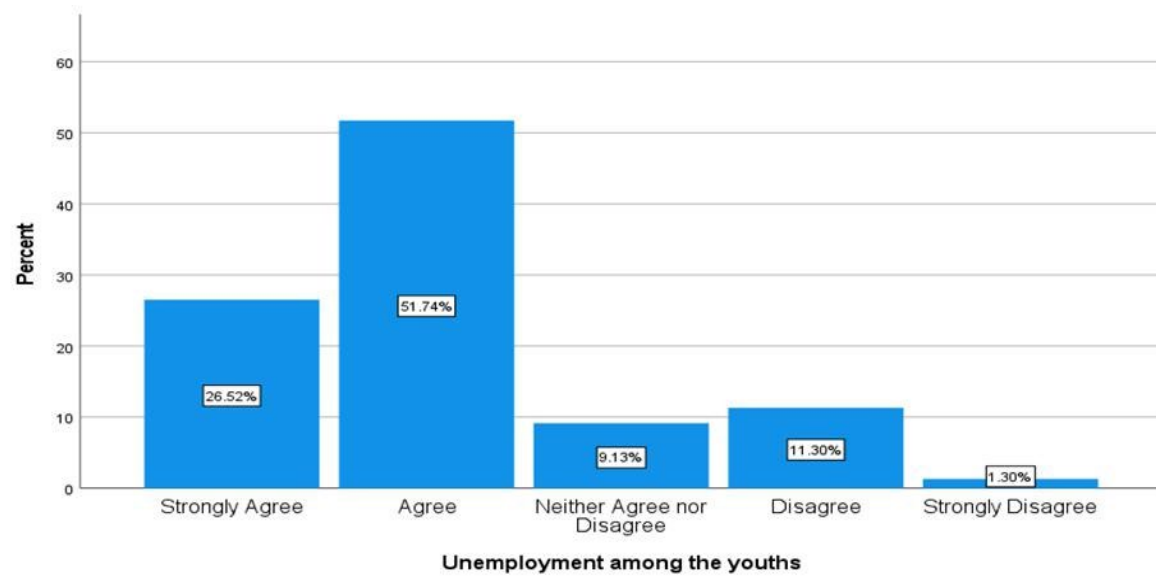


Figure 82: Unemployment among the youths

24(b). With regards to community displacement most people agreed with 25% strongly agree and 54% agree, 16% disagree, 2% strongly disagree and 11% show no concern). Over 70% agree that pollution the water, damaging aquatic and land resources is the primary reason for rural-urban migration.

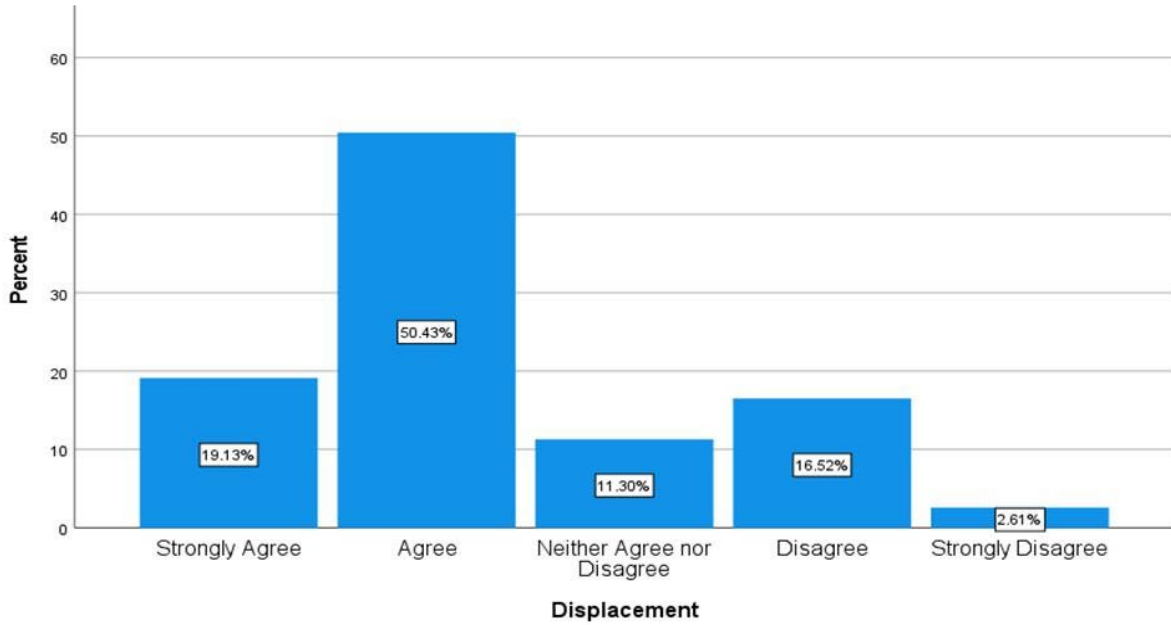


Figure 83: Displacement

24(c). With regards to drift in rural-urban region, 13% strongly agree and 68% agree, while 10% disagree and 6% neither agree nor disagree. From respondent’s perspectives, over 80% of them agree that pollution the water, damaging aquatic and land resources is the primary reason for rural-urban migration.

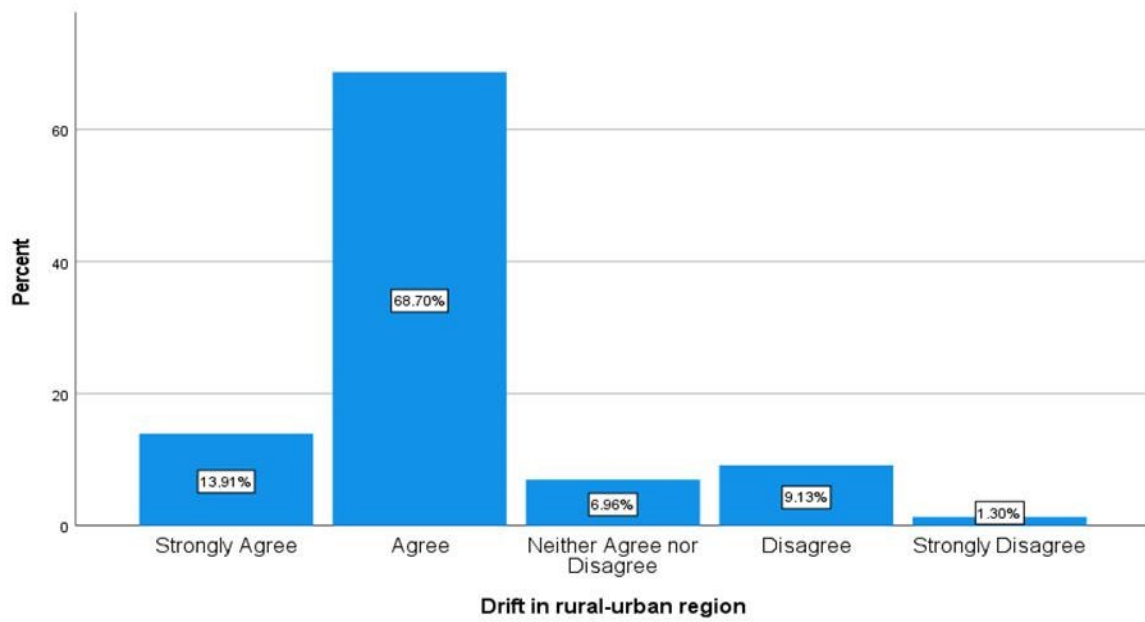


Figure 84: Drift in rural-urban region

24(d). On the question if the right of the people to a clean, safe, and healthy environment is routinely violated and abused by the government and oil companies or not, most people agreed (25% strongly agree and 60% agree).

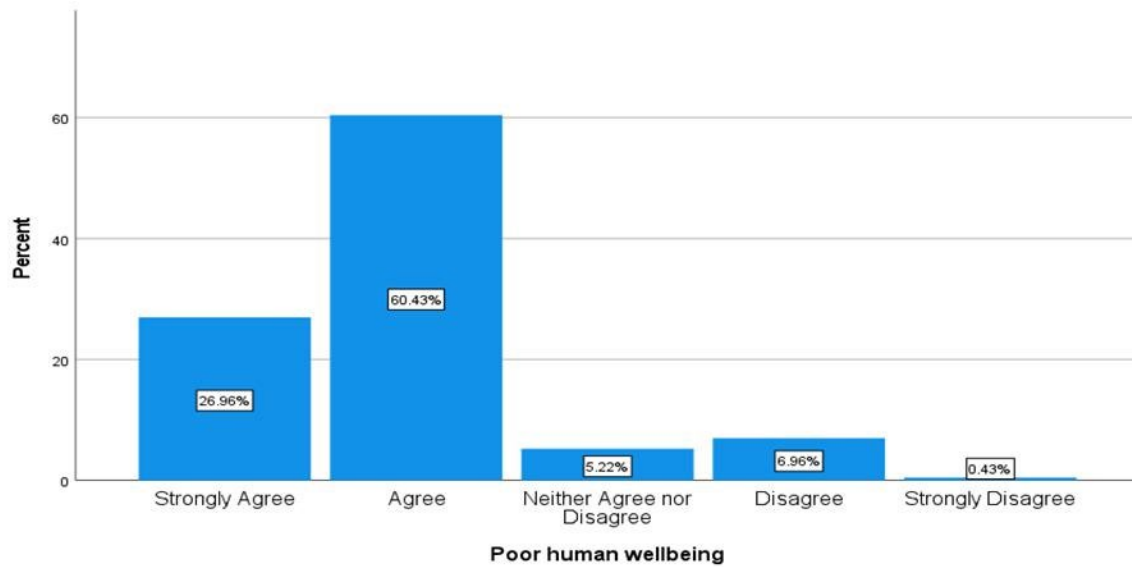


Figure 85: Poor Human Wellbeing

Q25. With regards to benefits of oil and gas development projects in the region to oil-producing communities 54% of the respondents chosen economic growth, 10% chosen provision of vital infrastructure, 18% chosen Jobs creation, 6% chosen encouraging business and 10% chosen none of the above.

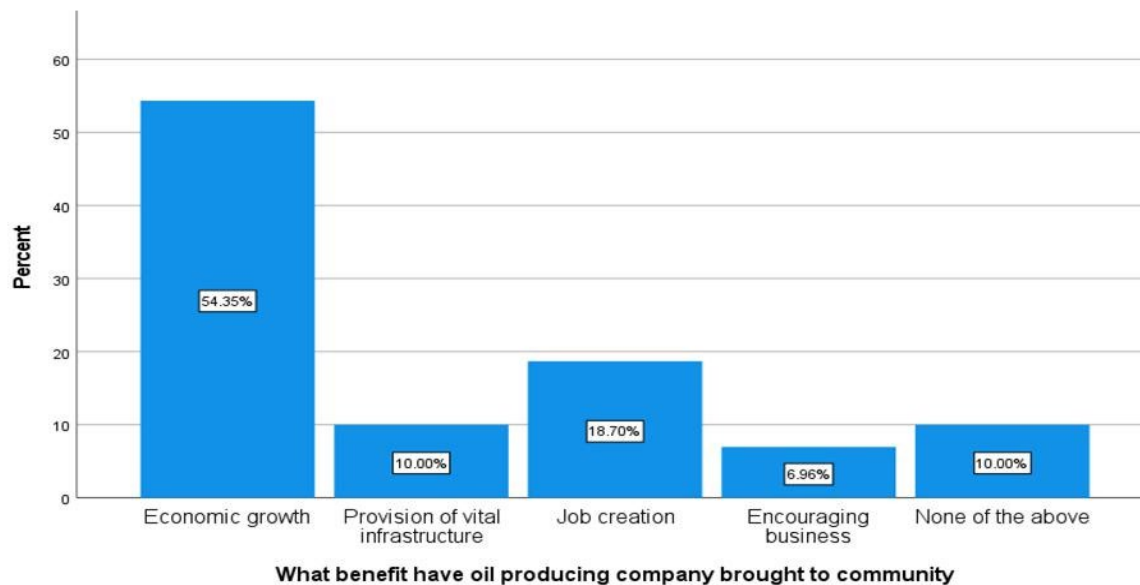


Figure 86: Benefits of oil and gas development projects

Q26. With regards to greatest impact of oil and gas companies in the regions the responses were mixed as 24% chosen environmental degradation, 31% chosen pollution, 12% chosen declined in biodiversity, 13% chosen climate change and 17% chosen none of the above.

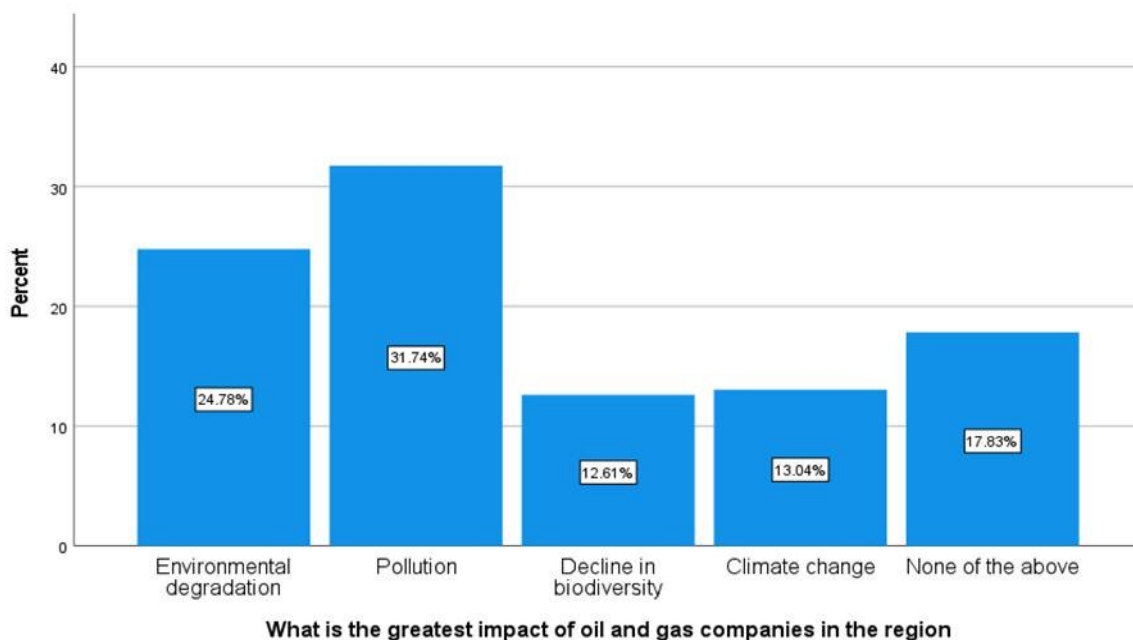


Figure 87: Greatest impact of oil and gas companies in the regions

Q27. With regards to the key beneficiaries from the activities of the oil and gas companies in the region 35% of the respondents chosen oil companies, 30% chosen government, 10% chosen foreign workers, 22% chosen local communities and 1% chose none of the above.

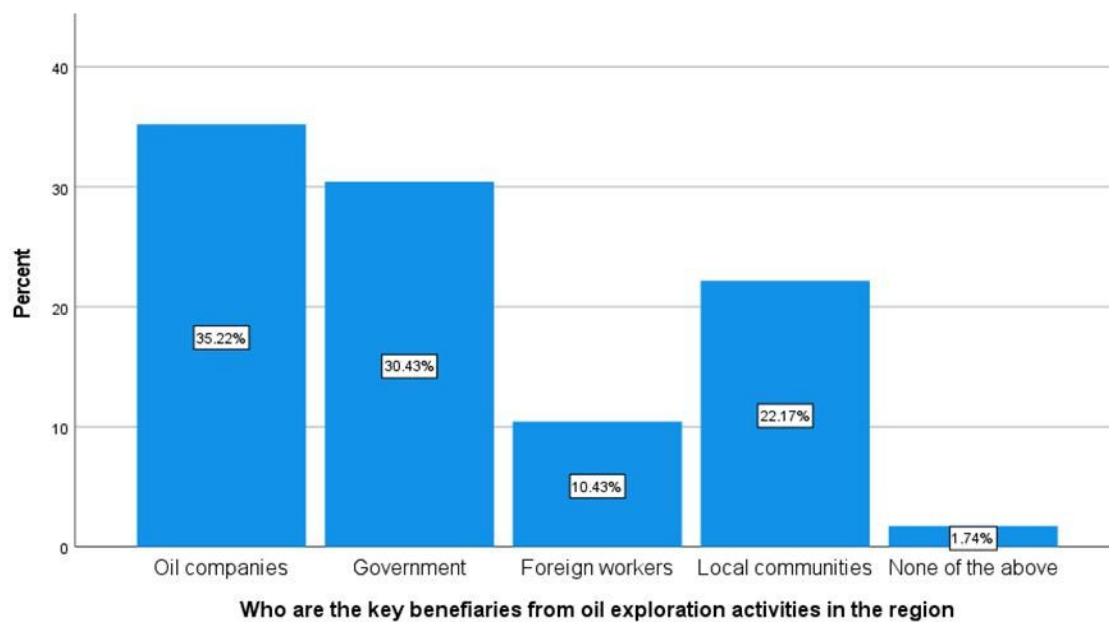


Figure 88: Key beneficiaries from the activities of the oil and gas companies

Q28. On the question if government inaction oil producing companies have been a positive or a negative influence on the region 26% "positive" and 73% answered "negative".

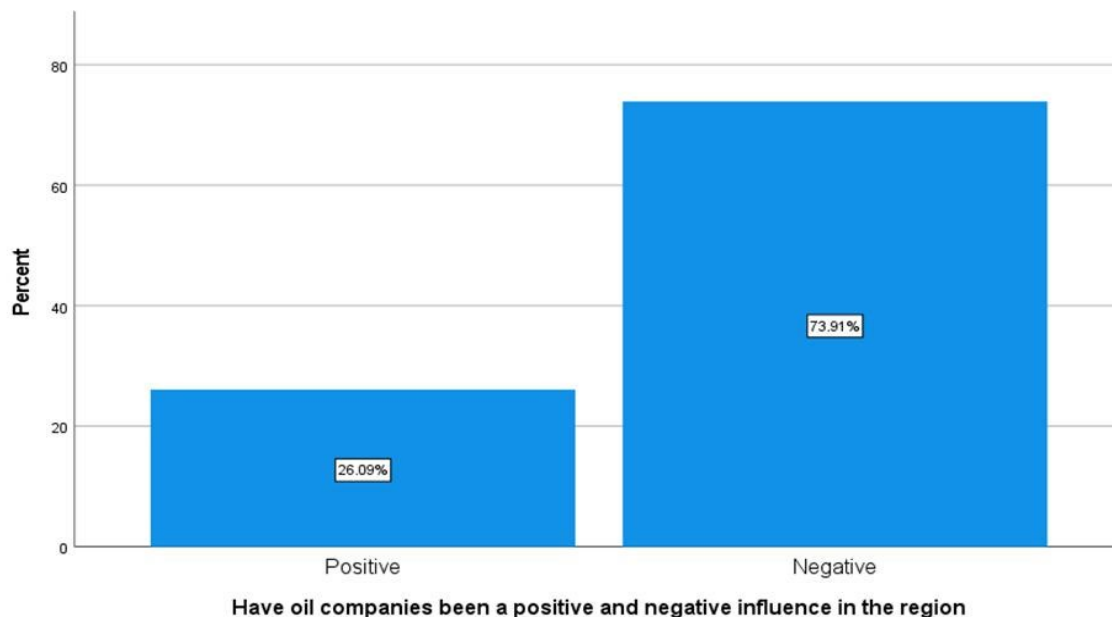


Figure 89: Oil producing companies influence

6.3. Inferential Statistics

6.3.1. Statistical Analysis and Findings Across the Age Groups

The Kruskal Wallis (KW) nonparametric statistical test was performed based on sorted mean and median data rather than the raw or original observations to compare to general equality throughout the topic. The KW test was used to see if there were statistically significant differences between the four age groups of an independent variable on a continuous or ordinal dependent variable. A single post hoc test comparison was used for multiple comparisons where there were statistically significant differences between the groups or variables. The data was analysed using SPSS (version 25), a statistical software programme. A significant criterion of $p < .05$ for similar measures was used throughout the investigation. The pairwise comparison findings, KW, mean, and median for each of the four age groups are given in the appendices.

In order to determine the significance of any differences in the mean rankings, the P-value for the null hypothesis (H_0) was compared. Under the null hypothesis, the Kruskal-Wallis Test is asymptotically distributed as chi-square and has a $k-1$ degree of freedom. The Bodo population was thought to be randomly and continuously chosen for the purpose of collecting statistics. The bar charts below provide a summary of the sociodemographic information of the participants used in the qualitative study. The

sociodemographic profile includes information on the age, marital status, sex, employment, annual income, educational background, and ethnic group of the 260 research participants.

The analyses are purely based on 260 participants who participated in the quantitative study. To carry out empirical investigation on the research questions, Kruskal Wallis test was conducted using demographic profiles to explain the different in attitudes and opinions towards oil and gas exploration activities. The findings, results and theoretical considerations are presented below:

6.3.2. Public Perceptions

6.3.2.1. *More Regulated Exploration Activities in the Niger Delta Region*

Descriptive statistics and Kruskal Wallis Test

With regards to responses of perceptions most of the people agree that institutional and regulatory failure in the oil and gas industry in Nigeria is a significant issue (86% strongly agree and 4% disagree and 8% undecided). The survey results revealed that 86% of the participants support the need for comprehensively review existing Nigerian legislation in the oil and gas industry as the existing ones are not fit for purpose, while 4% opposed this assessment, 8% of the participants undecided (Table 15). The data analysis showed the significant differences in attitude and opinion of the participants towards oil and gas exploration. The between aged 70 and above believe that exploration activities need to be regulated, they expressed strong support for environmental protection through effective regulations and standard setting in the oil and gas industry to ameliorate the suffering of the people while the younger people are less concerned. (Table 13). As far as this particular group is concerned, the aged 70 and above are very significant.

This opinion regarding institutional and regulatory failure in Nigeria's oil and gas industry has been further supported by a number of research studies, including those by William (2002), Ajibade and Awomuti (2009), Ibaba (2010), Onyekuru (2011), Ogbonnaya (2011), and Akpomovie (2011), which showed that lax enforcement and insufficient capacity is responsible for environmental degradation. When it comes to tackling the problem of environmental deterioration in regions that generate oil and gas, the data provided here paints a bleak picture of the serious deficiencies in national and international environmental protection rules. Odumugbo (2010) argued that political instability and institutional shortcomings in Nigeria are mostly caused by insufficient environmental and risk management methods. However, the primary issue with Nigeria's environmental policy is its lack of implementation. Nonetheless,

it is acceptable to conclude that Nigeria's environmental policy has not been successful in supporting sustainable economic development and progress given the ongoing and growing severity and scope of the nation's environmental concerns (Adeboyejo, 2017; Ogunkan, 2021). More significantly, Nigeria's environmental policy has been hampered by the lack of direct or indirect public engagement in the creation and implementation of environmental policy guidelines (Akamabe and Kpae, 2017).

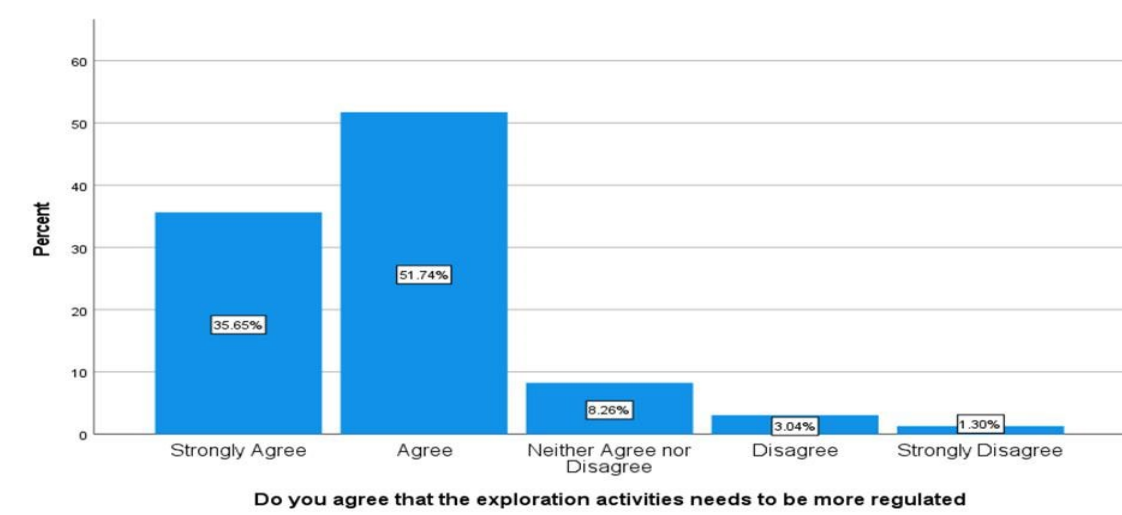


Figure 90: Public Response to Regulatory and Institutional Vulnerabilities in Nigeria's Oil and Gas Industry

Finding a balance between luring investors, optimising earnings, and protecting the environment and local people in host towns has proven to be an insurmountable challenge as oil and gas production has grown in importance to Nigeria's economy. While time is crucial, the industry is now marked by uncertainty, scaring away potential investors because of the sluggish pace of reforms and the Petroleum Industrial Bill's inability to pass. The current opportunities, developments, and challenges facing the oil and gas business are evaluated in this research.

The hypothesis test summary gives us a significant value of .013 (Table 4) and the value is below our significant level of .05. .013 on the table shows that in the variables the probabilities associated with the test statistics is less than .05, this means we have found significant evidence to reject the null hypothesis. Therefore, the decision here is that we have found the statistically significant difference between the four Age groups. The rank table also display the value for the mean rank, for example aged 30-49 (rank 2 = 107.78) and age 70 and above (rank 4= 163.00), we have found significant difference between at least two of the group ranks.

Table 4:Ranks

	Ranks		
	Age	N	Mean Rank
Exploration activities needs to be more regulated	18-29	38	120.64
	30-49	107	107.78
	50-69	71	115.02
	70 and above	14	163.00
	Total	230	

Table 5:Hypothesis Test Summary

Test Statistics ^{a,b}	
	Exploration activities needs to be more regulated
Kruskal-Wallis H	10.798
df	3
Asymp. Sig.	.013

a. Kruskal Wallis Test
b. Grouping Variable: Age

6.3.2.2. Exploration Projects Improving Infrastructure and Social Services

Descriptive Statistics and Kruskal Wallis Test

The findings from this study as illustrated on the table below provided useful insights to the provision of social amenities in Niger Delta communities. With regards to responses on perceptions most respondents agree that social amenities are a significant issue. For example, the result revealed that 25% strongly agree, 44% agree, 2% strongly disagree, 8% disagree and 19% undecided. Over 69% of the people agree that that oil discovery brought a great wealth to Nigeria. Over 117 million USD by 2012, has been invested in the programme of Global Memorandum of Understanding (GMOUs) (SCIN, 2013). The completed projects involved economic empowerment, housing, transportation, health, education, and electrification. The projects of economic empowerment included investments in small and medium-size

enterprises, micro-credit schemes and skill acquisition that all brought the view of increasing poverty in the societies (Idemudia, 2009).

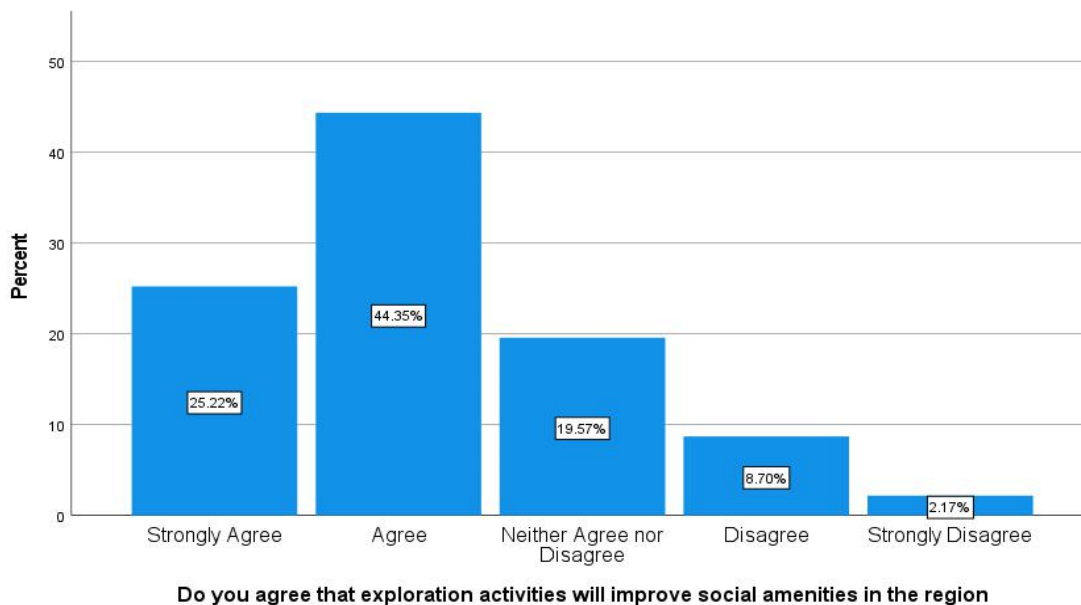


Figure 91: Public Response regarding Provision and Improve Infrastructure and Social Services in the Niger Delta Region.

Social development indicators for the Niger Delta area frequently show inadequate, non-existent, or poor-quality social services and infrastructure, from water to telecommunications. The long-standing disdain for this region's development is a significant barrier to attaining socioeconomic progress and reducing poverty (Niger Delta HD report, 2006). A bit more than 61 percent of respondents confirmed that their communities were home to a variety of developmental projects. These consist of the construction of roads, market booths, cottage hospitals, and borehole water supplies. According to the interviewees, all these measures were the fault of the oil businesses operating in their communities.

The hypothesis test summary gives us a significant value of .003 and the value is below our recommended threshold of .05. However, .003 on the table shows that in the variables, the probabilities associated with the test statistics is less than .05. This means we have found significant evidence to the null hypothesis. Also, what can be useful here, rank table does display the value for the mean ran, for example people with No Formal Education got the highest rank (71.19) and the group with Higher National Diploma got

the lowest rank (46.09). Therefore, the decision here is that we have found significant difference between at least two of those four groups.

From the Kruskal-Wallis table 30 below, the test result revealed that people with No Formal Education believe that exploration activities will improve social amenities in the region because this is an important thing as this will have huge economic impacts on communities, while the group with Higher National Diploma are less concerned. As far as this particular group is concerned while the group with no formal education are very significant.

Table 6 Ranks

Ranks			
	Educational Qualification	N	Mean Rank
Exploration activities will improve social amenities in the region	No Formal Education	8	71.19
	Primary Six Certificate	11	62.45
	Secondary School Certificate	44	68.57
	Higher National Diploma	52	46.09
	Total	115	

Table 7: Hypothesis Test Summary

Test Statistics^{a,b}	
Exploration activities will improve social amenities in the region	
Kruskal-Wallis H	13.846
df	3
Asymp. Sig.	.003

a. Kruskal Wallis Test
b. Grouping Variable: Educational Qualification

6.3.3. Communities Concern about Oil Exploration Activities

6.3.3.1. Environmental Degradation Affecting Water Resources and Poverty in the Region

Descriptive statistics and Kruskal Wallis Test

With regards to responses of perceptions most of the people agree that environmental degradation in the oil producing region is a significant issue, because the key information is most people agree (27% strongly agree and 60% agree). The results vividly showed that over 80% of the population agreed that "Niger Delta region has suffered some setback in terms of development compared to other regions in the country, 2% disagreed while 9% were undecided. As illustrated in the graph below, oil and gas projects contribute to high rates of unemployment in the oil-producing region as their original source of livelihood of fishing and farming have been destroyed, making most of the people in the region jobless and poor. Sam and Zabbey (2018) claim that poverty is a major problem for African towns that are home to crude oil. The bulk of crude oil in Africa is found in rural areas. These areas have poor educational attainment, hence it is common for the technological proficiency required for its discovery and processing to be imported. Roughly 70% of residents in Nigeria's Niger Delta area are estimated to earn less than \$1 per day (Amnesty International 2006). In addition to offering the perfect environment for fish recruitment and breeding, Bodo Creek's low intensity tidal current and mangrove cover also serve as a refuge for a range of fin and shellfish species typical of the tropical estuary system (Zabbey and Uyi, 2014; Zabbey and Tanee, 2014). The results clearly show that in order to swiftly make physical changes to the Niger Delta, the government should accord the region high priority. The development of social services and dependable, long-lasting infrastructure is necessary for the area.

Angola's economy has developed unevenly, averaging just around 5% yearly between 1985 and 2015, despite the country's oil industry growing quickly since the first commercial oil find was made there in 1955 (Mohammed 2018). The ban on fishing in regions that produce oil has altered the livelihood patterns of those living in Ghana's oil settlements, lowering their standard of living (Nguah and Mensah 2016; Akakpo et al. 2018).

Paul Collier, the head of Oxford University's Centre for the Study of African Economies, argues that the primary cause of poverty worldwide is a lack of economic growth (Collier, 2007a). Two major issues that are essential to Nigeria's sustainable development are the eradication of poverty and the establishment of sustainable livelihoods. According to Imam-Tamim (2014), considering the standard of living of the average Nigerian, it is actually hard to claim that the country's material resources are being used as efficiently as possible to serve the common good, as required by the Constitution. The rate of poverty in the nation is influenced by all of these factors. Therefore, tackling poverty has an effect on long-term growth.

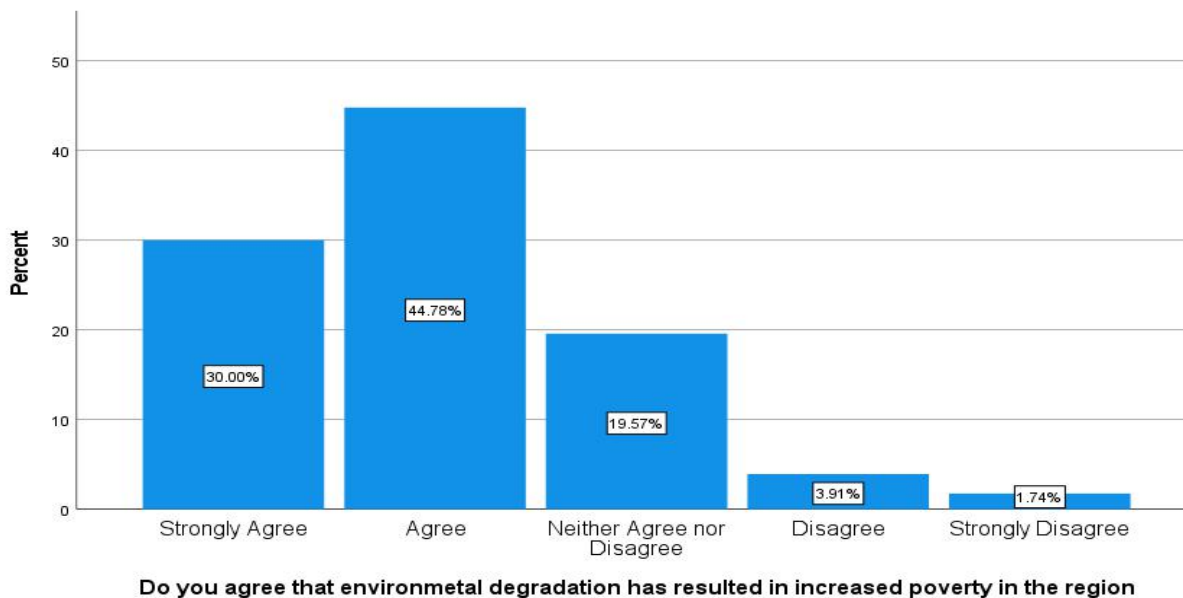


Figure 92: Public Response on Environmental Degradation and its link to Poverty

Research has demonstrated that the public's perception of energy development is influenced by social variables. Using the Kruskal Wallis test, the opinions of the four groups about environmental degradation were ascertained. Table 14 below illustrates how this test revealed a very significant difference at $p < 0.05$ in the four groups' attitudes on oil and gas development based on demographic variables. To determine if there was a fundamental difference between the groups, the Kruskal Wallis test was employed. Table 14 shows the outcomes of the group comparisons used to determine people's subjective evaluations of the characteristics and seriousness of a danger. The hypothesis test summary gives us a significant value of .012 and given that the p -value is less than our significant level of 0.05, we reject the null hypothesis and concluded that a significant difference does exist. As shown in Table 13, the results of the Kruskal Wallis Test analysis revealed that single parents, compared with widowed, perceived higher levels of risk. However, we have found significant difference between single parents (highest rank) = 122.07 and widowed (lowest rank) = 76.21, this means there is a relationship between the view that environmental degradation affects water resources, thereby increases poverty in the region.

Table 8: Rank Table

	Ranks		
	Marital Status	N	Mean Rank
Environmental degradation affects water resources, thereby increases poverty	Single	53	122.07
	Married	128	109.34
	Single parent	19	129.79
	Widowed	21	76.21
	Total	221	

Table 9: Hypothesis Test Summary

Test Statistics^{a,b}	
	Environmental degradation affects water resources, thereby increases poverty
Kruskal-Wallis H	10.870
df	3
Asymp. Sig.	.012

a. Kruskal Wallis Test
b. Grouping Variable: Marital Status

6.3.3.2. Negotiation among parties to tackle the problems in the region

Descriptive statistics and Kruskal Wallis Test

This study suggests that social acceptability of oil and gas development is a component of several public engagement processes that impact environmental decision-making. Table 27 displayed the distribution of participant responses. The study's conclusions show that more than 80% of respondents of whom 26% strongly agree and 56% agree—believe that corporate social responsibility is an essential problem, based on the responses given by the participants in the aforementioned table. The bar graph below shows that, regarding the extent to which indigenous people participate in decision-making, 82% of participants are dissatisfied with the current level of public involvement, 1% are satisfied, and 15% are undecided (Fig 94). Most respondents said that enough engagement is required to clarify sustainability policies, offer protection against unanticipated consequences, and improve anticipated results.

The public's need for better corporate social responsibility performance is growing. Developing public participation and emphasising the need for effective community communication to achieve common goals have been conceptualised as ways to improve public perception and impact on policy choices (Baldwin, 2019). Good stakeholder involvement provides a solid basis for resolving conflicts and a model for generating better informed policy results.

Localised globalisation and poor collaboration within the host community are obstacles to sustainable development. The concept of the place-based corporation offers a novel viewpoint on ownership and acts as a catalyst for achieving goals related to social, environmental, and economic performance (Shrivastava and Kennelley, 2013). Place and a feeling of ownership serve as catalysts for the beginning of a real push towards sustainability while simultaneously fostering opposition to globalisation. An awareness of place-based behaviour may improve an organization's mindfulness towards sustainable value (Barr et al., 2011; Shrivastava and Kennelley, 2013). Participation of the local population in the planning process is essential to achieving sustainability in the region.

After conducting a thorough literature review, Engert et al. (2016) looked into the integration of corporate sustainability into strategic management. They found that the main barriers to this integration are knowledge management deficiencies, organisational learning, legal compliance, and stakeholder disengagement. However, some scholars have discussed the significance of laws, regulations, and legal frameworks in the adoption of sustainability as a way to put pressure on companies to shift to corporate sustainability (Gond et al., 2012; Van Bommel, 2011; Schaltegger, 2011). Additionally, Abdulrahman et al. (2015) looked into a recent sustainability improvement project in Egypt that involved recovering refinery flare gas for the Egyptian Oil and Gas industry. They found that the efficiency of the new flare gas recovery project has been hampered by administrative, technological, and operational issues. Obstacles included the operational staff's reliance on inferior equipment and their lack of internal talents and experience.

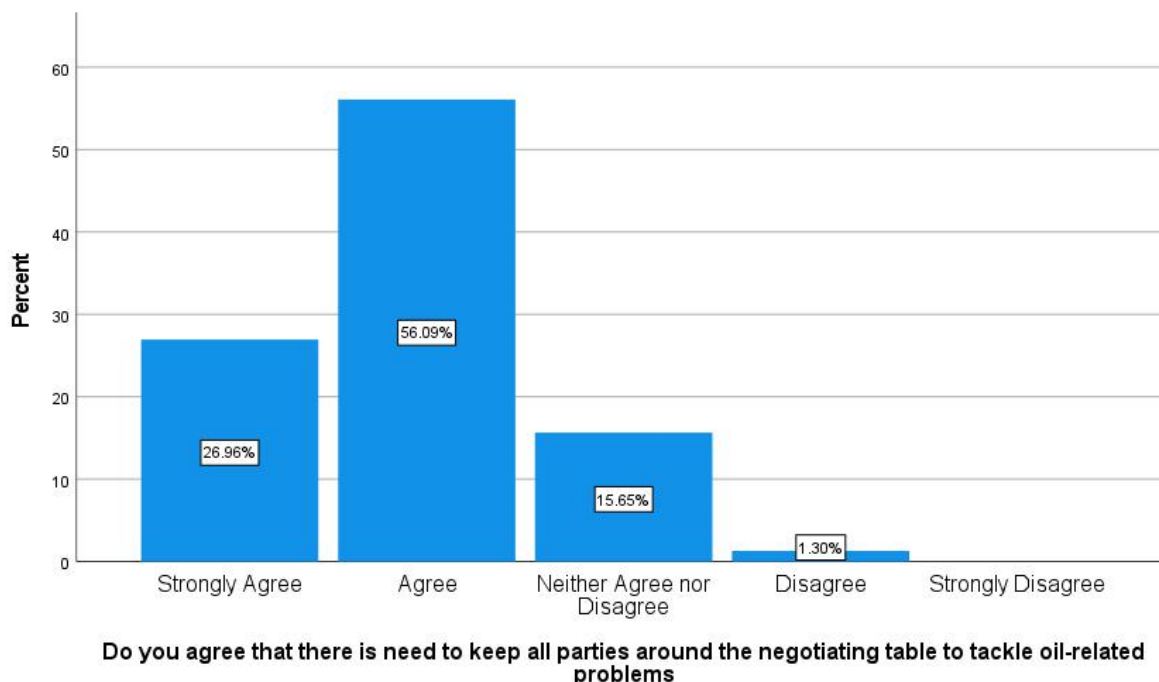


Figure 93: Public response regarding the need to keep all the parties around the negotiating table to tackle oil-related problems in the Niger Delta region

The idea of stakeholder participation has been used a lot in business and society studies as well as related streams of literature. Research on energy discourse suggests that excellent social representation and stakeholder participation are crucial for changing views towards oil and gas development and building institutional trust with the community.

Independent Kruskal Wallis was conducted to identify and compare whether there are significant differences in the opinions of the groups. There were significant different between the age groups. The mean rank from Kruskal Wallis Test result show youngest people between aged 18-29 who achieved the highest score (140.14) believe that keeping all parties around table is very important while the older people between aged 30-49 who achieved the lowest score are not bothered. Also in the table, .041 shows that in the variables, the probabilities associated with the statistics is less than .05. This means we have found significant evidence to the null hypothesis. With .041, some age group (aged 18-29) believe that there is need to keep all parties around negotiating table to tackle oil and gas-related problems in the region because it is an important thing to do, in this regard, this group are very significant. Therefore, the decision here is that we have found the different between the four age groups.

Table 10: Rank Table

	Ranks		
	Age	N	Mean Rank
There is need to keep all parties around the negotiating table to tackle the problems	18-29	38	140.14
	30-49	107	108.06
	50-69	71	114.32
	70 and above	14	111.50
	Total	230	

Table 11: Hypothesis Test Summary

Test Statistics^{a,b}	
	There is need to keep all parties around the negotiating table to tackle the problems
Kruskal-Wallis H	8.280
df	3
Asymp. Sig.	.041

a. Kruskal Wallis Test
b. Grouping Variable: Age

6.3.3.3. *Oil and Gas Exploration Activities as a Threat to Existing Economies (Agriculture, Tourism)*

Descriptive statistics and Kruskal Wallis Test

With regards to responses on concerns, about 66% of the participants (richest) preferred renewable energy (solar and wind) and 18% (within the poverty line) showed their support for oil and gas and 14% neither support oil and gas exploration nor opposed it. This is not surprising, given that the richest group are concerned about the oil and gas exploration on the environment compared to lowest income earners who support oil and gas based on the economic benefits.

The bulk of the wealthiest people in the research region, based on the data, are farmers and fishermen who have had to reduce their farms in regions severely affected by crude oil spills. It affects the quality of water for drinking, recreational use, swimming, fishing, and domestic use, among other uses. Farming is

one of the most common occupations among Niger Delta people. Crops including cocoa, cashew, maize, oil palm, and cassava are often grown in the region. When parts of their property were damaged by oil spills, farmers are obliged to reduce the size of their fields. For example, when agricultural land is destroyed, farmers lose their means of sustenance (Omohimoria *et al.*, 2014). Since 1956, when the first commercial extraction of crude oil in the region took place, farming and agriculture in general have seen changes in history. E&P oil and gas activities have resulted in a drop in crop yield and other farming operations (Ebegbulem *et al.*, 2013a). An investigation of the effects of oil spills on cassava farmlands and productivity was carried out by Ahmadu and Egbodion (2013). Crop failure, low yield, rotting tubers, stunted crop development, toxicity, reduced soil fertility, and decreased cassava output were among their results.

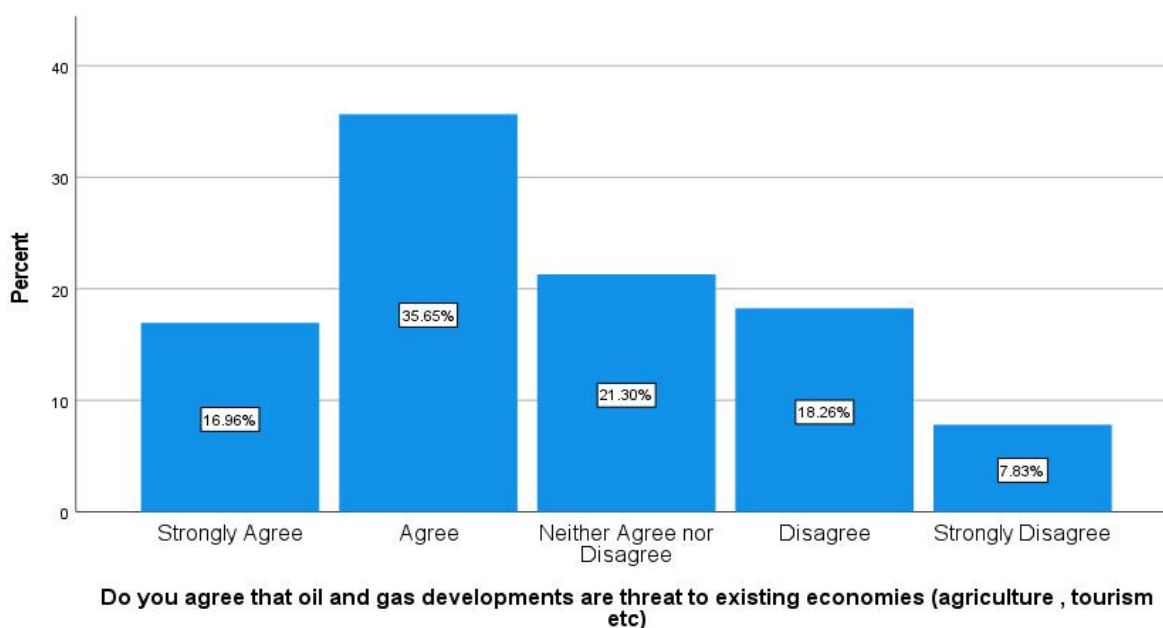


Figure 94: Public response regarding the key consequences of oil exploration in Niger Delta

Exploiting natural gas and oil has shown to be an effective way to promote economic growth. Moreover, there have been claims that the ecological suffers from oil and gas exploration. This survey contrasted public opinions about renewable energy sources, gas, and oil. According to the research, the wealthiest people have opposed oil and gas because they believe that these resources pose a threat to the established economic systems (agricultural and tourist). The wealthiest people are fully aware that pollution cannot be produced by renewable energy sources like solar and wind. The group unanimously

concluded that increasing the production and availability of renewable and ecologically friendly energy sources is the best way to secure a sustainable future.

The hypothesis test summary gives us a significant value of .041 and this value is below our significant level of 0.05 ($H = .041$; $p < 0.05$). With .041, there is more disagreement of our data with the null hypothesis and can begin to consider rejecting the null hypothesis, therefore the decision here is that we have found the differences between the 4 groups. From the above Kruskal-Wallis table, it shows that richest people believe that exploration activities are to the existing economies while the poorest groups showed lack of interest in the subject. As far as this particular group is concern, the richest group are very significant.

But also, what can be useful here is that rank table does display the value for the mean rank, for example we have found significant difference between at least two of those ranks group with lowest monthly income (57.94) and the richest people (78.99).

Table 12: Rank Table

	Ranks		
	Monthly Income	N	Mean Rank
Threat to existing economies (agriculture , tourism stc)	Below #25,000	31	57.94
	#25,000 - #40,000	31	76.47
	#40,000 - #55,000	31	60.32
	#55,000 - #65,000	45	78.99
	Total	138	

Table 13: Hypothesis Test Summary

Test Statistics ^{a,b}	
	Threat to existing economies (agriculture , tourism stc)
Kruskal-Wallis H	8.243
df	3
Asymp. Sig.	.041

a. Kruskal Wallis Test

b. Grouping Variable: Monthly Income

6.3.3.4. *Need for Multinational Oil Companies to Refrain from Their Activities Damaging the Environment of the Host Communities*

Descriptive Statistics and Kruskal Wallis Test

With regards to responses on sustainability efforts in the Niger delta region most of the people agree that refraining from unsustainable practices in the region is a significant issue (36% strongly agree, 35% agree, 11% disagree and 15% undecided).

An analysis of participant survey responses revealed varying perceptions of the concepts of sustainability. The study's findings showed how important it is to understand sustainability better in order to effect long-lasting societal change. 71% of participants said that the oil company's sustainability measures had a positive overall social impact. Participants essentially agreed that people are the driving force for sustainability. Seventy-one percent of participants, mostly those with lower incomes, supported the notion that the oil industry should promote sustainability as a way to increase community engagement.

Sustainable value is hampered in the Niger Delta by the consequences of corrupt activities (George *et al.*, 2012). By embracing corporate philanthropy above corporate social responsibility (CSR), the oil multinational firms have stoked a divide between industry and society. In doing so, the oil multinationals have damaged the unity of the region and encouraged people to work independently in order to satisfy their financial demands (George *et al.*, 2012). Corrupt practices infiltrated into the community by government officials and oil companies harm development projects (George *et al.*, 2012). The overwhelming amount of evidence suggests that marginalisation, corruption, and lax enforcement are the main causes of the NDR's sustainable development deficit (Ogundiya, 2011). The diversion of public funds for personal benefit has altered the political environment and made progress illusory. Making corruption incapable of promoting meaningful and common-sense growth might help the place develop (George *et al.*, 2012; Ogundiya, 2011).

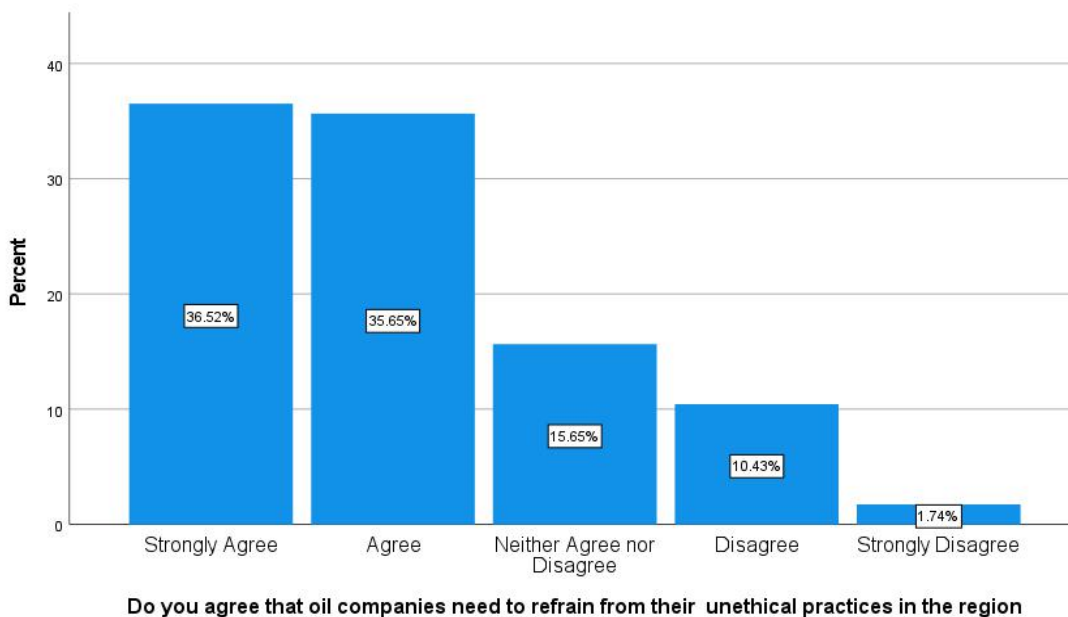


Figure 95: Public Response regarding environmental destruction host communities

Along with the growing need for sustainable energy sources, there is an increasing need to understand the underlying variables influencing community attitudes and responses to local energy efforts. This study looked at how place attachment affected the Bodo community's perceptions of oil and gas development.

The Kruskal Wallis test of mean comparison across the group revealed significant differences ($p < 0.05$) in the impact of sustainability initiatives in the Niger delta area. Our findings suggest that the group under investigation is less likely to be identical, as evidenced by the Kruskal Wallis test result, which shows that our p value is less than our significant level of 0.05. Because our evidence contradicts the null hypothesis, it is rejected as a consequence. The findings show that there is a significant difference in monthly income between the poorest individuals and those with higher earnings. Also, from the rank point of view, we have found significant difference between at least two groups as the result indicates that lower income earner group (#25,000.00 to #40,000.00) got the highest score (78.90), and the lowest income earner people (below #25,000.00) score the lowest (53.90). Kruskal Wallis test revealed that the lower income earner group (#25,000.00 to #40,000.00) believe that there is need for multinational oil companies to refrain from their activities damaging the environment of the host communities, and the lowest income earner people (below #25,000.00) were completely unconcerned about these important issues. As far as

this particular group is concerned the lower income earner group (#25,000.00 to #40,000.00) are very significant.

Table 16: Rank Table

Ranks			
	Monthly Income	N	Mean Rank
Oil companies need to refrain from their activities damaging the environment	Below #25,000	31	53.90
	#25,000 - #40,000	31	78.90
	#40,000 - #55,000	31	62.44
	#55,000 - #65,000	45	78.63
	Total	138	

Table 17: Hypothesis Test Summary

Test Statistics^{a,b}	
	Oil need to refrain from their activities damaging the environment
Kruskal-Wallis H	10.923
df	3
Asymp. Sig.	.012

a. Kruskal Wallis Test
b. Grouping Variable: Monthly Income

6.3.4. Oil Company's Roles in Environmental Abuse in The Niger Delta Region

6.3.4.1. Impacts of Oil and Gas Companies in the Regions

Descriptive statistics and Kruskal Wallis Test

With regards to responses on oil company's roles in environmental abuse in the Niger delta region most people agree that climate change is a significant issue because the key information is that most people agree (29% strongly agree and 56% agree). Most of the respondents agree that impacts of climate change in the region is a significant issue. About 85% of the population agree that rises in temperature and more recurrent extreme weather events have affected freshwater resources and biodiversity loss in the region and the was based on their perceptions towards these activities.

The Niger Delta's residents suffer greatly from the pollution that gas flaring causes to their health. According to IPCC (2007), connected petroleum gas released into the atmosphere with greenhouse gases

also contains hazardous materials such as dioxins, benzene, toluene, nitrogen, and sulphur dioxide. The harmful consequences of these poisonous fumes on human health are particularly severe for the locals living near and within the reach of gas flaring stations (Nwosisi *et al.*, 2019). The effect of air pollution on human health has been the subject of several lengthy epidemiological studies (Brunekreef and Holgate, 2002). All things considered, the results strongly suggest that growing hospital and mortality rates are directly related to air pollution. This is exacerbated by the fact that individuals are exposed to varying degrees and durations of air pollution (Jaishankar *et al.*, 2014).

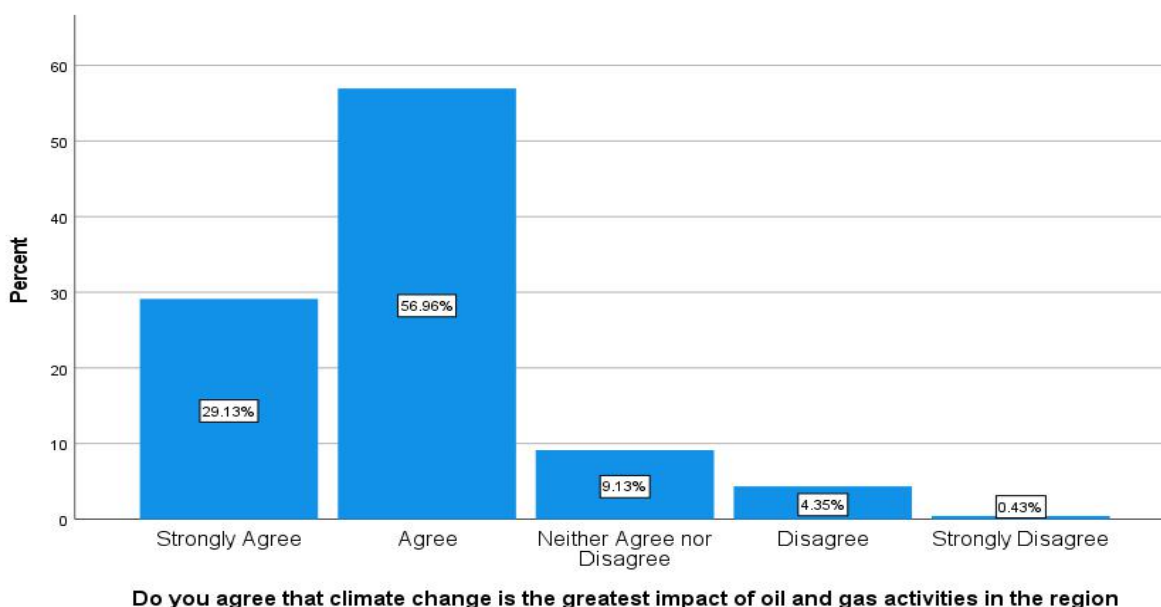


Figure 96: Public response regarding the keys Impacts of climate in the Niger Delta Region.

Due to the ongoing ozone layer depletion brought on primarily by human activities, such as the continuous production of greenhouse gases, many places on Earth are currently experiencing a global treat (Odjugo, 2010, 2011; Ukhurebor and Abiodun, 2018; Ogunniran, 2018; Ado *et al.*, 2019; Mucheye *et al.*, 2020). In comparison to the NDRN, the IPCC claims that human activities, such as the finding and use of petroleum resources, have greatly increased the release of greenhouse gases (GHGs) in Nigeria (IPCC, 2013; IPCC, 2014).

The hypothesis test summary gives us a significant value of .040 and this value is less than 0.05, we have evidence against the null. This small p-values with Kruskal-Wallis lead us to reject the null hypothesis. Therefore, the decision here is that we have the difference between the groups. The test table showed that the unemployed people believe that air pollution is one of the major environmental problems

confronting the Niger Delta Area while government's employed people showed no serious concerns about this issue. As far as this particular group is concerned the unemployed people are very significant.

Also, what can be useful here is rank table does display the value of the mean rank, we have found significant difference between at least two among the groups. For example, unemployed people got the highest rank of 91.54 and government employees of 69.40. Therefore, there is a relationship between the individual perception concerning the amount of contamination in Ogoniland that has made the area the worst-affected region in Nigeria because the unemployed strongly agreed and government's employed people disagreed.

Table 14: Rank Table

Ranks			
	Occupation	N	Mean Rank
Climate change	Farmer/Fishermen	35	69.44
	Unemployed	34	91.54
	Employed (Government)	40	69.40
	Employed (Private)	48	85.08
	Total	157	

Table 15: Hypothesis Test Summary

Test Statistics^{a,b}	
	Climate change
Kruskal-Wallis H	8.312
df	3
Asymp. Sig.	.040

a. Kruskal Wallis Test

b. Grouping Variable:
Occupation

6.3.4.2. *Government's Inaction Contributing to the Crisis in the Niger Delta Region*

Descriptive Statistics and Kruskal Wallis Test

In terms of attitudes, most respondents (26 percent strongly agree, 56 percent agree, 10 percent disagree, and 6 percent are unsure) think that disagreements and conflicts within communities are a significant issue in Nigeria. Most participants (82%) claimed that the oil company leadership's efforts to be

sustainable had a detrimental effect on the local populace. Eighty-two percent of participants expressed the opinion that current corporate sustainability initiatives have a negative impact on the local population. Ten percent of participants thought that misperceptions prevented corporate social responsibility from having a positive impact on the local population.

The Niger Delta's oil-induced environmental disturbance has not only destroyed traditional livelihoods but also led to conflicts both within and between communities and between the communities and the oil companies (Imobighe 2004). The violent state of the Niger Delta is a result of long-standing neglect of the region's sustainable development plan and inadequate governance (Omojimite, 2012). It's possible that the fifty years of oil production in the Niger Delta only contributed to the region's poverty, famine, and collapse of infrastructure (Omojimite, 2012). Environmental contamination and degradation caused by the oil sector have resulted in violations of the rights to life, health, and a healthy environment, as well as the right to necessities of life (food and water) (AI, 2009). In the oil-rich Niger Delta, which provides 90% of Nigeria's foreign exchange earnings and around 50% of the nation's GDP, over 70% of the country's indigenous population suffers from hunger and poverty (Obi et al., 2006).

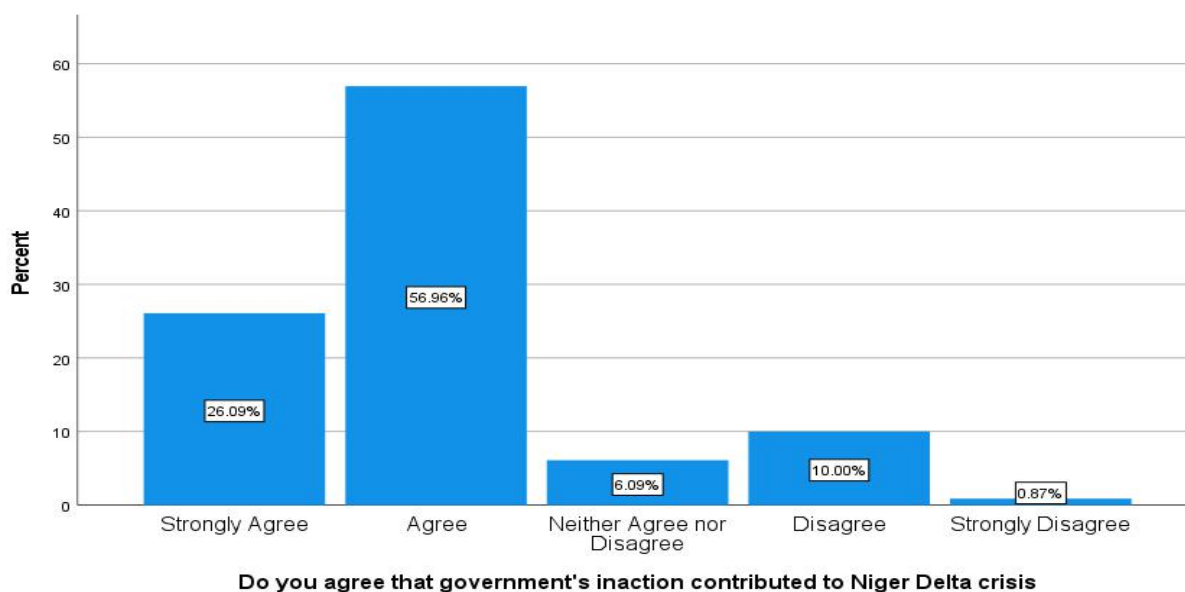


Figure 97: Public Response on the government roles in the Niger delta crisis

Environmental degradation is one of the main problems that the oil-producing Niger Delta areas of Nigeria are dealing with. The traditional means of sustenance and attempts towards sustainable development of the inhabitants are significantly impacted by the severe contamination of the Delta.

The hypothesis test summary gives us a significant value of .017 and this value is less than our significant threshold $p < 0.05$, we reject the null hypothesis that there is no difference between the means and concluded that a significant difference does exist. Therefore, with 0.17, the higher income earning group believe that government needs to pay more attention oil-related problems that contributes to the crisis in the Niger delta region because it is an issue. As far as this group is concerned, it is the higher income earning group that are very significant.

Kruskal Wallis Test result also revealed that level of public opposition to government's inattentiveness to locals in the Niger delta region is high among the rich compared to the poor. The mean rank indicates that the high-income earners got the highest score (85.19) and the poor score the lowest (58.98).

Table 16: Mean Rank of the Groups

Ranks			
	Monthly Income	N	Mean Rank
Government inaction contributed to Niger Delta crisis	Below #25,000	31	66.13
	#25,000 - #40,000	31	58.98
	#40,000 - #55,000	31	85.19
	#55,000 - #65,000	45	68.26
	Total	138	

Table 17: Hypothesis Test Summary

Test Statistics^{a,b}	
	Government inaction contributed to Niger Delta crisis
Kruskal-Wallis H	10.240
df	3
Asymp. Sig.	.017

a. Kruskal Wallis Test

b. Grouping Variable: Monthly Income

6.3.4.3. *Adopting International Laws and Regulations by Nigerian Government for Monitoring Various Petroleum Activities in Nigeria*

Descriptive Statistics and Kruskal Wallis Test

With regards to responses on the needs for adopting international laws and regulations for monitoring various petroleum activities in the region, majority of the respondents as illustrated in the in the graph below agree that the existing Nigeria environmental statutory laws and regulations are ineffective. From respondent's perspectives, about 67% agree that Nigerian government should adopt international laws and regulations for monitoring various petroleum activities in the region as these will improve social and economic growth conditions of the oil-producing communities, 17% disagree and 13% undecided.

Later Nigerian administrations adopted an uncompromisingly strict stance, making flaring illegal by law and penalising the practice with fines, penalties, and environmental levies (Mohammed, 2016). However, because to a lack of effective legal and regulatory frameworks for enforcing and monitoring legal compliance, Nigeria's attempts to curb AG flaring have not produced the greatest outcomes. The IEA 2013 report states that strong and effective regulation, caution in matters of health, safety, and the environment, and an appealing fiscal structure are all important in Norway's successful management of its petroleum resources (IEA, 2014). Over the past few decades, Norway has successfully combated argon gas flaring because to this one piece of legislation. While the production of crude oil has nearly doubled during this period, the amount of argon gas flared as a percentage of oil output has decreased dramatically (MPE, 2014).

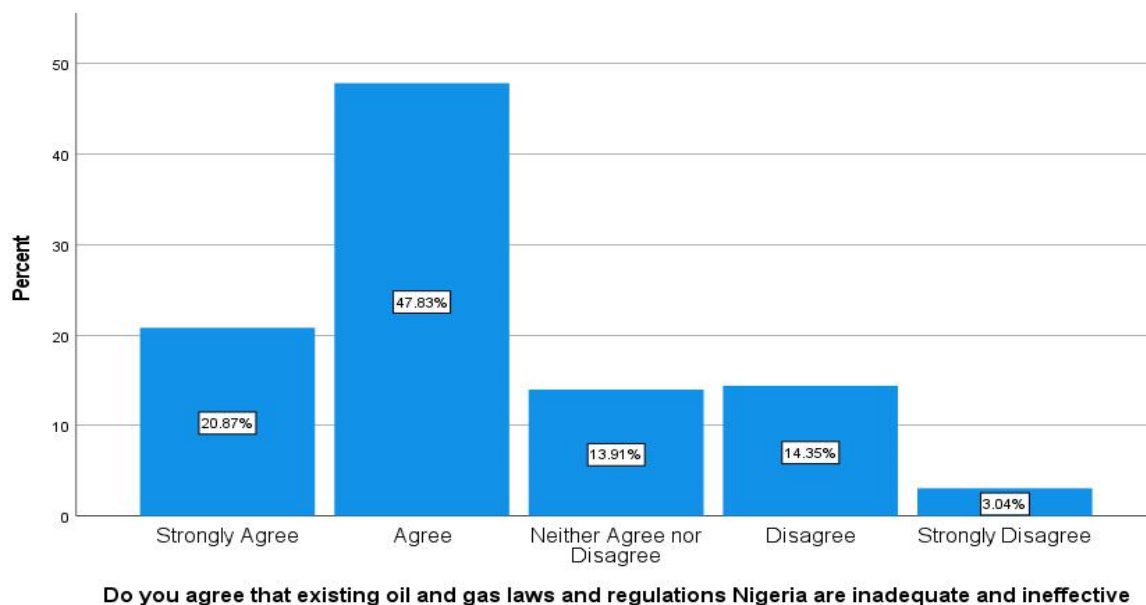


Figure 98: Public Response regarding the needs for adopting international laws and regulations for monitoring various petroleum activities

The most important regulatory limitation is the lack of enforcement of existing restrictions. Almost all of the major environmental problems have regulations in place, and enforcing them would significantly slow down the degradation of the environment. However, some adjustments to the current legal framework are necessary to improve the efficacy of environmental protection.

From the above Kruskal-Wallis table below, the hypothesis test summary gives us a significant value of .008 and this is less than our significant value of .050. With .008, our data suggest that the groups being studied are the same and our data is incompatible with null hypothesis. Therefore, we have sufficient evidence to reject the null hypothesis. With .008, some group aged 30-49 believe that there is need to adopt international laws and regulations for monitoring various petroleum activities because it is an important thing. Our decision here, we have found the difference between of at least two of the four groups. For example, as indicated in the rank table below the group aged 30-49 score the highest rank (125.86) and the youngest people between aged 18 – 29 got lowest score (88.18) in mean rank. It is also illustrated in the table that between age 30-49 believe that there is need to adopt international laws and regulations in the Niger delta region while the age 18-29 showed no serious concerns about the issue. As far as this group is concerned the age 30 – 49 are very significant.

Table 18: Mean Rank of the Groups

Ranks			
	Age	N	Mean Rank
Government to adopt international laws and legislations	18-29	38	88.18
	30-49	107	125.86
	50-69	71	114.57
	70 and above	14	115.21
	Total	230	

Table 19: Hypothesis Test Summary

Test Statistics^{a,b}	
Government to adopt international laws and legislations	
Kruskal-Wallis H	11.710
df	3
Asymp. Sig.	.008

a. Kruskal Wallis Test
b. Grouping Variable: Age

6.4. Qualitative Analysis

6.4.1. Sociodemographic Information – Qualitative Study

Age, gender, educational background, and level of professional experience were the sociodemographic factors that were used as significant descriptive measures about the social dimension. This was followed by a series of open-ended questions designed to elicit information about the experience, attitudes, and beliefs regarding oil and gas exploration in the Niger Delta region (illustrated in the table 1-4 below). A total of eighteen people were interviewed. Participants included one petroleum engineer, two representatives from non-governmental organisations and one petroleum geologist. Other participants were one senior employee from the Ministry of Environment, three legislators, one lecturer from a university teaching social science, one lecturer from a university teaching petroleum engineering, and seven senior employees from the Ministry of Petroleum Resources.

Eleven percent of participants are between the ages of thirty and forty-nine, sixty-seven percent are between the ages of fifty and sixty-nine, and six percent are beyond the age of seventy-seven. Overall, there are 72% male participants and 28% female participants. Regarding their experiences in oil and gas exploration, the technical and professional backgrounds of the research participants differed greatly. Around 17% had six to ten years of experience, 22% had eleven to sixteen years, 44% had seventeen to twenty-two years, and 17% had thirty to thirty years. Tables 1-4 below provide the sociodemographic background of the experts sampled for the qualitative study. The qualitative sample is divided into two groups, namely technical experts (such as environmental scientists and petroleum engineers) and policy experts.

Table 20: Demographic Characteristics of the Qualitative Sample (n18)

Variable	Frequency	Percentage
Table 1. Age of participants		
18 – 29	1	6
30 – 49	2	11
50 – 69	14	77
70 and above	1	6
Total	18	100
Table 2. Gender of participants		
Male	13	72
Female	5	28
Total	18	100
Table 3. Professional status		
Petroleum Engineers	2	11
NGO Members	2	11
Petroleum Geologist	1	6
Policymakers	3	17
University Lecturers	2	11
Senior Personnel at Ministry of Environment	1	6
Senior Personnel at Department of Petroleum Resources	7	38
Total	18	100
Table 4. Year of experience		
6 – 10	3	17
11 – 16	4	22
17 – 22	8	44
23 - 30	3	17
Total	18	100

6.4.2. Qualitative Analysis and Themes

Table 21: Participant's (Experts) Information

Participant's Number	Occupation	Sex	Age
P1	CEO (Independent Oil Company)	Male	69
P2	Senior Personnel (Multinational Oil Company)	Male	61
P3	Policymaker	Male	29
P4	Safety Manager (Independent Oil Company)	Male	54
P5	Policymaker	Female	62
P6	Rig Engineer	Male	69
P7	Senior Personnel (Multinational Oil Company)	Male	65
P8	CEO (Independent Oil Company)	Male	60
P9	Petroleum Geologist	Female	60
P10	Senior Personnel (Ministry of Petroleum Resources)	Male	62
P11	Social Sciences University Lecturer	Female	54
P12	Pump Engineer Independent Oil Company).	Female	49
P13	Petroleum Engineering University Lecturer	Male	51
P14	NGO Member	Male	55
P15	Senior Personnel (State Ministry of Environment)	Female	46
P16	NGO Member	Male	52
P17	Niger Delta Development Commission Member	Male	70
P18	CEO (Independent Oil Company)	Male	60

6.4.3. Opinions of a Number of Experts About the Consequences of Oil Production and Exploration in Niger Delta

6.4.3.1. *Environment and the Quality of Life Suffered due to Development of Crude Oil Resources*

When asked what they felt of oil and gas exploration operations in the Niger Delta, almost 80% of the experts questioned said that they strongly disliked such activities. On the other hand, 12% of participants

supported it, saying that the risks exceed the benefits. The experts who supported the Bodo community's oil exploration operations claim that it has a long history of partnerships with the oil and natural gas businesses. The individuals thought that the perceived danger was lower in the community because of its historical links to the industry. This, in turn, is observed associated with the thought that public understood how the firm ran, therefore were not moved by the introduction of new technology or the discussions surrounding it. Those who opposed oil exploration emphasised the potential harm to the environment and public health. The region's massive environmental pollution from burning natural gas has destroyed the ecosystem. Besides this, the rising oil spill and contamination levels in aquatic ecosystems pose a serious risk to the environment and public health; and ongoing pipeline corrosion and damage contaminates waterbodies, eventually destroying aquatic life.

Some participants also felt that oil and gas exploration is not feasible in Nigeria due to the degree of risk and uncertainty involved in the activity. However, there are other certain it suitable, specifically those associated with sustaining the local business community. Furthermore, encouraging economic growth through job creation, and providing basic infrastructure, such as power, roads, healthcare, and education, to remote areas are also prerequisites for supporting oil and gas development.

According to participant 8,

“We understand that a key barrier to adopting sustainability is the absence in managerial commitment. The successful implementation of the sustainability agenda inside such organisations depends on senior management's belief that sustainability is a serious issue that should be addressed as a primary goal within the corporate strategy of an organisation. It is also necessary to begin thorough monitoring of Ogoniland's air quality in order to detect ongoing pollution, assist in the formulation of public health recommendations, and assess the effectiveness of clean-up activities at various areas.”

As per participant 15,

“It seems that the government and oil companies are not ready to embrace sustainable best practices because of their own self-interest. These risks, however, may be decreased by identifying industry barriers and creating a solid strategy to get over them, such as understanding and following regulations and working with lawmakers on the sector's role in new energy.”

Participant 4 expressed,

“One may legitimately see the oil industry as a blessing. Although oil is necessary for our civilization, it also seriously jeopardises the global biosphere and life. The area emits some of the most carbon dioxide into the atmosphere, a number of significant rivers are seriously poisoned, and acid rain and oil spills can affect farmlands. The development of many acts that function as legal frameworks and regulatory tools is necessary to set up robust rules for the management and oversight of Nigeria's oil industry and to guide its activities.”

Participant 13 also said that,

“Conflicts inside and across communities have increased as a result of the pervasiveness of bribery and corrupt practices in the region. Some of the most well-known community leaders who have opposed the policies and actions of the government and multinational oil companies have been arrested and detained on a regular basis. In November 1999, for example, the Nigerian government executed Isaac Adaka Boro, Ken Saro-Wiwa, and his Ogoni compatriots.”

Participant 7 offered evidence in support of oil exploratory operations in the region, pointing out that,

“Because the activity balances benefits and risks, people may tolerate and even consider the risks connected with the oil and gas industry as small. However, the benefits far outweigh the disadvantages. There are many people who work in this business and rely on it for their income.”

6.4.3.2. Government Funds Upgrading the Healthcare and Education Services from Money It Gets from the Oil Corporations

The country has never before mismanaged its human resources to such an extent. Due to the dominance, there has been a brain drain among young Nigerians, especially among university graduates who leave the country in search of better opportunities in industrialised nations, including Europe and America. This has resulted in the loss of highly skilled and educated labour as well as a high dependence rate. Nonetheless, most social crimes perpetrated by youth in Nigerian society today may be linked to or clarified by the insufficient management of the human resources. It depletes the resources of the present generation and puts the future in danger by overcrowding the society with defenceless and impoverished youth. Stated differently, it is possible that society will have to cope with major offenders for an extended period of time.

It is devastating to discover that, according to estimates and data from the United Nations Conference on Trade and Development, each African professional between the ages of 25 and 35 contributed \$184,000 a year to the US economy, demonstrating how underfunding human capital has not only made social

crime worse. Nine billion dollars is the yearly economic effect of 50,000 Nigerian Americans employed in the US. In parallel, Africa employs 100,000 foreign technological professionals. These foreign specialists are paid more than their African equivalents (CIA Fact book, 2013). Participants stated that, of an estimated 140 million people, 1% of Nigeria's population had 80% of earnings from crude oil. Because of events concerning oil, Nigeria has a reputation as one of the most corrupt nations in the world.

The oil sector of the country has been severely damaged by rampant corruption and inadequate management, which makes it challenging for the future leaders to apply and make prudent use of the funds derived from its oil resources. As a result of the previous administrations' mismanagement of the funds obtained from the sale of oil and the illusions they promoted, Nigeria has entered the ranks of nations experiencing extreme poverty. Participants also argued that the amnesty initiative of the central government was a policy strategy intended to fraudulently and diplomatically disarm militants and confine them to specific areas, thereby maintaining peace in the oil-rich Niger Delta region. The aim was to facilitate unhindered and ongoing oil exploitation by foreign oil corporations at the expense of the host country.

In accordance with participant 7,

“Our area saw an apparent increase in the quantity of newly available employment, new businesses, donations to the community, and revenue from local businesses between 2009 and 2015. The fear-mongering tactics of those against the oil industry, who might not be well-informed or educated about the realities of drilling activities, hurt communities and the state. It also signifies a turnabout on the path of developing a more self-sufficient energy sector for our nation. The disposal of wastewater is a problem that has to be addressed, and those processes need to be examined and enhanced. However, attacking the oil and gas industry specifically is misplaced and would only harm an industry that is essential to the working class. An estimated 6000 items (shampoo, soap, lotion, cosmetics, ink, trash bags, contact lenses, etc.) are produced daily by the oil and gas industry alone; the cost of each of these products will increase as exploratory operations become fewer in number. Every household will see rises in natural gas prices in addition to price hikes at the petrol pump. Therefore, in my opinion, there are unquestionably more benefits than risks associated with oil and gas development for Nigerians' everyday life.”

According to participant 11,

“The \$12.5 billion oil windfall that was syphoned from public treasuries during General Babangida's military dictatorship is among the most well-known examples of corruption in Nigeria's oil business.

Likewise, the Nigeria Extractive Industries Transparency Initiative (NEITI) disclosed on August 11, 2009, an audit report from 2005 that showed over US\$800 million in unresolved differences between the sums that oil companies admitted to receiving from the sale of oil and the sums they said they had paid into the government coffers. Given that corruption has thrived in the Nigerian oil sector partly because of the secrecy surrounding its operations, one may claim that transparent efforts can offer the essential cure to combat unethical practices in the industry. This means that some information about the industry's previously unreported revenues must be provided by the government."

A senior personnel at the department of petroleum resources (participant 10) stated that,

"I am aware that local companies and individuals have received over 11,000 contracts from the Niger Delta Development Commission. The oil companies and the local administration had chosen to use different strategies to develop the area. He asserted that as of 2021, the government and oil companies have contributed N1.7 trillion Nigerian naira, or \$1,776.89 (USD), to the Niger Delta's social economy and infrastructure. This funding was used for short- and medium-term development projects as part of the region's compact development plan."

On the other hand, participant 18 is of the view that,

"Poverty in the Niger Delta is made worse by the high cost of living there; in Rivers State, the metropolitan areas have the highest cost of living index in Nigeria. Although 76% of Nigerian children attend elementary school, in certain areas of the Delta, this number falls below 30%. Women's education levels are particularly low, being below the national average."

6.4.3.3. Nigerian Government Diversifying Its Economy to Reduce the Over-Reliance on Petrol and Oil

Darkwah et al. (2018) have stated that during the crude oil processing industry's extraction, refining, transportation, and gas transportation stages, greenhouse gases, especially carbon dioxide, are discharged into the environment. Fossil fuel combustion, including the burning of coal, oil, and gas, emits greenhouse gases, such as carbon dioxide, that lead to significant environmental concerns and global warming (Jiang et al. 2020). 88% of respondents strongly opposed the exploratory activities, and just 12% supported the regional initiatives. Economic growth, which is attained by means of the creation of jobs, a decrease in local CO₂ emissions, assistance for the local business community, and energy security, is the cornerstone of support for oil and gas development. The benefits of developing soil and gas resources, as per the participants, would furthermore provide tax revenue and royalties for the local government,

which is imperative for the advancement of infrastructure. The few specialists who supported oil and gas development acknowledged the risks and uncertainties involved, but they claimed that following strict guidelines and best practices would ensure environmental preservation.

The individuals (88%) who opposed the growth of oil and gas, however, underlined the advantages that might be gained for the local business climate, the possibility of creating jobs, and their green credentials as a way to cover up their ecologically damaging actions for 10 years. Few employees tend to talk good about their company, regardless of the questions. When asked about the negative impact of a petroleum business on the environment, just 12% of the employees thought the company was completely green. If their staff feels that their company is not ecologically friendly, how would society see it. These concerning statistics should be of great concern to environmental decision-makers.

Most participants (88%) agree that by reducing the economy's reliance on oil and bolstering its resilience to shocks linked to oil prices, greater economic diversification would expand the source of government revenue. Additionally, it would promote growth, open up jobs, and increase resistance to changes in the price of oil. Nigeria has long been seen as the quintessential illustration of the "curse" of oil wealth. Despite this, Nigeria's economy expanded quickly for over a decade in the twenty-first century, mostly as a result of adjustments to policy pertaining to the non-oil sector. The respondents argue that Nigeria's primary development concern, rather than the "oil curse", is achieving economic diversification beyond oil, subsistence agriculture, informal enterprises, and throughout the country's subnational organisations. A significant majority of participants, over 88%, support the idea of diversifying Nigeria's economy and highlight the pressing need to shift the emphasis away from the country's reliance on its single, crude oil-based economy. There is evidence that Nigeria's economy is resilient and healthy during periods of high investment, human resource management, and agricultural focus, suggesting a beneficial correlation between diversification of other industries and economic growth. Over 70% of Nigerian workers found work in agriculture during those golden periods (Uzonwanne, 2015).

The Niger Delta's oil drilling activities have resulted in a rising cost of life for the local population. The findings indicated that the degree of environmental damage in the area may be related to the growing costs, which resulted in the loss of the residents' primary source of income.

Regarding the oil leak in the Niger Delta Region, a respondent (Participant 3) during the interview, said that,

“Prices of fish had increased significantly in Bodo; prior to the spill, you could buy a fish for 50 naira (US\$0.35). These days, a fish may cost anywhere from 300 to 500 naira (US\$1.95 to US\$3.25), which is out of reach for many families who find it difficult to afford meals that are high in nutrients.”

According to participant 17,

“The Niger Delta is blessed with an abundance of natural and human resources, including most of Nigeria's oil and gas deposits, lush agricultural land, enormous forests, and excellent fisheries. The region's future is threatened by the worsening economic conditions that are not being addressed by present policies and actions, and the region's immense potential for sustainable growth and economic advancement remains untapped.”

The 7th participant claimed that,

“There is not an effective and widely accessible substitute for oil. Even while the quantity of oil is restricted, it is still abundant, and as extraction technology advances, the cost of producing and consuming it decreases. There has not been an oil leak in a very long time, despite the fact that the whole Niger Delta is profiting. Our disruptions are minimal in terms of blowing our pipes and occasionally needing to shut down, as are disturbances in the community. This illustrates our simultaneous quick and steady growth.”

Participant 16 restated, adding,

“There is no doubting that petroleum has greatly increased Nigeria's earnings since crude oil was discovered in 1956, especially after 1970 when its price started to rise. However, by reducing dependency on oil and promoting growth, job creation, and increased resilience to oil price swings, economic diversification would increase the base of government revenue. The mono-economy must give way to the profitable expansion of other economic sectors.”

6.4.3.4. Oil and Gas Production and Exploration Activities Bearing on Social and Environmental Issues

Activities linked to petroleum exploration, development, and production have a detrimental local and major influence on the Niger Delta's terrestrial ecosystems, atmosphere, surface and groundwater, soils, and sediments. The release of petroleum hydrocarbons and waste streams from petroleum has caused environmental degradation, negative health effects on people, socioeconomic problems, and the decline of host communities in the nine oil-producing states of the Niger Delta.

The experts underlined how the development of oil and gas has adversely affected the local ecology, leading to disturbing changes in the population. The experts argued that marine life had been severely affected by water contamination resulting from oil and gas operations. The participants also revealed that restricted agricultural expansion and increased land fragmentation had resulted from the development of oil and gas. The natural environment and the fragile Bodo ecosystem can be harmed by chemical spills and penetration into surface, subsurface, and terrestrial water bodies. The specialists offered proof that breathing in chemical particles at the time of mixing or during delivery might cause respiratory problems. The atmosphere is polluted by fugitive methane and volatile organic compounds (VOCs).

Upon being asked to rate the environmental friendliness of the exploratory operations in the region, over 80% of the participants stated that their company had a major detrimental impact on the environment because of pollution and waste. It became quite clear to the participants that the company's actions have a significant detrimental impact on society and the environment, and that a robust framework is needed to ensure that these consequences are reduced. More importantly, the participants believe that the first step in minimising negative effects is implementing a sustainable approach.

Parallel to this, the participants voiced a variety of concerns on the barriers to the efficient use of sustainability systems. For example, they believe that senior management isn't truly dedicated and that there isn't a continuous improvement culture at work. As a result, according to 88% of participants, one of the greatest strategies to lessen negative consequences is to establish a continuous improvement culture. Having a system in place to promote the reporting of accidents, mistakes, and unethical conduct is essential to fostering a culture of continuous improvement. This makes it possible to analyse these instances and identify any underlying problems that could be preventing development.

The respondents also endorse the need to increase public and petroleum industry knowledge of the importance of sustainability. The participants underlined that policymakers should place a high premium on raising public awareness of sustainability. A variety of activities, including as conferences, seminars, instructional and training initiatives, internal advertising campaigns, and training, may be put into place to achieve this.

Participant 18 acquired that,

“When oil and gas extraction and exploration operations began and expanded, the once-vibrant economy of the Niger Delta people collapsed completely and instantly, with dire consequences for the environment.”

The answer provided by Participant 14 included that,

“The main reasons of the problems in the Niger Delta are the economic exploitation of the local population, environmental deterioration, and the loss of their lands. These lands are used for the extraction of oil and gas, which accounts for most Nigeria’s riches. Inadequate stakeholder management and the exclusion of significant stakeholders from decisions that directly impact them have also been linked to periodic conflicts in the Niger Delta.”

As stated by participant 11,

“There is a severe demand for new occupations since youth restlessness has become a widespread problem. Instead of encouraging young people to participate in illegal operations like bunkering or crude oil theft, the government should provide them the skills and knowledge they need to start independent, alternative careers. It’s likely that what they did made the local pollution worse. Unfortunately, as the Niger Delta is one of the most neglected areas of the country, it is not a model region for socioeconomic advancement, industry, youth empowerment, or employment in Nigeria.”

Participant 5 narrated,

“Communities have faced an environmental catastrophe in Bayelsa and elsewhere. The Niger Delta sees an annual oil spill of more than 40 million litres. The degradation of the land, water, and air has had a serious negative influence on the people’s health and way of life. The regulations that now regulate Nigeria’s oil and gas industry need to be carefully revised since they are out of date.”

6.4.4. Sustainability and Stakeholder Involvement in the Niger Delta Region

6.4.4.1. *Environmental Problems, Incompetent Political Leadership, and Weak Administration*

One disadvantage of the crude oil exploration and exploitation in the country is the pervasive corruption of public servants, particularly in Nigeria. The infrastructure of many of the host communities for Nigeria’s crude oil deposits is inadequate. The extraction, development, and transportation of crude oil have had a negative impact on the local population’s economic well-being, and clean rivers and productive soils are vital resources for them (Ehirim et al. 2018). The absence of accountability stems from widespread corruption, which leads to massive money transfers to other locations. The expansion of the oil processing industry’s infrastructure is hindered since most of the funding are being directed elsewhere.

Around 88% of participants identified corruption and inadequate governance as the primary reasons why the Niger Delta area is considered a "sustainability paradox." One disadvantage of the country’s crude oil

exploration and exploitation is the pervasive corruption of public servants, particularly in Nigeria. The Niger Delta's communities lacked adequate infrastructure. The local populace, which depends on rich soils and clean rivers as vital resources, has suffered economically as a result of crude oil extraction, exploration, and transportation. Participants argued that entire towns are deprived of a clean water source due to oil spills from crude oil drilling. The participants believed that without a robust legislative framework, implementing sustainability will be extremely difficult. The answers revealed that strict regulations and policies received the most support for ensuring that all petroleum operations are under observation. Furthermore, management commitment was seen as essential to ensuring the successful and efficient implementation of sustainability measures.

Participant 4 claimed that,

“The site is quite isolated, with most of the region only reachable by river or boat. It is difficult to go there as a result, and the lack of infrastructure development by the government there gives the impression that the people living there are being excluded from Nigeria's mainstream. Being left out makes people angry, and people show their anger in a variety of ways.”

As mentioned by Participant 8,

“There are many difficulties that are not limited to environmental issues. In addition to the problems, I previously discussed, there are problems with poverty, illiteracy, subpar standard education, and subpar fundamental transportation infrastructure. Women have lower levels of schooling than the national average, which is particularly concerning. Only thirty percent of Nigerian children attend primary school in some parts of the Niger Delta, whereas seventy-six percent attend in other parts. Poverty is made worse in the Niger Delta by the high cost of living there. These are the issues that we face every day.”

According to Participant 13,

“The legacy of government missteps in the extractive industry has undermined people's trust and willingness to support governmental policy.”

Participant 11 asserted that,

“Corporate sustainability requires an organisation to identify issues that might negatively impact the local community and take appropriate action to address them without endangering the environment. That is not the case, though, in most of those communities. As a result, the activities of these oil companies have

negatively impacted the social structures of the community, to the point that poverty has increased in some areas.”

Participant 9 considered locals who benefit from sustainability initiatives but continue to cause trouble for their community by stating,

“Local elders and leaders also forged strong corporatist ties with MNCs, receiving contracts and large sums of money under the guise of Corporate Social Responsibility. The corporatist connections between these leaders and MNCs are not disregarded, as evidenced by the terms "selfish, opportunistic, sycophantic, corrupt, and compromised" used by communities and militants to describe local elders and leaders. They are no longer motivated to do anything because of the easy money. Those from oil-producing towns fold their hands and wait. At the end of the day, some of the money will be paid out and dispersed. Many of them decide not to work, preferring to wait for free money, and their lives continue.”

Participant 1 concurred that the government's leadership has shifted responsibility to the oil industry's leadership by neglecting the social and environmental problems in the area.

“The primary problem we have is the inadequate governance of the Niger Delta area. In the United States, for example, the community would just expect us to pay our taxes; they would not expect you and me to create an oil company or to undertake any other development projects, such as building roads or hospitals. Practicing corporate social responsibility entails acting in a fair and ethical manner. But in this instance, if we had had functioning local, state, and federal governments carrying out their obligations in the highest order, the responsibilities of oil companies would have been different, such as helping social concerns that may benefit society.”

6.4.4.2. Oil-Producing Companies Projects Contributing to Job Creation

The region around the Niger Delta is like an uncut diamond. It has great potential for wealth and prosperity because of its large gas and oil resources and youthful population. Its carelessness has caused it to suffer. Similar to a person with a wealth of natural resources but a lousy environment in which to cultivate them, the Niger Delta offers immense potential for success. There still needs to be more support and opportunities for advancement. Over 70% of people are unemployed, and 80% of people live in poverty. 70% of Niger Delta residents, according to Idemudia (2014), reside in rural areas without regular or restricted access to utilities and fundamental social infrastructure, including as power, water transported by pipes, and asphalt. Though most farming is done for subsistence and agricultural production has a low value, the Niger Delta has some of Africa's best farmland. Activities related to agriculture include fishing

and the production of yams and cassava. Based on information gleaned from interviews, the participants think that food security entails more than just accessibility and availability. Oil pollution has severe consequences on farmlands, crops, flora, and water, making it impossible for people to engage in productive farming and fishing. Old equipment and traditional methods are mostly used for farming and fishing since modern farming methods are restricted in their accessibility. These participants shed light on the negative consequences that oil companies' operations have on family meals, livelihoods, and the sustainability of the environment.

In regions where there had been oil spills, farmers were forced to reduce the size of their farms, as confirmed by more than 80% of the participants. As a result, less crops are grown, which reduces yield and productivity. In addition to oil spills, other sources of pollution in agricultural regions include drilling waste left behind by some oil companies and the presence of oil pipelines in heavily populated rural areas, which provide difficulties for farmers. Unemployment is a social trend that incites young people who feel mistreated to commit crimes. This long-standing grievance was exacerbated by the governments and oil multinational corporations' disregard for environmental protection, their failure to support local entrepreneurship, and their own negligence. The grievance was caused by the incredibly unequal distribution of resources to and within the Niger Delta region.

Participant 4 claimed that,

“The National Amnesty Programme, the Niger Delta Development Commission, and the Ministry of Niger Delta were established as a consequence of the government's response to the unrest among the young in the Niger Delta region. Moreover, the intended results of the National Amnesty Programme and other government measures have not been achieved.”

Participant 1 agreed that,

“Although previous administrations have handled the region's young discontent and unemployment, the issue is currently gaining more attention than it has in the past.” According to participant 15,

“The area's youth unrest is caused by uncontrollably high and ongoing unemployment. This is due to the adage, “an idle man is the devil's workshop.”

6.4.5. Nigeria and Its Environmental Policies Associated with Oil and Gas

6.4.5.1. *Appropriateness of Initiatives Taken By the Federal Government to Mitigate the Consequences of Oil Exploration*

Infrastructure provision for the communities is within the purview of SPDC community development. In the absence of government intervention, SPDC stepped in to help improve the standard of living for the local populace (SPDC, 2011). The microcredit and health programmes, the twenty-seven clinics, and the early childhood education project, which provides scholarships to almost 17,000 children, are examples of community development efforts. Community development, which includes microcredit, scholarships, and infrastructure upgrades, and community aid, which includes health care and water and sanitation, are the two areas in which Shell's corporate social responsibility (CSR) initiatives are divided. Shell is supporting these initiatives because the Nigerian government is unable to make peace with the oil communities and put an end to the youth unrest in the host towns.

Maximising profits is the top priority for multinational oil companies, and they frequently ignore the consequences of their decisions. However, the research found that due of environmental degradation in their communities, the people's capacity to produce or fish had been damaged by the oil exploration and exploitation in the Niger Delta. Only areas with around 3 million of the 30 million expected population were covered by the 78 million dollars provided under the Global Memorandum of Understanding (GMOU) initiative to mitigate these environmental destructions, according to Shell's 2011 investment report. This does not address the tremendous challenge that the community faced as a result of the multiple oil spills. For example, a 2015 Amnesty International analysis found that the 2008 Bodo oil spill drama had an impact on the livelihoods of around 69,000 people in the Ogoni area.

Remarks regarding the laws and regulations in effect in Nigeria have revealed that certain laws intended to safeguard the environment are ineffectual because the fines and jail time specified as punishments for violations are not suitable; instead, harsher penalties and sanctions are needed. To ensure that they remain appropriate for modern demands and in line with the goals of society, most of Nigeria's environmental laws need be modified. Large number of Participants support the needs for adopting international laws and regulations for monitoring various petroleum activities in the region, majority of the respondents believed that the existing Nigeria environmental statutory laws and regulations are ineffective. About 88% support the need for Nigerian government to adopt international laws and regulations for monitoring various petroleum activities in the region as these will improve social and economic growth conditions of the oil-producing communities and 13% disagree with this opinion. When

responding to question 18, **participant 7** affirmed that the existing environmental laws and regulations are effective and fit for purpose.

Opponents of the current laws argued that while successive Nigerian governments have taken a strong, hard-line stance against AG flaring, using legislation to forbid it and enact penalties, fines, and environmental taxes to discourage the practice, the country's efforts to combat it have not yielded the best results due to a lack of effective legal and regulatory mechanisms to monitor and enforce compliance with the law. The participants confirmed the erratic attitude towards environmental sustainability. More than eighty percent of participants in the study were unable to provide specific examples of how company sustainability programmes have directly addressed local environmental challenges. The impact of sustainability on the environment was specifically brought up by one of the NGOs. According to participant 16,

“To be more specific, you can see that the company is gradually regenerating the mangrove forest.” We are beginning to see some of the rare Flora and Fauna being safeguarded, even if they are not directly in the company's major business.”

The participants also noted the company's public education programmes as a way that corporate sustainability initiatives have addressed local environmental concerns.

Participant 6 commented,

“It is interesting to note that as of right now, we have a few drill sites that have been restored better than they were before we acquired them several years ago.” in reference to the restoration of drill sites. I might not be able to provide a precise figure. We have completed our work with them; the wells have been switched off and the areas have gone back to being lush.”

Participant 10's response to Question 3 had very little information about environmental stewardship.

“We have procedures that help us identify the clinical issues related to the environment,” stated participant 10. These are intended to safeguard people's means of sustenance by making sure that our entrance and departure have no adverse effects on the environment. These days, the other end is helping the general people understand the need of environmental stewardship. Consequently, environmental education advances as you engage with it. We have to police our asset and educate the community at the same time.”

Participant 7 claimed that,

“There was no thought given to business sustainability or the need to protect the environment in order to ensure that our activities do not conflict with the needs of future generations to utilise it. Sustainability initiatives have therefore not yielded any appreciable outcomes. Because it was disregarded, the Niger Delta's ecology suffered significant harm from pollution and oil spills. Nonetheless, efforts are presently underway to address these.”

Participant 6 further responded that,

“Targeting particular locations with strategy is the first step. These sectors include, in our opinion, economic empowerment, education, and health. Furthermore, we have a lot of environmental flexibility due to the nature of the company I work in, so wherever we operate, we want to make sure that whatever we do will enable the environment or land to return to its original condition.”

As noted by Participant 16,

“The 2015 Amnesty International Report on the Niger Delta oil disaster states that hundreds of oil leaks occur there every year, most of which are caused by criminal activity such as oil theft or old, badly maintained pipelines. While illegal refining and oil theft are real problems, an investigation by Amnesty International revealed that Shell had exaggerated the severity of these problems to deflect attention from its improper clean-up and remediation efforts and its disregard for old and leaking pipelines.”

Respondent 2 postulated that,

“Naturally, we have an oil spill unit of our own that deals with situations such as those when they arise in their regions of operation, lending credence to the idea that environmental degradation is taking place. I will confine my talk to oil spills because they are the most common environmental concern in the Niger Delta region, even if there are other issues as well. I can guarantee you that when you visit waterways and see the degree of oil pipeline vandalism and the quantity of spills in the water as a result, it is not something you want to compare to the odd oil leak.”

According to Participant 5,

“In my opinion, corporate sustainability initiatives haven't addressed environmental issues in the area. There are still environmental problems. Nonetheless, it appears to me that they are making an effort to atone for the damage by providing the communities with development and other activities. That hasn't been able to solve the environmental problems in the area. Education is an excellent way to raise awareness, particularly in light of the environmental disaster the region is now experiencing.”

Conversely, as stated in response to Question 16 by the third participant,

“Sustainability initiatives had minimal impact on regional environmental issues. However, participant 3 expressed that she hadn't seen many attempts from nearby oil companies to implement sustainability projects and programmes that might assist to allay environmental worries. Rebuilding homes and roads that were destroyed by flooding is still being done at the moment. But what about, among other things, the area's destruction due to gas flaring, the geography, and the persistent problems with oil thieves and pirates. I am not sure whether anything is being done to mitigate any of these challenges. As of right now, I don't think any sustainable efforts that address the environmental concerns in the region are being carried out; but, if there are, I feel they will be of tremendous aid.”

As per participant 9,

“There has been a notable increase in awareness even if there hasn't been much environmental improvement. The fact that damaging the environment serves no one is becoming more and more apparent. In actuality, it's harming their own opportunities for survival. In the past, people would force their people to bunker down, but in the end, everyone suffers. Increasing knowledge has aided people in realising the detrimental consequences of these behaviours. Regardless of where you go to, you will still become a target since one of your relatives could be involved. Cultivation was out of the question for the residents. As such, they suffer from a deteriorating habitat. They quite rightly say they don't catch any fish these days. It has also increased the poverty levels in certain communities. They are beginning to realise that the environment is not really being helped by their attempts to bunker down.”

6.4.5.2. Community Engagement for Improvement of Environmental Management Procedures

Effective stakeholder engagement in energy development projects aims to reduce social friction, promote innovation, improve information flow, and increase stakeholder ownership of the project. MNOCs must address the requirements of the indigenous people of the Niger Delta within the economic framework of embracing stakeholder values, in accordance with the triple bottom line theory (TBL) (Amadi and Abdullah, 2012). Amadi and Abdullah (2012) define stakeholders as any individual, group, or organisation that is influenced by the business activities of a firm. According to Crow et al. (2015), when there is a direct connection between participants' participation in the final policy results and the deliberative process, their influence on policy is more consistent. By including interested parties or social groups in the deliberative process and utilising norms that make policymaking more understandable, transparent, and

accessible to all interest groups, policymakers can increase the social acceptability of emerging energy systems, such as oil and gas development, and the efficacy of stakeholder participation (Bryson et al. 2013; Baldwin, 2019).

Taking into account that stakeholder input and interaction are still emerging at this early stage of the planning process. The experts understood that in order to foster multi-stakeholder discourse in decision-making, they needed to develop context-specific, collaborative, and adaptive engagement approaches that include experts, members of the host community, and interested/affected parties. Eighty-two percent of the experts said that, when it comes to shale gas development strategy, the public engagement and consultation procedures currently in place do not sufficiently convey the values of stakeholders. Nonetheless, 18% of participants said that the current engagement strategies had much improved the sustainability assessment of oil and gas production.

Participant 18 further emphasised that,

“The community has not been sufficiently involved by public participation in decision-making to address their concerns regarding shale gas exploitation and their values. It is feasible to raise the engagement level.”

Participant 2 agreed that,

“Community engagement is an essential part of the process used to decide on oil and gas development. Politicians often host town hall meetings and consultative forums to address community problems. This has been really fruitful and fascinating.”

Participant 17 stated that,

“Considerable effort has to be done to improve and increase stakeholder participation on shale gas development in Nigeria in order to assure the project's success and win over stakeholders. The level of opposition indicates that the numerous stakeholders' diverse interests and values have not been successfully integrated into attempts to date to foster public confidence.”

6.4.5.3. Oil Firms Failing to Live Up to the Expectations of the Residents

Countries with significantly lower oil production income fared better in terms of developing their human capital and capability. This highlights the concept that wealth does not necessarily transform impoverished nations into rich ones unless it is wisely managed, distributed, and used for a range of local projects. Nigeria has explored and processed a lot of crude oil, but the nation is still undeveloped. After

conducting a thorough literature review, Engert et al. (2016) looked into the integration of corporate sustainability into strategic management. They found that the main barriers to this integration are knowledge management deficiencies, organisational learning, legal compliance, and stakeholder disengagement. Nonetheless, some scholars have discussed the significance of laws, regulations, and legal frameworks in the adoption of sustainability as a way to put pressure on companies to shift to corporate sustainability (Gond et al., 2012). Additionally, Abdulrahman et al. (2015) looked into a recent sustainability improvement project in Egypt that involved recovering refinery flare gas for the Egyptian Oil and Gas industry. They found that the efficiency of the new flare gas recovery project has been hampered by administrative, technological, and operational issues. Obstacles included the operational staff's reliance on inferior equipment and their lack of internal talents and experience.

More community engagement, improved planning, and enhanced transparency were the most recommended future changes to strengthen sustainability projects. Of those surveyed, 18% felt that greater community engagement was essential. There are several members of the Petroleum Department Representative Group who hold this perspective. Participants essentially agreed that people are the driving force for sustainability. Eighty-two percent of participants agreed that the oil company should promote sustainability as a way to increase community engagement.

Participant 11 articulated this point concisely when he stated that planning is necessary for sustainability. People are more likely to put in their all and see a project through to completion when they own it.

Participant 15 postulated that,

“Documentation is actually necessary for community-based projects that include participants from the beginning. Future issue resolution will be a team effort because of everyone's participation in the projects' development and implementation. It should be less troublesome to assign locals to lead community initiatives.”

Supporting the ownership perspective, Participant 17 stated that

“Sustainability entails more than just providing financing for community support projects; it also entails the capacity of the community's stakeholders, or members, to take charge of, oversee, and maximise these activities.”

Participant 11 encouraged the CEOs of local oil companies to embrace sustainability holistically, saying that

“The term sustainability should be interpreted widely, in her definition of sustainability as a broader paradigm. Acting in a way that guarantees future generations won't be denied the same chances that the current generation has is one definition of sustainability. The corporate climate in which my firm may operate and expand is no longer the basis for our definition of sustainability. It does not have to be described this way because, by approaching it from that perspective, you are introducing money, or naira and kobo, into the picture. In the end, you may have to give up the essential element of sustainability, which puts the entire project at risk. To put it another way, I'm suggesting that the oil companies take a broad approach to sustainability. Give them the opportunity to investigate pollution, aquatic and marine life, and the viability of human settlement in the region they serve.”

In support of improved developmental processes, Participant 1 emphasised the need for integration, stating that,

“Sustainability should be incorporated into all processes from the beginning and not be seen as an afterthought. It should be positioned in a prominent spot. Sustainability needs to be considered equally in the planning stages of all projects. This will ensure that the project remains necessary and enable future generations to use it. This is the biggest problem that Nigeria is now experiencing. It is easy for the government to come up with ideas and then see them shelved because the key elements are absent. Our development approach has to include sustainability protocols.”

Participant 17 talked about stakeholder engagement highlighting that,

“I believe that it is not something that can be fully controlled by one stakeholder. For sustainability initiatives to be effective, the general people must be better informed on how to oversee them. If there are no doctors, nurses, or drugs, not even a big hospital can cure malaria. It has been more than a year since staffing several hospitals built under the GMOU. The government has not allocated or appointed doctors, nurses, or other medical personnel to the community hospital. Again, why doesn't the government send doctors and nurses to the hospital? The Niger Delta is rife with accidents as a result of government duties being assigned to oil companies. Other people should become involved, and they should be sincere.”

6.5. Conclusion

The conclusions of the research are highly relevant to the area and demonstrate the differences and overlaps in the public's and experts' perceptions of the risks connected to oil and gas development. The public and professionals are persuaded in different ways by social, cultural, and personal experiences. Experts and the general public were able to generate strong opinions on issues related to the development of oil and gas because of their significant expertise, which may have resulted in different findings or outcomes about the benefits and drawbacks of shale technology. A significant proportion of the general public was in support of the development of oil and gas in Bodo communities, although a significant number of professionals had a negative view.

7. Chapter Seven – Summary of Findings, Conclusions and Recommendations

7.1. Summary of Findings and Conclusions

In my investigation, I explored both qualitative and quantitative aspects to ascertain the perceptions on sustainability held by both the general public and experts. Specifically, I focused on their views regarding the effects of oil and gas activities, the effectiveness of existing sustainability initiatives, and how these initiatives affect local communities. The outcomes of this research shed light on the varied perspectives and cognitive frameworks surrounding sustainability. Notably, the study highlighted that the involvement of community members emerged as the primary driving force behind successful sustainability initiatives. Furthermore, governmental inefficiencies and lack of action were identified as key contributors to the sustainability challenges facing the region. Differing ideologies, values, and motivations emphasize the vital role of transparency in accurately evaluating the effectiveness of sustainability initiatives.

While there was a general consensus about positive effects of programs of sustainability such as (GMOU) on local masses, precise extent and methods remained unspecified. Agricultural productivity suffered, and environmental concerns were adversely affected by sustainability efforts. Approximately 85% of participants expressed that sustainability initiatives could serve as a remedy for the environmental challenges facing the region and ensure the continued operation of oil extraction Company's work permit. However, narrow scope of established GMOUs led to discord of issues. It is imperative to streamline conceptualizing, formulating, and executing sustainability agendas to foster equitable partnerships among the parties with stake (NGOs, oil companies, host communities and government) and to reach a solution that reflects a comprehensive perspective. Harmonizing the efforts of all stakeholders to address

interconnected challenges could cultivate a more robust sustainability mind set. These findings underscore the importance of oil MNC leaders adopting a broader business perspective on sustainability. By adopting such a perspective, leaders can enhance shareholder worth by addressing environmental, social and economic situational concerns.

7.2. Filling the Knowledge and Literature Gaps

In this review of literature, the existing gap within Corporate Social Responsibility (CSR) and stakeholder management literature came into focus. It was revealed that only a minority of scholars have directed their attention towards CSR practices within Nigeria's oil and gas sector and the methods of involving stakeholders in CSR initiatives undertaken by firms in this industry. Andrews (2014) highlighted the scarcity of research in the field of CSR in Nigeria. The gaps identified from the reviewed literature indicated that no scholar has investigated the strategic frameworks utilized by CSR program managers to engage stakeholders and enhance CSR outcomes within Nigeria's oil and gas sector. While some studies on Nigeria's oil and gas industry have delved into its strategic significance, regulatory laws, and corporate financial performance (Amaeshi et al., 2015), there remains a noticeable lack of focused examination on strategies for stakeholder engagement to improve CSR outcomes. Therefore, the primary aim of this study is to contribute insights to bridge this gap and address the deficiency in literature.

7.3. Contributions and Implications of Study

This thesis presents a valid reaction to the rising scholarly call to investigate how organizations can tackle the issues related to sustainability and contribute to sustained progress. Given the complexity of sustainability challenges, individual organizations alone cannot solve them. Therefore, an increasing number of scholars advocate for stakeholder interaction as a fundamental aspect of organizational sustainability and Sustainable Business Models (SBMs). However, existing literature frequently examines stakeholder interaction for sustainability in isolation, often focusing solely on particular interaction activities, levels of interaction, or components of the business model related to interaction with specific stakeholder groups and sustainability aspects. Consequently, there is a lack of comprehensive understanding regarding this topic.

This thesis offers a contemporary exploration of the topic, delving into both organizational sustainability practices and providing comprehensive insights into the significance of stakeholder interaction for sustainability. It goes beyond mere description of what organizations do in terms of engaging stakeholders for sustainability, but also delves into the methods and reasons behind organizations' interactions with

stakeholders at various levels and degrees. For instance, this thesis offers in-depth analysis of the current implementation of stakeholder engagement in organizational sustainability practices, which can influence the sustainable development of an organization. While many organizations and studies recognize the importance of stakeholder interaction for sustainability and creating sustainable value, the actual implementation often focuses solely on stakeholder management - identifying and analysing stakeholders with a stake in the organization and aiming to meet their needs. This suggests that while sustainability practices and stakeholder interaction are linked, there's a gap in achieving sustainable value generation, and stakeholder interaction is often not fully integrated into overarching sustainability practices.

Furthermore, this thesis advances discussions on selecting interaction partners for sustainability, highlighting potential pitfalls if stakeholder interaction for sustainability relies solely on traditional stakeholder mapping rather than considering stakeholders' potential impact on sustainability efforts.

The findings of this research add to the existing body of knowledge on sustainability, stakeholders, and business models. A key theoretical aspect of this thesis is its integrated viewpoint, which synthesizes insights from diverse research domains. Moreover, it enhances comprehension regarding how stakeholder engagement influences the establishment of sustainable practices within organizations. Consequently, as organizations strive to enhance their sustainability undertakings, these insights hold relevance for both academic inquiry and practical application

The study in hand investigates into an exploration and critical examination, alongside offering solutions to aid decision-makers in enhancing organizational stakeholder management practices, with the ultimate goal of progressing towards organizational sustainability. For instance, the findings of this dissertation could serve as a managerial framework to comprehend, categorize, and differentiate organizational stakeholder interaction methodologies from a comprehensive standpoint, along with assessing their alignment with actual engagement practices. This could assist practitioners in reassessing and appraising methods to promote their stakeholder interaction approaches for sustainability, thereby advancing their overarching sustainability strategies and processes. Furthermore, it could prompt managers to reassess current approaches to stakeholder mapping and initiate engagement undertakings with new stakeholders beyond conventional salience models. Viewing stakeholder engagement for sustainability not as an additional task to existing procedures, but rather as an opportunity for organizations to contribute to resolving sustainability challenges.

7.4. Recommendations and Areas for Further Research

7.4.1. Recommendations for Action

In spite of ongoing initiatives for sustainability undertaken by leaders of multinational oil companies (MNCs), the social conditions and environmental situations in Delta region persist in deteriorating. Outcomes of the study in hand will prove advantageous for the leadership of oil companies in devising and executing sustainability initiatives. Moreover, these findings could also be beneficial for the local government in formulating strategies, plans and regulations to tackle mounting concerns related to ecological decline and management of agriculture in Delta. Drawing from results of study, investigation of issue in hand puts forward several actionable recommendations.

Initially, in order to overcome destruction and uncertainties, Oil company leaders ought to embrace a regenerative mind set, transitioning from a mechanistic to an ecological worldview, fostering systems thinking capabilities to address the complexities involved. A regenerative framework reconceptualises the notion of sustainability within the context of progressive alignment with a dynamic system. This approach entails heightened community engagement, where stakeholders take ownership of advancing sustainability goals. Adopting a regenerative approach would enable leaders of lubricant and oil companies to establish objectives regarding stakeholder needs, thereby fostering a mutually beneficial partnership in development efforts.

Secondly, the study advocates for combined logical insights and processes involving stake parties in formulating multifaceted activities for sustenance. This approach dismisses personal contemplation as inadequate for generating sustainable solutions. Building multidimensional mental and conceptual models are crucial in establishing social frameworks conducive to managing interactive complexities. The process of collective sense-making ought to guarantee cognitive alignment among stakeholders, fostering sustainability within the region.

Thirdly, study in hand proposes the establishment of a sustainability dashboard comprising performance metrics for sustainability initiatives and trends to ensure transparency and accountability. Given the multifaceted nature of processes and infrastructure supporting oil production, measuring sustainable outcomes should encompass the dynamic interplay of triple bottom line factors i.e. environmental, social and economic aspects. This dashboard would serve as a tool for evaluating performance across these core factors, enabling stake parties to observe and inspect the outcomes of vital business operations. Its transparent nature would foster cooperation among stakeholders in the oil industry, building ties within

local communities. Designing, developing, and implementing the dashboard is expected to enhance processes for decision-making and evaluating sustainability, potentially improving effectiveness and efficiency of sustainability initiatives by stimulating greater stakeholder engagement.

As a fourth recommendation for fostering a corporate culture of sustainability, leaders of multinational oil companies should empower and equip their project managers with the necessary methods, tools, and techniques to implement projects, programs, and project portfolios using sustainable practices. I suggest adopting green project management methodology to ensure the application of sustainable approaches in project delivery. Green project management integrates a structure of expert approaches for sustainability management. Incorporating green project and operation of systems and platforms currently contributing to pollution could aid in mitigating or even eliminating environmental concerns. Through empowerment and equipping leading managers of project and initiatives for sustainability could effectively address the ecological and social impacts of oil production, ultimately promoting development that is sustainable within the area.

This research aims to provide strategic support for enhancing sustainability practices within gas and oil sector of Nigeria. The propagation of research results may utilize various methods. Firstly, I intend to provide a copy of research to the public dealing department of Oil Company. Additionally, partakers, especially Non-Government Organizations, will receive a brief overview of research in hand for dissemination among other NGOs and community representatives. Publishing the study in the ProQuest/UMI dissertation database will grant academia and other interested parties' access to the research. Furthermore, avenues such as publications centered on sustainability, corporate social responsibility (CSR), and sustainable development will offer additional opportunities for disseminating the research findings. Moreover, I intend to present the study's outcomes at conferences organized by Institute of Management Nigeria and in Conferences related to oil and gas management.

7.4.2. Limitations and Scope for Further Research

This study examined interaction of stakeholder within the domain of organizational sustainability. Several limitations must be acknowledged, which could also serve as groundwork for future inquiry in same area. Few limitations of the study in hand are discussed as follows:

1. All studies and previous literature included in this study offer a snapshot of current sustainability and interaction endeavours solely from the perspective of the organizations under study. A limitation arises from this reliance on the perceptions of the studied organizations alone. Future research could

employ longitudinal studies to provide a more comprehensive understanding, incorporating the perspectives of organizational stakeholders regarding the incorporation of stakeholder interaction into organizational sustainability practices and business models.

2. Further studies are warranted to evaluate the impact of implementing stakeholder engagement on sustainability initiatives and value creation. This could potentially spur the development of theoretical frameworks to bolster the role of stakeholder engagement in shaping organizational sustainability practices and sustainable business models.
3. Future research endeavours might investigate how organizations transition across different stages of implementing stakeholder engagement and how this process may be influenced by potential path dependency, particularly in terms of focusing on stakeholders who share similar values.
4. To comprehensively delineate the potential impact on human health and habitat fragmentation, there remains a need to explore several emerging subjects.
5. While the present study provided a broader examination of perceptions regarding regulatory and resource governance, it raised pertinent questions regarding the role of local/social representation in bolstering public trust and decision-making processes.
6. Subsequent investigations could delve into the viability of employing various investigation of cases to ascertain if governmental inactivity and corruption hinder the comprehension of sustainable initiatives in oil and gas sector.
7. Furthermore, future research should concentrate on gaining a deeper insight into the distinctions between the cognitive expressions of sustainability programs in private and public sectors' business practices. These inquiries could improve understanding of sustainability and stakeholder management in the oil industry. Furthermore, the research findings could spur innovation processes essential for addressing exploitation in sustainable initiatives management within business operations.

8. References

- Aaker A., Kumar V.D., George S. (2000). *Marketing Research*. New York: John Wiley & Sons Inc; 2000.
- Aakhus, M. and Bzdak, M. (2015). Stakeholder engagement as communication design practice. *Journal of Public Affairs*, 15, 188–200.
- Aaron, K. K. (2012). New corporate social responsibility models for oil companies in Nigeria's delta region: What challenges for sustainability? *Progress in Development Studies*, 12, 259-273. doi:10.1177/146499341201200401.
- Abdullahi U., Madu I., Abdullahi F. (2010). Evidence of Petroleum Resources on Nigerian Economic Development (2000–2009). *Business and Economics Journal* 6(2). Available online at: <https://doi.org/10.4172/21516219.1000149>. [Accessed 16th August 2020].
- Abdullahi A.A and Muoghalu M.I. (2006). 'Development Aid Flow and Poverty Reduction in Africa', (2006) 8(3) *Journal of Sustainable Development in Africa*, p.240.

- Abdulrahman, A.O., Huisingsh, D. and Hafkamp, W., 2015. Sustainability improvements in Egypt's oil & gas industry by implementation of flare gas recovery. *Journal of Cleaner Production*, 98, pp.116-122.
- Abimiku A.C. (2006). 'Poverty and the Nigerian Economy: A Gender Perspective' (2006) 7(1) *African Journal of Economy and Society*, pp.136 – 145; Abdulraheem N.M, 'Rights of Women in the Pre-Colonial and Postcolonial Era in Nigeria: Prospects and Challenges' (2010) 3(2) *Kogi State University Journal of Public Law*, pp.
- Ablo, A.D. (2020). Enterprise development? Local content, corporate social responsibility and disjunctive linkages in Ghana's oil and gas industry. *Extr. Ind. Soc.* 7 (2),321–327.
- Abua, M. A. and Ashua, S. W. (2015). The Impact of Gas Flaring on Plant Diversity in Ibeno Local Government Area. *Journal of Agriculture and Ecology Research International*, 4 (1): 10-17.
- Abubakar, B.A. (2013). Gas flaring in the Niger delta of Nigeria: A violation of the right to life and comment on the case of Jonah Gbembre v Shell Petroleum Development Company of Nigeria Limited. *IIUM Law J.* 2013, 22, 75–91.
- Achebe, C.H., Nneke, U.C., Anisiji, O.E. (2012). Analysis of oil pipeline failures in the oil and gas industries in the Niger delta area of Nigeria. In: *Proceedings of The International Multi Conference of Engineers and Computer Scientists.* 2012. pp. 1274-1279.
- Adamu, H. and Umar, B. A. (2013). Occurrence and Chemistry of Co-contamination of Nitrate and Hydrocarbon Pollutants in Gas-Flared Areas of Niger-Delta, Nigeria. *International Journal of Environmental Monitoring and Analysis*, 1 (4): 139-146.
- Adati A. K. (2012). Oil Exploration and Spillage in the Niger Delta of Nigeria. *Civil and Environmental Research.* 2(3), 38–51.
- Adebayo, M. (2018). Oil Spills and Their Impact on the Niger Delta. Bachelor of Engineering Thesis. Helsinki Metropolia University of Applied Sciences.
- Adeboyejo, A. T. and Ogunkan, D. V. (2013). Achieving sustainability in Nigeria. In J. Appleton (Ed.), *Values in Sustainable Development*". Routledge.: *Routledge Studies in Sustainable Development Series.* Taylor and Francis. ISBN-13: 9780415643504.

- Adegbite, E. (2015). 'The Long Run Effect of Interest Rate and Money Supply on Petroleum Profit Tax (Pet) in Nigeria'. *IOSR Journal of Business and Management*, 17(1), pp. 18-26. Agency Central Intelligence, nd.
- Adejoh, O.F. (2014). Petroleum pipelines, spillages, and the environment of the Niger delta region of Nigeria. *World Environ.* 4, 93–100. Available online at: <https://doi.org/10.5923/j.env.20140403.01>. [Accessed 16th May 2021].
- Adejuwon, J.O. (2012). Rainfall seasonality in the Niger delta belt, Nigeria. *J. Geogr. Reg.Plann.* 5, 51– 60.
- Adekola, J., Fischbacher-Smith, M. and Fischbacher-Smith, D. (2017). Health risks from environmental degradation in the Niger Delta. *Nigeria Environment and Planning: Politics and Space*, 35(2), 334–354.
- Adekunle, I. M., Igbuku, A. O. O., Oguns, O. and Shekwolo, P. D. (2013). Emerging trending natural resource utilization for bioremediation of oil-based drilling waste in Nigeria, *Biodegradation-Engineering and Technology Agricultural and Biological Services*. (Online Publication). doi:10.5772/56526.
- Adesipo, A. A., Freese, D., and Nwadinigwe, A. O. (2020). Prospects of in-situ remediation of crude oil contaminated lands in Nigeria. *Scientific African*, 8, 1–15.
- Adger, N. (2006). 'Vulnerability', *Global Environmental Change*, Vol. 16, No. 3, 2006, pp.268-281.
- Ado, A.M., Leshan, J., Savadogo, P., Bo, L., Shah, A.A. (2019). Farmers' awareness and perception of climate change impacts: case study of Aguié district in Niger. *Environ.Dev. Sustain.* 21, 2963– 2977. <https://doi.org/10.1007/s10668-018-0173-4>.
- Afinotan, L.A. and Ojakorotu, V. (2009). The Niger delta crisis: Issues, challenges, and prospects. *Afr. J. Political Sci. Int. Relat.* 2009, 3, 191.
- Agba, J.U., Ogri, E.U. and Adomi, K.O. (2018).The Nigerian Freedom of Information (FOI) Act and the Right to Know: Bridging the Gap between Principle and Practice. Vol.73, 2018. Section 2 (1) of the FOI Act.
- Agbaji, J. E., Nwaichi, E. O. and Abu, G. O. (2020). Optimization of bioremediation-cocktail for application in the Eco recovery of crude oil polluted soil. *AAS Open Research*, 3(7), 1–25.

- Aghalino, S. O. and Eyinla, B. (2009). "Oil Exploitation and Marine Pollution: Evidence from the Niger Delta, Nigeria," *Journal of Human Ecology*, 28 (3). 177-182, 2009.
- Agudelo, M.A.L., Johannsdottir, L., Davidsdottir, B. (2020). Drivers that motivate energy companies to be responsible. A systematic literature review of corporate social responsibility in the energy sector. *J. Clean. Prod.* 247, 119094.
- Agunwamba J.C. (1998). Solid waste management in Nigeria: Problems and issues. *Environmental management*. 1998 Nov 1;22(6):849-56.
- Agwu, M. O. (2013). Community participation and sustainable development in the Niger Delta. *British Journal of Education, Society & Behavioural Science*, 3(1) 33-46. Retrieved from www.sciencedomain.org. [Accessed 15th March 2022].
- Ahenkan, A. and Osei-Kojo, A. (2014). Achieving sustainable development in Africa: Progress, Challenges and Prospects, *International Journal of Development and Sustainability*, 3(1), pp. 162-176
- Ahen, F. and Zettinig, P. (2015), "Critical perspectives on strategic CSR: what is sustainable value co-creation", *Critical Perspectives on International Business*, Vol. 11 No. 1, pp. 92–109.
- Ahmadu, J. and Egbodion, J. (2013). Effect of Oil Spillage on Cassava Production in Niger Delta Region of Nigeria. *American Journal of Experimental Agriculture*, 3(4), 914–926.
- Aislabie, J.M., Balks, M.R., Foght, J.M., Waterhouse, E.J. (2004). Hydrocarbon spills on antarctic soils: effects and management. *Environ. Sci. Technol.* 38, 1265–1274.
- Ajibade, L.T and Awomuti, A.A (2009). Petroleum Exploitation or Human Exploitation? An Overview of Niger Delta Oil Producing Communities in Nigeria, *African Research Review* Vol. 3 (1), Pp. 111-124.
- Ajugwo, A. O. (2013). Negative Effects of Gas Flaring: The Nigerian Experience. *Journal of Environment Pollution and Human Health*, 1 (1): 6-8.
- Akakpo GS, Ewedji CS, Atta-Mensah I, Tsatsu W. (2018). The operational and economic impact of crude oil exploitation on fishing activities in the Jomoro District of Ghana. *Int J Social Sci Human Res.* 2018;6(2):123–129. [Google Scholar].

- Akamabe, U. B. and Kpae, G (2017). A critique on Nigeria national policy on the environment: Reasons for policy review. *IARD Int. J. Geo. Environ. Manag.*, 3(3), 22–36.
- Akande, A., Costa, A.C., Mateu, J., Roberto Henriques, R., 2017. Geospatial analysis of extreme weather events in Nigeria (1985– 2015) using self-organizing maps. *Adv. Meteorol.* 8576150. Available online at: <https://doi.org/10.1155/2017/8576150>. [Accessed 16th May 2021].
- Akhakpe, I. (2012). Oil-environmental degradation and human security in the Niger Delta Region of Nigeria: Challenges and possibilities. *European Scientific Journal*, 8(26), 77-92. Available online at: <http://www.eujournal.org>. [Accessed 16th May 2021].
- Akhigbe, J. (2013). The state and development interventions in the Niger Delta region of Nigeria. *International Journal of Humanities and Social Science*, 3(10), 255-263. Accessed online at: www.ijhssnet.com. [Accessed 16th May 2021].
- Akpan N. (2012). From agriculture to petroleum Oil production: What has changed about Nigeria's rural development. *International Journal of Developing Societies*. 2012;2 (5):97-106.
- Akpokodje J., Salau S. (2015). Oil pollution and agricultural productivity in the Niger Delta of Nigeria. *Journal of Environmental Economics*, 6 (4), 68–75.
- Akpomovie, O. B. (2011). Tragedy of commons: Analysis of oil spillage, gas flaring and sustainable development of the Niger Delta of Nigeria. *Journal of Sustainable Development*, 4, 200-210. doi:10.5539/jsd.v4n2p200.
- Akinbajo I (2012). N155 billion Scandal: How Shell connived with corrupt officials and subverted Nigerian laws. *Premium Times*, 03 June 2012.
- Akinde, S. I. (2011). The crisis of governance and the realization of the millennium development goal (MDGs) in Nigeria. *Journal of Economics and Sustainable Development*, 2(5), 44-50. Available online at: <http://iiste.org/Journals/index.php/JEDS/index>. [Accessed 16th May 2021].
- Akinola, S. R. (2010). Restructuring the public sphere for social order in the Niger Delta through polycentric planning: What lessons for Africa. *African and Asian Studies*, 9, 55-82. doi:10.1163/156921010X491263.

- Akinpelu, Y. (2020). Analysis: As Nigeria Continues to Miss Gas Flaring Deadlines, Huge Revenue Is Lost. 2020. Available online: <https://www.premiumtimesng.com/news/headlines/458507-analysis-as-nigeria-continues-to-miss-gas-flaring-deadlines-huge-revenue-is-lost.html> [Accessed 15th March 2022].
- Akinyemi, A.I and Isiugo-Abanihe, U.C. (2014). "Demographic dynamics and development in Nigeria". *African Population Studies*. 27 (2): 239–248. doi:10.11564/27-2-471.
- Ako, R. (2015). A lega(l)cy Unfulfilled: Reflections on the Wiwa-Led MOSOP and the Localization of Human Rights. *Extract. Ind. Soc.* 2, 625–634.
- Ako, R. T. (2012). Re-defining corporate social responsibility (CSR) in Nigeria's post-amnesty oil industry. *African Journal of Economic and Management Studies*, 3, 9-22. doi:10.1108/20400701211197258.
- Akoji O. (2010). 'Impact of Gender Discrimination and Poverty among women in Nigeria: Challenges and Strategies for their elimination' (2010) 3(2) Kogi State University Bi-Annual Journal of Public Law, pp. 377 – 384.
- Aklin, M., Bayer, P., Harish, S.P. and Urpelainen, J., (2014), "Who blames corruption for the poor enforcement of environmental laws? Survey evidence from Brazil", *Environmental Economics and Policy Studies*, Vol.16, No.3, pp.241-262.
- Alawa, P.K. (1977). *The Concise History of Bodo, Gokana, Ogoni*. Jollymans Printers, Port Harcourt.
- Albert, O.N., Amaratunga, D., Haigh, R.P. (2018). Evaluation of the impacts of oil spill disaster on communities and its influence on restiveness in Niger delta, Nigeria. *Proc. Eng.* 212, 1054–1061.
- Alcorn, J., Rupp, J. and Graham, J.D., 2017. Attitudes toward "fracking": Perceived and actual geographic proximity. *Review of Policy Research*, 34(4), pp.504-536.
- Aliabad, F.A., Hakimzadeh, M.A., Shojaei, S., 2019. The impact of drought and decline in groundwater levels on the spread of sand dunes in the plain in Iran. *Sustain. Water Resour. Manage.* 5, 541–555. <https://doi.org/10.1007/s40899-017-0204-6>.
- Aliyu A., Ammani A. (2011). Nigeria's oil boom period (1973–1983): Was agriculture really Neglected? *International Journal of Statistics and Applications*, 2(5), 120–135.

- Allen, F. (2012). The enemy within: Oil in the Niger Delta. *World Policy Journal*, 29(4),46-53. doi:10.1177/0740277512470928.
- Altomare, T., Tarwater, P.M., Ferguson, A.C., Solo-Gabriele, H.M., Mena, K.D. (2021). Estimating Health Risks to Children Associated with Recreational Play on Oil Spill-Contaminated Beaches. *Int. J. Environ. Res. Public Health* 2021, 18, 126. [CrossRef] [PubMed].
- Alvarez, S., and Sachs, S. (2021). Where do stakeholders come from? *Academy of Management Review*. <https://doi.org/10.5465/amr.2019.0077>.
- Al-Wasify, R. S., and Hamed, S. R. (2014). "Bacterial biodegradation of crude oil using local isolates," *International Journal of Bacteriology*, 1–8. Article ID 863272.
- Al-Zaban, M. I., Mahmoud, M. A., AlHarbi, M. A., and Bahatheq, A. M. (2020). Bioremediation of crude oil by rhizosphere fungal isolates in the presence of silver nanoparticles. *International Journal of Environmental Research and Public Health*, 17, 6564–6579.
- Amadi, A. N., Olasehinde, P. I., Dan-Hassan, M. A, Okoye, N. O. and Ezeagu, G. G., (2014). Hydrochemical Facies Classification and Groundwater Quality Studies in Eastern Niger Delta, Nigeria.
- Amadi, A. N. (2014). Impact of Gas-Flaring on the Quality of Rainwater, Groundwater and Surface Water in Parts of Eastern Niger Delta, Nigeria. *Journal of Geosciences and Geomatics*, 2 (3): 114-119.
- Amadi, B. O., and Abdullah, H. (2012). Poverty alleviation through corporate social responsibility in Niger Delta, Nigeria. *Asian Social Science*, 8(4), 57-67. doi:10.5539/ass.V8n4p57.
- Amaeshi, K., Adegbite, E., Ogbechie, C., Idemudia, U., Kan, K. A. S., Issa, M., and Anakwue, O. I. (2015). Corporate social responsibility in SMEs: A shift from philanthropy to institutional works? *Journal of Business Ethics*, 138(2), 385-400. doi:10.1007/s10551-015-2633-1.
- Amid Pollution and Political Indifference, Nigerians Struggle to Catch Their Breath Available online at: <https://undark.org/2018/10/22/air-pollution-lagos/>. [Accessed 16th May 2021].
- Aminu U. Abdulrahman A. (2012). An empirical Analysis of the Contribution of Agriculture and Petroleum Sector to the Growth and Development of the Nigerian Economy from 1960 to 2010. *International Journal of Social Science and Education*, 2(4), 115–130.

- Amnesty International (2015). Nigeria: Clean It Up: Shell's False Claims about Oil Spill Response in the Niger Delta. Index Number AFR 44/2746/2015. Available online at: <https://www.amnesty.org/en/documents/afr44/2746/2015/en/>. [Accessed 16th May 2021].
- Amnesty International. (2013). *Bad Information: Oil Spill Investigations in the Niger Delta*. London: Amnesty International Publications.
- Amnesty International, 2011. Nigeria: The True 'tragedy': Delays and Failures in Tracking Oil Spills in the Niger Delta. 10 November 2011. Index number: AFR 44/018/2011. Available online at: <https://www.amnesty.org/download/Documents/24000/afr440182011en.pdf>. [Accessed 16th May 2021].
- Amnesty International. (2009). Nigeria: Petroleum, pollution and poverty in the Niger Delta, London: Amnesty International Publications, 1–143. Available: <http://www.amnesty.org> (Assessed 11/03/201)
- Amnesty International (2006) Nigeria: oil, poverty and violence. Available online at: <https://web.archive.org/web/20070819155442/http://www.web.amnesty.org/library/Index/ENGAFR440172006?open&of=ENG-NGA>. [Accessed 20th July 2022].
- Amnesty International. (2005). Retrieved February 15, 2010, from Nigeria: New evidence of human rights violations in oil-rich Niger Delta: Available online at: <http://www.amnesty.org/en/library/asset/AFR44/025/2005/en/61697029-fa15-11dd-999c47605d4edc46/afr440252005en.pdf>. [Accessed 20th July 2022].
- Andrews, N. (2014). Community expectations from Ghana's new oil find: Conceptualizing corporate social responsibility as a grassroots-oriented process. *Africa Today*, 60(1), 55–75. doi:10.2979/africatoday.60.1.55
- Andrews, T., 2012. What is social constructionism? *Grounded theory review*, 11(1). Andriof, J., Rahman, S. S., Waddock, S. and Husted, B. (2002). Introduction: JCC theme issue: Stakeholder responsibility. *The Journal of Corporate Citizenship*, 6, 16–19.
- Andvig, J.C., Odd-Helge, F., Amundsen, I, Sissener, T. and Søreide, T. (2001). *Corruption: A Review of Contemporary Research*. Bergen: Norwegian Institute of International Affairs; 2001. Available online at: <http://hdl.handle.net/11250/2393361>. [Accessed 20th July 2022].

- Anejionu, O.C.D., Ahiaramunnah, P.-A.N. and Nri-ezedi, C.J. (2015). Hydrocarbon pollution in the Niger Delta: geographies of impacts and appraisal of lapses in extant legal framework. *Resour. Pol.* 45, 65–77.
- Angel-Watford, P. L. (2014). Succession planning in Texas's local public employment organizations (Doctoral dissertation). Available from ProQuest Dissertations and Theses database. (UMI No. 36229170).
- Aniefiok, E. I., Thomas, A. H., Clement, O. O., Ekpedeme, R.A., and Iniemem, J. (2018). Petroleum hydrocarbon contamination of surface water and groundwater in the Niger Delta Region of Nigeria. *Journal of Environment Pollution and Human Health*, 6(2), 51–61.
- Aniefiok, Udo, Margaret, and Sunday (2013). Petroleum Exploration and Production: Past and Present Environmental Issues in the Nigeria's Niger Delta. *American Journal of Environmental Protection*, 1(4), pp. 78-90.
- Anney, V. N. (2014). Ensuring the quality of the findings of qualitative research: Looking at trustworthiness criteria. *Journal of Emerging Trends in Educational Research and Policy Studies*, 5(2), 272-281. Available online at: jeteraps.scholarlinkresearch.com/. [Accessed 20th July 2022].
- Anomohanran, O. (2012). Thermal Effect of Gas Flaring at Ebedei Area of Delta State, Nigeria. *The Pacific Journal of Science and Technology*, 13 (2): 555 – 560.
- Antonova, A.S. (2016). The rhetoric of “responsible fishing”: Notions of human rights and sustainability in the European Union's bilateral fishing agreements with developing states. *Marine Policy*, 70, pp.77-84.
- Aras, G. and Crowther, D. (2009). Making sustainable development sustainable. *Management Decisions*, 47(6), 975-988. doi:10.1108/00251740910966686.
- Aregbe, A.G. (2017). Natural gas flaring—alternative solutions. *World J. Eng. Technol.* 5, 139–153. Available online at: <https://doi.org/10.4236/wjet.2017.51012>. [Accessed 20th July 2022].
- Arko-Cobbah A (2004). ‘Promoting sustainable development in Africa: civil society and free access to information’, p.3.

- Aro, K. N., Ubong, I. U., Eze, C. L., Harry, I. M., Umo-Otong, J. C. and Gobo, A. E. (2010). Oil spill incidents and pipeline vandalization in Nigeria: Impact on public health and negation to attainment of Millennium development goal: The Ishiagu example. *Journal of Disaster Prevention Management*, 19, 70-87. doi:10.1108/09653561011022153.
- Ashrafi, M., Acciaro, M., Walker, T.R., Magnan, G. and Adams, M. (2019), "Corporate sustainability in Canadian and US maritime ports", *Journal of Cleaner Production*, Vol. 220, pp. 386–397.
- Asimiea, A. and Omokhua, G. (2013). Environmental impact of illegal refineries on the vegetation of the Niger delta, Nigeria. *J. Agric. Soc. Res.* 13 (2), 121–126.
- Asoya, S. I. (2010). The Impact of Oil Spillage on Agricultural Production : a Case Study of Ibeno Local Government Area , Akwa-Ibom State , Nigeria. University of the Free State master's degree in Disaster Risk Management.
- Atubi A.O., Ogbija T.E. and Ojeh V.N (2015). Effects of Environmental Degradation on Human Health in Selected Oil Communities in Delta State. *Journal of Environment and Earth Science*, 5(9),72–88.
- Atubi, A.O. (2015). Effects of oil spillage on human health in producing communities of delta state, Nigeria. *Eur. J. Bus. Soc. Sci.* 4 (8), 14–30.
- Atubi A.O., Ogbija T.E. and Ojeh V.N. (2015). Effects of Environmental Degradation on Human Health in Selected Oil Communities in Delta State. *Journal of Environment and Earth Science*, 5(9),72–88.
- Babatunde, B.B., Zabbey, N., Vincent-Akpu, I.F., Mekuleyi, G.O. (2017). Bunkering Activities in Nigerian Waters and Their Eco-Economic Consequences. *The Political Ecology of Oil and Gas Activities in the Nigerian Aquatic Ecosystem*. Elsevier Inc. Available online at: <https://doi.org/10.1016/B978-0-12-809399-3.00026-4>. [Accessed 20th July 2022].
- Babbie E. (2010). *The Practice of Social Research*. 12th ed. Belmont, CA: Wadsworth; 2010.
- Bäckstrand, K. (2006), "multi-stakeholder partnerships for sustainable development: Rethinking legitimacy, accountability and effectiveness", *European Environment*, Vol. 16 No. 5, pp. 290– 306.

- Bagaji, Y. A. S., Achegbulu, J. O., Maji, A. and Yakubu, N. (2011). Explaining the violent conflicts in Nigeria's Niger Delta: Is the rentier state theory and the resource curse thesis relevant? *Canadian Social Science*, 7(4), 34-43.
- Baker, S. E. and Edwards, R., (2012). How many qualitative interviews is enough? Expert voices and early career reflections on sampling and cases in qualitative research. (National Centre for Research Methods Reviews). National Centre for Research Methods.
- Baker, T.L. (1994), *Doing Social Research* (2nd Edn.), New York: McGraw-Hill Inc.
- Baldwin, E. (2019). Exploring how institutional arrangements shape stakeholder influence on policy decisions: A comparative analysis in the energy sector. *Public Administration Review*, 79(2), pp.246-255.
- Balogun D. (1999). 'Analysing Poverty, Concepts and Methods', (1999) 23(4) *Central Bank of Nigeria Bullion*, pp.11 – 16.
- Baltazar Herrera, M. E. (2016). Social innovation for bridging societal divides: Process or leader? A qualitative comparative analysis. *Journal of Business Research*, 69, 5241–5247.
- Banks, C. M. and Sokolowski, J. A. (2010). Modeling the Niger Delta insurgency. *The Social Science Journal*, 27, 271-293. doi:10.1016/j.soscij.2009.11.005.
- Bansal, P. and Song, H.C. (2017), "Similar but not the same: Differentiating corporate sustainability from corporate responsibility", *Academy of Management Annals*, Vol. 11 No. 1, pp. 105–149.
- Barnett, M.L. (2019). The business case for corporate social responsibility: a critique and an indirect path forward. *Bus. Soc.* 58 (1), 167–190.
- Barney, B. J. and Harrison, J. S. (2020). Stakeholder Theory at the Crossroads. *Business & Society*, 59 (2), 203-212. Available online at: <https://doi.org/10.1177/0007650318796792>. [Accessed 20th July 2022].
- Barnham, C. (2015). Quantitative and qualitative research. *International Journal of Market Research*, 57, 837-854. doi:10.2501/IJMR-2015-070.
- Barr, S., Gilg, A. and Shaw, G. (2011). Citizens, consumers, and sustainability: (Re) framing environmental practice in an age of climate change. *Global Environmental Change*, 21, 1224-1233. doi:10.1016/j.gloenvcha.2011.07.009.

- Barratt, M. (2004), "Understanding the meaning of collaboration in the supply chain", *Supply Chain Management*, Vol. 9 No. 1, pp. 30–42.
- Barry, A. E., Chaney, B., Piazza-Gardner, A. K., and Chavarria, E. A. (2014). Validity and reliability reporting practices in the field of health education and behavior a review of seven journals. *Health Education & Behavior*, 41, 12-18. doi:10.1177/1090198113483139.
- Bashir, M. T. (2021). Environmental, public health and socioeconomic issues of oil spillage in Niger Delta, Nigeria. *International Journal of Engineering Research & Technology*, 10(2), 62–66.
- Baumgartner, R.J. and Rauter, R. (2017), "Strategic perspectives of corporate sustainability management to develop a sustainable organization", *Journal of Cleaner Production*, Vol. 140, pp. 81–92.
- Bayode, O. J. A., Adewunmi, E. A., and Odunwole, S. (2011). Environmental implications of oil exploration and exploitation in the coastal region of Ondo State, Nigeria: A regional planning appraisal. *Journal of Geography and Regional Planning*, 4, 110-121. Available online at: www.academicjournals.org/JGRP. [Accessed 20th November 2023].
- Beelitz, A. and Merkl-Davies, D. M. (2012). Using discourse to restore organisational legitimacy: "CEO-speak" after an incident in a German nuclear power plant. *Journal of Business Ethics*, 108, 101–120.
- Bello, T. (2017). Oil Pollution and Biodiversity Conservation in Nigeria: An Assessment of Legal Framework (November 16, 2017). Available online at: <https://ssrn.com/abstract/3072168> or <https://doi.org/10.2139/ssrn.3072168> 39pp. [Accessed 20th November 2023].
- Bell, D., Gray, T. and Haggett, C. (2005). The 'social gap' in wind farm siting decisions: explanations and policy responses. *Environmental politics*, 14(4), pp.460-477.
- Bellucci, M. and Manetti, G. (2018), *Stakeholder Engagement and Sustainability Reporting*, Routledge, Milton.
- Bendell, B. L. and Huvaj, M. N. (2020). Does stakeholder engagement through corporate social and environmental behaviors affect innovation? *Journal of Business Research*, 119, 685–696.
- Bezzola, S., Günther, I., Brugger, F., Lefoll, E. (2022). CSR and local conflicts in African mining communities. *World Dev.* 158, 105968.

- Blaikie, N. and Priest, J. (2019). *Designing social research: The logic of anticipation*. John Wiley and Sons.
- Blowfield, M. (2005). Corporate social responsibility: reinventing the meaning of development? *Int. Affairs* 81 (3), 515–524.
- Boaventura, J.M.G., Bosse, D.A., de Mascena, K.M.C. and Sarturi, G. (2020). Value distribution to stakeholders: The influence of stakeholder power and strategic importance in public firms. *Long Range Planning*, 53(2), p.101883.
- Bodo, T. (2019). Deep Issues behind the Crisis in the Niger Delta Region: The Case of Oil Exploration in Ogoni land, Rivers State, Nigeria. *Asian Journal of Geographical Research*, 2(1):1-12.
- Bodo, T. and David, L.K. (2018). The petroleum exploitation and pollution in Ogoni, Rivers State, Nigeria: The community perspective. *European Scientific Journal*. 14(32): 197- 212.
- Bodo, T. and Ukpong, I.E. (2018). Community Participation in the Remediation of Petroleum Impacted Sites in Ogoni, Rivers State, Nigeria. *Multi-disciplinary Journal of Research and Development Perspectives* 7:97-104.
- Bodo, T. (2018). Community understanding of the environmental and socio-economic consequences of Petroleum Exploitation in Ogoni, Rivers State. *International Journal of Advanced Research and Publications*. 2(11):51-55.
- Boele, R.; Fabig, H. and Wheeler, D. (2001) 'Shell Nigeria and the Ogoni: A study in unsustainable development II. CSR and stakeholder management versus a rights-based approach to sustainable development', *Sustainable Development Journal*, 9 (2) pp. 121-135.
- Böhling, K., Murguía, D. I., and Godfrid, J. (2019). Sustainability reporting in the mining sector: Exploring its symbolic nature. *Business & Society*, 58, 191–225.
- Boiral, O., Heras-Saizarbitoria, I., and Brotherton, M. C. (2019). Assessing and improving the quality of sustainability reports: The auditors' perspective. *Journal of Business Ethics*, 155, 703–721.
- Boris, O. H. (2015). The upsurge of oil theft and illegal bunkering in the Niger Delta Region of Nigeria: Is there a way out?. *Mediterranean Journal of Social Sciences*, 6(3 S2), 563. doi:10.5901/mjss.2015.v6n3s2p563.

- Boudet, H.S., Zanocco, C.M., Howe, P.D. and Clarke, C.E. (2018). The effect of geographic proximity to unconventional oil and gas development on public support for hydraulic fracturing. *Risk Analysis*, 38(9), pp.1871-1890.
- Bowen, H.R. (1953), *Social Responsibilities of the Businessman*, Harper and Brothers, New York
- Brakstad, O.G., Lofthus, S., Ribicic, D., Netzer, R. (2017). Biodegradation of petroleum oil in cold marine environments. In: *Psychrophiles: from Biodiversity to Biotechnology*. Springer, Cham, pp. 613–644.
- Brammer, S., Jackson, G. and Matten, D. (2012). Corporate social responsibility and institutional theory: New perspectives on private governance. *Socioeconomic. Review*, 10, 3-28. doi:10.1093/ser/mwr030
- Braun, C. (2017). Not in my backyard: CCS sites and public perception of CCS. *Risk Analysis*, 37(12), pp.2264-2275.
- Breuer, H., Fichter, K., Lüdeke Freund, F. and Tiemann, I. (2018), "Sustainability-oriented business model development: principles, criteria and tools", *International Journal of Entrepreneurial Venturing*, Vol. 10 No. 2, p.256.
- Breuer, H. and Lüdeke-Freund, F. (2017), "Values-based network and business model innovation", *International Journal of Innovation Management*, Vol. 21 No. 03, p. 1750028.
- Bridoux and Vishwanathan (2020). When Do Powerful Stakeholders Give Managers the Latitude to Balance All Stakeholders' Interests?. *Business & Society*, 59 (2), 232-262. Available online at: <https://doi.org/10.1177/0007650318775077>. [Accessed 20th November 2021].
- Bridoux, F. and Stoelhorst, J. W. (2016). Stakeholder relationships and social welfare: A behavioral theory of contributions to joint value creation. *Academy of Management Review*, 41(2), 229-251. doi:10.5465/amr.2013.0475
- Brinkman, J.T. and Hirsh, R.F. (2017). Welcoming wind turbines and the PIMBY ("Please in My Backyard") phenomenon: the culture of the machine in the rural American midwest. *Technology and culture*, 58(2), pp.335-367.
- Brunekreef, B and S.T. Holgate, S.T. (2002). Air pollution and health, *Lancet* 1233 (9341) (2002) 1233– 1242 360PMID: 12401268, doi:10.1016/S0140-6736(02)11274-8

- Bryson, J.M. (2004), "What to do when stakeholders matter. Stakeholder identification and analysis techniques", *Public Management Review*, Vol. 6 No. 1, pp. 21–53.
- Bryson, J., Slotterback, C.S., Crosby, B.C. and Quick, K.S. (2013). *Designing Public Participation Processes* January 2013 *Public Administration Review* 73(1):23-34. DOI: 10.1111/j.1540-6210.2012.02678.x
- Budnukaeku, A.C and Hyginus, O. (2022). Environmental laws and management agencies in Nigeria– what hope for desecrated landscape. *Biodiversity Int J*, 5(1), 1–6.
- Bugden, D. and Stedman, R. (2019). Rural landowners, energy leasing, and patterns of risk and inequality in the shale gas industry. *Rural Sociology*, 84(3), pp.459-488.
- Bugden, D., Kay, D., Glynn, R. and Stedman, R. (2016). The bundle below: Understanding unconventional oil and gas development through analysis of lease agreements. *Energy Policy*, 92, pp.214-219.
- Buhaug, H., Tor A. B., Espen, S. and Ole Magnus, T. (2015). 'Climate Variability, Food Production Shocks, and Violent Conflict in Sub-Saharan Africa', *Environmental Research Letters*, Vol. 10, No. 12, 2015, p.125015.
- Bundy, J., Vogel, R. M. and Zachary, M. A. (2018). Organization–stakeholder fit: A dynamic theory of cooperation, compromise, and conflict between an organization and its stakeholders. *Strategic Management Journal*, 39, 476–501.
- Bush, A. (2013). Spaces of resonance-towards a complex adaptive systems-based theory of action for sustainability. *Proceedings of the International Symposium on Sustainable Systems and Technologies*, 2329-9169. doi:10.6084/m9.figshare.816955. v1 (2013)
- Butler, C. and Adamowski, J. (2015). Empowering marginalized communities in water resources management: Addressing inequitable practices in participatory model building. *Journal of Environmental Management*, 153, 153–162.
- Butler, T. (2011). Compliance with institutional imperatives on environmental sustainability: Building theory on the role of Green IS. *Journal of Strategic Information Systems*, 20, 6-26. doi:10.1016/5j.jsis.2010.09.006
- Byrne, M. (2001). Interviewing as a data collection method. *AORN journal*, 74(2), pp.233-233.

- Byrne, A. 1999. Libraries and democracy. Keynote paper for seminar on Libraries and Democracy, 4 November 1999, Stockholm, Sweden, available online at: www.ifla.org.sg/faife/paper/others/byrne3.htm. [Accessed 24th September 2022].
- Cable News (2021). World Bank: Nigeria Has World's Largest Electricity Access Deficit. Available online at : <https://www.thecable.ng/world-bank-nigeria-has-worlds-largest-electricity-access-deficit> . [Accessed 20th September 2022].
- Cai, Y., Wang, R., Rao, P., Wu, B., Yan, L., Hu, L., Park, S., Ryu, M., and Zhou, X. (2021). Bioremediation of petroleum hydrocarbons using *Acinetobacter* sp. SCYY-5 isolated from contaminated oil sludge: Strategy and effectiveness study. *International Journal of Environmental Research and Public Health*, 18, 819.
- Carroll, A.B. and Shabana, K.M. (2010) The Business Case for Corporate Social Responsibility: A Review of Concepts, Research and Practice. *International Journal of Management Reviews*. Vol. 12, Issue 1, pp. 85-105.
- Carroll, A. B. (2008) A History of Corporate Social Responsibility: Concepts and Practices. *The Oxford handbook of corporate social responsibility*. pp. 19–46. New York. Oxford University Press.
- Carpenter, C. (2020). Middle East Gas Flaring Drops, But Zero Targets Still a Long Way off. S&P Global Commodity Insights. 2020. Available online: <https://www.spglobal.com/commodityinsights/en/market-insights/latest-news/metals/071620-middleeast-gas-flaring-drops-but-zero-targets-still-a-long-way-off>. [Accessed 15th March 2022].
- Carney, M., Gedajilovic, E. and Sur, S. (2011). Corporate governance and stakeholder conflict. *Journal of Management and Governance*, 15, 483-507. doi:10.1007/s10997-010-9135-4.

- Carr, M. L. (2014). Educational leadership: Using smart pens to enhance administrator visibility through organizational skills. *Journal of Organizational Learning and Leadership*, 12(1), 43-46. Available online at: <http://www.leadingtoday.org/>. [Accessed 20th September 2022].
- Casadesus-Masanell, R. and Ricart, J.E. (2010), "From strategy to business models and onto tactics", *Long Range Planning*, Vol. 43 No. 2-3, pp. 195-215.
- Castelló, I., Etter, M. and Årup Nielsen, F. (2016). Strategies of legitimacy through social media: The networked strategy. *Journal of Management Studies*, 53, 402-432.
- Central Intelligence Agency (2018). *The World Factbook: Africa-Nigeria*. Available <https://www.cia.gov/library/publications/the-world-factbook/geos/ni.html>. [Accessed 19th January 2023].
- Central Intelligence Agency (2017). *Natural Gas – Proved Reserves*. Available <https://www.cia.gov/library/publications/theworld-factbook/rankorder/2253rank.html>. [Accessed 19th January 2023].
- Central Intelligence Agency World Factbook (2013) Paperback – Skyhorse Publishing; Illustrated edition (15 Nov. 2012).
- Cernea, M. M. (2008). Compensation and investment in resettlement: Theory, practice, pitfalls and needed policy reform. Cernea, M. M., and Mathur, H. M., eds., *Can Compensation Prevent Impoverishment?* New Delhi: Oxford University Press.
- Cezne, E., Honke, J. (2022). The multiple meanings and uses of South-South relations in extraction: the Brazilian mining company Vale in Mozambique. *World Dev.* 151, 105756.
- Chang, R.D., Zuo, J., Zhao, Z.Y., Zillante, G., Gan, X.L. and Soebarto, V. (2017), "Evolving theories of sustainability and firms: History, future directions and implications for renewable energy research", *Renewable and Sustainable Energy Reviews*, Vol. 72 No. January, pp. 48-56.
- Chen, J. and Liu, L. (2020). Customer participation, and green product innovation in SMEs: The mediating role of opportunity recognition and exploitation. *Journal of Business Research*, 119, 151-162.

- Chenail, R. J. (2011). Ten steps for conceptualizing and conducting qualitative research studies in a pragmatically curious manner. *Qualitative Report*, 16, 1713-1730. Available Online at: <http://www.nova.edu/>. [Accessed 20th November 2023].
- Chesbrough, H. (2007), "Business model innovation: It's not just about technology anymore", *Strategy and Leadership*, Vol. 35 No. 6, pp. 12–17.
- Chikere, C.B., Fenibo, E.O. (2018). Distribution of PAH-ring hydroxylating dioxygenase genes in bacteria isolated from two illegal oil refining sites in the Niger Delta, Nigeria. *Sci. African* 1, e00003
- Chinedu, E., Chukwuemeka, C.K. (2018). Oil spillage and heavy metals toxicity risk in the Niger delta, Nigeria. *J. Health Pollution*. 19, 180905.
- Chinweze C., Abiola-Oloke G., Jideani C. (2012). Oil and gas resources management and environmental challenges in Nigeria. *J. Environ. Sci. Eng.* 2012;1:535-542.
- Chisanga, K. and Petan H. (2008). 'Farmer Perceptions of Climate Change', *Zambian Agricultural Research Institute, Official Ministry of Agriculture Report*, 2008.
- Choy, L.T. (2014). The strengths and weaknesses of research methodology: Comparison and complimentary between qualitative and quantitative approaches. *IOSR Journal of Humanities and Social Science*, 19(4), pp.99-104.
- Chukwuemeka-Emma, E. O., Anazodo, R. and Nzewi, H. (2011). Social conflict in the South-South Nigeria: Implications for foreign investment. *African Journal of Political Science and International Relations*, 5, 335-340. Available online at: <http://academicjournals.org/AJPSIR>. [Accessed 20th November 2021].
- Chukwuemeka, E. E. O. and Aghara, V. N. O. (2010). Niger Delta youth restiveness and socio-economic development of Nigeria. *Educational Research and Reviews*, 5, 400-407. Available online at: <http://academicjournals.org/err/>. [Accessed 20th November 2021].
- Clarkson, M.E. (1995), "A stakeholder framework for analysing and evaluating corporate social performance", *Academy of Management Review*, Vol. 20 No. 1, pp. 92–117.

- Clevenger, M.R., MacGregor, C.J., Clevenger, M.R. and MacGregor, C.J. (2019), "Stakeholder Management and Corporate Social Responsibility (CSR)", *Business and Corporation Engagement with Higher Education*, pp. 67–81.
- Cole, S. L. and Harbour, C. P. (2015). Succession planning activities at a rural public health department. *The Qualitative Report*, 20, 148–164. doi:10.1177/1468794106065006
- Collier P. (2007a). *Proc Natl Acad Sci USA*. 2007;104:16763–16768. [PMC free article] [PubMed] [Google Scholar]
- Collier P. (2007b) *The Bottom Billion: Why the Poorest Countries Are Failing and What Can Be Done About It*. Oxford: Oxford Univ Press; 2007. [Google Scholar]
- Colvin, R.M., Witt, G.B. and Lacey, J. (2020). Power, perspective, and privilege: the challenge of translating stakeholder theory from business management to environmental and natural resource management. *Journal of Environmental Management*, 271, p.110974.
- Collins, S. (2018). Oil Exploration in the Niger Delta: Its' Gains and Loss. *International Journal of Geography and Environmental Management*, 4(3), pp. 24-31.
- Confalonieri, U., Bettina M., Rais A. (2007). Human Health. *Climate Change 2007: Impacts, Adaptation, and Vulnerability. Contribution of Working Group II to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change*, Cambridge, Cambridge University Press, International Panel on Climate Change, 2007.
- Connelly, L. M. (2016). Trustworthiness in qualitative research. *Medsurg Nursing*, 435-436. Retrieved from: <https://pdfs.semanticscholar.org/>. [Accessed 20th November 2023].
- Cools, J., Diallo, M., Boelee, E., Liersch, S., Coertjens, D., Vandenberghe, V. and Kone, B. (2012). Integrating human health into wetland management for the inner Niger Delta, Mali. *Environmental Science and Policy*, 2012, 1-10. doi:10.1016/j.envsci.2012.09.011
- Cotton, M. (2013). Shale gas—community relations: NIMBY or not? Integrating social factors into shale gas community engagements. *Natural Gas and Electricity*, 29(9), pp.8-12.
- Couturier, A., and Thaimai, K. (2013). Eating the fruit of the poisonous tree? Ecological Modernization and Sustainable Consumption in the EU, Working Paper, No. 20/2013. Institute for International Political Economy Berlin.

- Creswell, J. W. (2014). *Research design: Qualitative, quantitative, and mixed methods approaches* (4th ed.). Thousand Oaks, CA: Sage publications.
- Creswell, J.W., Hanson, W.E., Clark Plano, V.L. and Morales, A.(2007). *Qualitative Research Designs: Selection and Implementation*. Volume 35, Issue 2. <https://doi.org/10.1177/00110000062873>.
- Creswell, J. W., Plano Clark, V. L., Gutmann, M. L. and Hanson, W. E. (2003). *Advanced Mixed Methods Research Designs*. In A. Tashakkori & C. Teddlie (Eds.), *Handbook of Mixed Methods in Social and Behavioural Research* (pp. 209–240). Thousand Oaks, CA: Sage.
- Creswell, J.W. (2003) *Research design: qualitative, quantitative, and mixed methods approaches* 2nd edn. Sage.
- Crow, D.A., Elizabeth A. A. and Elizabeth K. (2015). *Evaluating Informational Inputs in Rulemaking Processes: A Cross-Case Analysis*. *Administration and Society* 49(9): 1318–45.
- Cumming, G., Campbell, L., Norwood, C., Ranger, S., Richardson, P. and Sanghera, A., (2021). *Putting stakeholder engagement in its place: how situating public participation in community improves natural resource management outcomes*. *Geo Journal*, pp.1-13.
- Cundy, A. B., Bardos, R. P., Church, A., Puschenreiter, M., Friesl-Hanl, W., Müller, I., Neu, S., Mench, M., Witters, N. and Vangronsveld, J. (2013). *Developing principles of sustainability and stakeholder engagement for “gentle” remediation approaches: The European context*. *Journal of Environmental Management*, 129, 283–291.
- Dahan, N.M., Doh, J.P., Oetzel, J. and Yaziji, M. (2010), “Corporate-NGO collaboration: Co-creating new business models for developing markets”, *Long Range Planning*, Vol. 43 No. 2–3, pp. 326–342.
- Dahlsrud, A. (2008). *How corporate social responsibility is defined: An analysis of 37 definitions*. *Corporate Social Responsibility and Environmental Management*, 15(1), 1–13.
- Dahou, K. N. (2012). *The political economy of oil and 'rebellion' in Nigeria's Niger Delta*. *Review of African Political Economy*, 39, 295-313. doi:10.1080/03056244.2012.688805.

- Dania, W.A.P., Xing, K. and Amer, Y. (2016), "Collaboration and sustainable agri-food supply chain: a literature review", MATEC Web of Conferences, Vol. 58, available at: <https://doi.org/10.1051/matec conf/20165802004>. [Accessed 20th November 2023].
- Darkwah W.K., Bismark O., Maxwell A., Desmond K.A., Danso K.B., Oti-Mensah E.A., Quachie A.T., Adormaa B.B (2018) Greenhouse efect: greenhouse gases and their impact on global warming. J Sci Res Reports 17(6):1–9. Available online at: <https://doi.org/10.9734/JSRR/2017/39630>. [Accessed 20th November 2023].
- Dasgupta, M. (2015). Exploring the relevance of case study research. *Vision: The Journal of Business Perspective*, 19(2), 147-160. doi:10.1177/097226291557661
- DaSilva, C.M. and Trkman, P. (2014), "Business model: What it is and what it is not", *Long Range Planning*, Vol. 47 No. 6, pp. 379–389.
- Dauda, S. (2022). Earning a social licence to operate (SLO): a conflicted praxis in subSaharan Africa's mining landscape? *Extr. Ind. Soc.* 11, 101141.
- David, L.K., Bodo, T. and Gimah, B.G. (2019). Petroleum pollution and decrease neuroplasticity in brain development of the Ogoni children in Rivers State, Nigeria. *Journal of Advances in Medicine and Medical Research* 29: 1-13.
- Davis R. and Franks D.M (2014) *Costs of Company-Community Conflict in the Extractive Sector. Corporate Social Responsibility Initiative Report* (John F. Kennedy School of Government, Harvard University, Cambridge, MA).
- Dawkins, C. E. (2021). An agonistic notion of political CSR: Melding activism and deliberation. *Journal of Business Ethics*, 170, 5–19.
- Department of Economic and Social Affairs (DESA). (2013), United Nations. 2013. *World Economic and Social Survey 2013*.
- Devine-Wright P (2017). A conceptual framework for understanding the social acceptance of energy infrastructure: Insights from energy storage in Energy Policy. *Journal Article/Review*. <<http://dx.doi.org/10.1016/j.enpol.2017.04.020>>. [Accessed 20th November 2023].

- Devine-Wright, P. (2009). Rethinking NIMBYism: The role of place attachment and place identity in explaining place-protective action. *Journal of community & applied social psychology*, 19(6), pp.426-441.
- Desai, V. M. (2018). Collaborative stakeholder engagement: An integration between theories of organizational legitimacy and learning. *Academy of Management Journal*, 61, 220–244.
- Dhir, K. S. (2007). Stakeholder activism through nonviolence. *Corporate Communication*, 21, 75-93. doi:10.1108/13563280710723769.
- Daiglou, V., Van Ruijven, B.J. and Van Vuuren, D.P. (2012). Model projections for household energy use in developing countries. *Energy*, 37(1), pp.601-615.
- Diugwu, I. A., Ijaiya, M. A., Musa, M. and Egila, A. E. (2013). The effect of gas production, utilization, and flaring on the economic growth of Nigeria. *Natural Resources*, 4, 341-348. doi:10.4236/nr.2013.44041.
- Doh, J.P. and Quigley, N.R. (2014), "Responsible leadership and stakeholder management: Influence pathways and organizational outcomes", *Academy of Management Perspectives*, Vol. 28 No. 3, pp. 255–274.
- Dobele, A. R., Westberg, K., Steel, M., and Flowers, K. (2014). An examination of corporate social responsibility implementation and stakeholder engagement: A case study in the Australian mining industry. *Business Strategy and the Environment*, 23(3), 145–159.
- Dominic, A.A. (2016). Impact of illegal oil business and Nigeria economy: the experience of crude oil theft, bunkering and pipeline vandalism in the 21st century. *Int. J. Adv. Acad. Res. Arts Human. Educ.* 2 (8).
- Donwa, P. A., Mgbame, C. O., Utomwen, O. A. (2015). Gas flaring in the oil and gas sector in Nigeria. *International Journal of Commerce and Management Research*, 1 (1): 28-39.
- Donwa, P. (2011). Environment accounting and host community agitation in Nigeria: The petroleum industry experience. *International Review of Business Research Papers*, 7(5), 98-108. Available online at: <http://www.irbrp.com>. [Accessed 20th November 2023].
- Dosumu, (2013). Oil and gas industry overview, s.l.: (Unpublished lecture notes, Emerald, Energy Institute, EEI, University of Port Harcourt). November.

- Doykos, B., Brinkley-Rubinstein, L., Craven, K., McCormack, M., and Geller, J. (2014). Leveraging identity, gaining access: Explorations of self in diverse field-based research settings. *Journal of Community Practice*, 22, 130-149. doi:10.1080/10705422.2014.901265.
- Dublin-Green C.O., L.F. Awosika and R. Folorunsho, (1999). *Climate Variability Research Activities In Nigeria*. Nigerian Institute for Oceanography and Marine Research, Victoria Island, Lagos, Nigeria.
- Duru, E. J. C. and Ogbonnaya, U. M. (2012). The poverty of crisis management strategies in the Niger Delta of Nigeria: A focus on the amnesty programme. *An International Multidisciplinary Journal, Ethiopia*, 6, 162-170. doi:10.4314/afrev.v6i2.14.
- Dyllick, T. and Muff, K. (2016), "Clarifying the Meaning of Sustainable Business: Introducing a Typology from Business-as-Usual to True Business Sustainability", *Organization and Environment*, Vol. 29 No. 2, pp. 156–174.
- Dyllick, T. and Hockerts, K. (2002), "Beyond the Business Case for Corporate", *Business Strategy and the Environment*, Vol. 11, pp. 130–141.
- Ebegbulem, J. C., Ekpe, D. and Adejumo, T. O. (2013). Oil exploration and poverty in the Niger Delta region of Nigeria: A critical Analysis. *International Journal of Business and Social Science*, 4(3), 279-287. Available online at: Retrieved from <http://www.ijbssnet.com>. [Accessed 20th November 2023].
- Ebele, N.E., Emodi, N.V. (2016). Climate change and its impact in Nigerian economy. *J. Sci. Res. Rep.* 10, 1–13. Available online at: <https://doi.org/10.9734/JSRR/2016/25162>. [Accessed 20th November 2023].
- Ede, P. N. and Edokpa, D. O. (2015). Regional Air Quality of the Nigeria's Niger Delta. *Open Journal of Air Pollution*, 4: 7-15.
- Edenhofer, O., Piths-Madruga R., Sokona Y. (2014). *Climate Change 2014: Mitigation of Climate Change*, Contribution of Working Group III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change, 2014, pp.511-597.
- Edino, M. O., Nsofor, G. N. and Bombom, L. S. (2010). Perceptions and attitudes towards gas flaring in the Niger Delta, Nigeria. *Environmentalist*, 30, 67-75. doi:10.1007/s10669-009-9244-2.

- Eghosa, Osaghae. 2015. "Resource Curse or Resource Blessing: The Case of the Niger Delta Oil Republic in Nigeria" *Commonwealth and Comparative Politics* 54(2):109-129.
- Egwurugwu, J. N., Nwafor A, Chinko B.C., Oluronfemi O.J, Iwuji SC., Nwankpa, P. (2013). Effects of prolonged exposure to gas flares on the lipid profile of humans in the Niger Delta region, Nigeria. *American Journal of Research Communication*, 1 (5): 115-145.
- Egwurugwu, J. N. and Nwafor, A. (2013). Prolonged Exposure to Oil and Gas Flares Ups the Risks for Hypertension. *American Journal of Health Research* 1 (3): 65-72.
- Ehirim NC, Praise NC, Osuji EE, Onyemauwa SC (2018) Economics of adoption of environmentally sustainable fishing techniques in coastal mangrove Niger delta Nigeria. *Arch Bus Res* 6(5):65–80.
- Ehirim NC, Praise NC, Osuji EE, Onyemauwa SC (2018) Economics of adoption of environmentally sustainable fishing techniques in coastal mangrove Niger delta Nigeria. *Arch Bus Res* 6(5):65– 80.
- Ejiba, I.V., Onya, S.C, Adams, O.K. (2016). Impact of oil pollution on livelihood: Evidence from the Niger Delta region of Nigeria. *Journal of Scientific Research and Reports*. 2016;12(5):1-12.
- Ekanem J. Nwachukwu I. (2015). Sustainable Agricultural Production in Degraded Oil Producing and Conflict: *Journal of Agriculture and Sustainability*, 8(1) 14–28.
- Ekpenyong. N.S., Udeme U. S. (2015). Crude Oil Spills and its consequences on seafood safety in coastal area of Ibeno: Akwa Ibom State. *Studies in Sociology of Science*, 6 (1), 1–6.
- Ekpoh, I. E., Obot, O. I. and David, G. S. (2018). Impact of oil spill on living aquatic resources of the Niger Delta region: A review. *Journal of Wetlands and Waste Management*, 2(1), 48–57.
- Elenwo, E. I., & Akankali, J. A. (2014). Environmental Policies and Strategies in Nigeria Oil and Gas Industry: Gains, Challenges and Prospects. *Natural Resources*, 5, 884-896. Available online at: <http://dx.doi.org/10.4236/nr..2014.514076>. [Accessed 20th May 2022].
- Elkington, J. (1999), *Cannibals with Forks: The Triple Bottom Line of 21st Century Business*, Capstone, Oxford.
- Ellis G, Barry J and Robinson C 2007 Many ways to say 'no', different ways to say 'yes': applying Q-methodology to understand public acceptance of wind farm proposals *J. Environ. Plann.*

- Manage. 50 517–51. El-Sayed, A ., Aleya, L. and Kamel, M. (2021). Microbiota and epigenetics: promising therapeutic approaches?. *Environ Sci Pollut Res* 28, 49343–49361 (2021). Available online at: <https://doi.org/10.1007/s11356-021-15623-6>. [Accessed 20th May 2022].
- Elum, Z.A., Momodu, A.S., 2017. Climate change mitigation and renewable energy for sustainable development in Nigeria: a discourse approach. *Renew. Sustain. Energy Rev.* 76, 72–80. Available online at: <https://doi.org/10.1016/j.rser.2017.03.040>. . [Accessed 20th May 2022].
- Emachone, S. (2021). The Impact of Oil Industry on the Economic Development of Nigeria: Nigeria oil industry, oil trade, economic development, economic growth, oil revenue. Available online at: http://ir.duan.edu.ua/bitstream/123456789/3277/1/Sandra_Emachone.pdf. [Accessed 20th May 2022].
- Eman A.E. (2015). Gas flaring in industry: An overview. *Petroleum and Coal*. 2015;57(5):532-555.
- Emeseh, E. (2009). Social responsibility in practice in the oil producing Niger Delta: Assessing corporations and government's actions. *Journal of Sustainable Development in Africa*, 11(2), 113-125. Available online at: www.jsdafrica.com/jsda/V11N02_Fall2009. [Accessed 20th May 2022].
- Emoyan, O. O., Akpoborie, I. A. and Akporhonor, E. E. (2008). The Oil and Gas Industry and the Niger Delta: implications for the Environment. *J. Appl. Sci. Environ. Manage.*, 12 (3): 29 – 37.
- Emuedo, C. (2010). Politics of conflict oilification and petro-violence in the Niger Delta. *Global Journal of Social Sciences*, 9, 73-81. Accessed online at: Retrieved from <http://www.globaljournalseries.com>. [Accessed 20th May 2022].
- Eneh, O.C. (2011). A review on petroleum: source, uses, processing, products, and the environment. *J. Appl. Sci.* 11 (12), 2084–2091.
- Enete, I.C., 2014. Impacts of climate change on agricultural production in Enugu State, Nigeria. *J. Earth Sci. Climatic Change* 5, 234. Available online at: <https://doi.org/10.4172/2157-7617.1000234>. [Accessed 20th May 2022].

- Engert, S., Rauter, R. and Baumgartner, R.J. (2016). Exploring the integration of corporate sustainability into strategic management: a literature review. *Journal of cleaner production*, 112, pp.2833-2850.
- Enuoh, R. O. and Inyang, B. J. (2014). Effective management of corporate social responsibility (csr) for desired outcome: The Niger Delta issue in Nigeria. *International Journal of Business Administration*, 5(4), 32.doi:10.5430/ijba.v5n4p32.
- Environmental Rights Action/Friends of the Earth. (2012). Nigeria and Oil watch Africa: October; 2012.Available: <http://www.eraction.org/publicationns/oilpollutionpoliticsandpolicy.pdf>. [Accessed 8th February 2021]
- Epstein, M.J. and Buhovac, A.R. (2010), "Solving the sustainability implementation challenge", *Organizational Dynamics*, Vol. 39 No. 4, pp. 306–315.
- Eregha, P. B. and Irughe, I. R. (2009). Oil Induced Environmental Degradation in the Nigeria's Niger-Delta: The Multiplier Effects. *Journal of Sustainable Development in Africa*, 11(4), 160-174.
- Erhun, M. O. (2015). A sustainable approach to economic development in Nigeria: A legal perspective. *J. Econ. Sustain. Dev.*, 6(14), 1–6. Available online at: www.iiste.org. [Accessed 20th May 2022].
- Eromosele, V.E. (1998). Costing Niger Delta's oil spills: A joint stakeholder's approach. 9th International Conference on the Petroleum Industry and the Nigerian Environment, Abuja, November, 358-368.
- Eshlaghy, T. E., Chitsaz, S., Karimian, L. and Charkhchi, R. (2011). A classification of qualitative research methods. *Research Journal of International Studies*, 20, 106-123. Available online at: <http://www.eurojournals.com/rjis>. [Accessed 20th May 2022].
- Essien, A. (2011). Bridging social gaps in the Niger Delta: A religious perspective. *Interdisciplinary Journal of Contemporary Research in Business*, 3(2), 68-75. Available online at: <http://ijcrb.web.com/>. [Accessed 20th May 2022].
- Everett, J., Neu, D. and Rahaman, A. (2007), "Accounting and the global fight against corruption", *Accounting, Organisations and Society*, Vol. 32 No. 6, pp. 513-542.

- Eweje, G. (2007) 'Multinational oil companies: The scepticism of stakeholders in the host communities', *Managerial Law*, 49 (5/6), pp. 281-235.
- Fadare, D. A., Bamiro, O. A. and Oni, A. O. (2009). Energy analysis for production of powdered and pelletised organic fertilizer in Nigeria. *ARPN Journal of Engineering and Applied Sciences*, 4 (4): 75 – 82.
- Fagbohun, O. (2012). *Mournful remedies, endless conflicts, and inconsistencies in Nigeria's quest for environmental governance: Rethinking the legal possibilities for sustainability*. Lagos: Nigerian Institute of Advanced Legal Studies.
- Famuyiwa, B.A. (1998) Seabed Survey of the Impact of Oil Based Drilling Fluid System on Offshore Environment. 9th International Conference on the Petroleum Industry and the Nigerian Environment, Abuja, 5-7 November 1998, 461-489.
- Fawcett, S.E., Faawcett, A.M., Brockhaus, S. and Knemeyer, A.M. (2016), "The collaboration journey", *Supply Chain Management Review*, No. November, pp. 20–28.
- Fawole, O.G.; Cai, X.M.; MacKenzie, A.R. (2016). Gas flaring and resultant air pollution: A review focusing on black carbon. *Environ. Pollut.* 2016, 216, 182–197. [CrossRef] [PubMed].
- Fentiman, A., Zabbey, N. (2015). The Extractive Industries and Society Environmental degradation and cultural erosion in Ogoni land : a case study of the oil spills in Bodo. *Extrac Indus Soc* 2(4):615–624. Available online at: <https://doi.org/10.1016/j.exis.2015.05.008>. [Accessed 20th May 2023].
- Ferguson, A.; Solo-Gabriele, H.; Mena, K. (2020). Assessment for oil spill chemicals: Current knowledge, data gaps, and uncertainties addressing human physical health risk. *Mar. Pollut. Bull.* 2020, 150, 110746. [CrossRef].
- Field RA, Soltis J, Murphy S. (2014). Air quality concerns of unconventional oil and natural gas production. *Environ Sci Process Impacts* 16:954–969. [PubMed] [Google Scholar].
- Finley, S. (2014). An introduction to critical arts-based research demonstrating methodologies and practices of a radical ethical aesthetic. *Cultural Studies Critical Methodologies*, 14(6), 531-532. doi:10.1177/1532708614548123.

- Firestone, J. and Kirk, H. (2019). A strong relative preference for wind turbines in the United States among those who live near them. *Nature Energy*, 4(4), pp.311-320.
- Food and Agricultural Organisation (2017). *Food and Agriculture Organization: Driving Action across the 2030 Agenda for Sustainable Development*. Rome: FAO; 2017. p. 2020. Available online at: <http://www.fao.org/3/a-i7454e.pdf>. [Accessed: 1st July 2022]
- Food and Agricultural Organisation (2017). *Fishery and Aquaculture Statistics. Global Production by Production source 1950–2015 (FishstatJ)*. In: FAO Fisheries and Aquaculture Department. [online] Rome. Updated 2017. Available online at: www.fao.org/fishery/statistics/software/fishstatj/en. [Accessed 20th May 2023].
- Food and Agricultural Organisation. (2003). *FAO Releases New Global Estimates of Mangroves: Deforestation Continues but at Slower Rates*, [online]. FAO.
- Forje J.W. (2007). 'Enhancing sustainable governance and development in Africa – a reassessment of current challenges and future prospects'
<<http://unpan1.un.org/intradoc/groups/public/documents/AAPAM/UNPAN026536.pdf>>
[Accessed 6th September 2020].
- Fraenkel F.J. and Warren N.E. (2002). *How to Design and Evaluate Research in Education*. 4th ed. New York: McGraw-Hill; 2002.
- Francis, P. (2015). *Laudato Si: On Care for Our Common Home*, Vatican, Vatican Press, 2015 (Francis, 2015).
- Francis, P., LaPin, D., Rossiaso, P. (2011). *Securing Development and Peace in the Niger Delta: a Social and Conflict Analysis for Change*. Woodrow Wilson International Centre for Scholars Africa Programme, Washington DC. Available online at: https://issuu.com/ecspwwc/docs/afr_110929_niger_delta_0113. [Accessed 16th February 2022].
- Fraser, E. D., Dougill, A. J., Mabee, W. E., Reed, M. and McAlpine, P. (2006). Bottom up and top down: Analysis of participatory processes for sustainability indicator identification as a pathway to community empowerment and sustainable environmental management. *Journal of Environmental Management*, 78(2), 114–127.

- Freeman, R. E. (2020). About the Stakeholder Theory. Recuperado em 14 julho, 2020, de. Available online online at: <http://stakeholdertheory.org/about/>. [Accessed 20th May 2023].
- Freeman, R.E., Kujala, J., Sachs, S. and Stutz, C. (2017), "Stakeholder Engagement: Practicing the Ideas of Stakeholder Theory", in Freeman, R.E., Kujala, J. and Sachs, S. (Eds.), *Stakeholder Engagement: Clinical Research Cases*, Springer, Zurich, pp. 1–12.
- Freeman, E. and Moutchnik, A. (2013), "Stakeholder management and CSR: questions and answers", *Uwf Umwelt Wirtschafts Forum*, Vol. 21 No. 1–2, pp.5–9.
- Freeman, R.E. (2010), "Managing for stakeholders: Trade-offs or value creation", *Journal of Business Ethics*, Vol. 96 No. June, pp. 7–9.
- Freeman, R.E., Harrison, J.S. and Wicks, A.C. (2007). *Managing for Stakeholders. Survival, Reputation, and Success*, Yale University Press, New Haven.
- Freeman, R.D. (2001) 'A stakeholder theory of the modern corporation', *Perspective in Business Ethics* Sie, .3, 38-48.
- Freeman, R. E. (1994). The politics of stakeholder theory: Some future directions. *Business Ethics Quarterly*, 4, 409-421. doi:10.2307/3857/380p.uid.
- Freeman, R.E. (1984), *Strategic Management: Stakeholder Approach*, Pitman, Boston.
- Friends of the Earth Netherlands. (2008). *Oil spills in the Niger Delta in Nigeria*.
- Friedman, M. (1970), "The Social Responsibility of Business Is to Increase Its Profits", *The New York Times Magazine*. 1970;09-13:122-126. Available online at: https://doi.org/10.1007/978-3-540-70818-6_14. [Accessed 20th May 2023].
- Freudenreich, B., Lüdeke-Freund, F. and Schaltegger, S. (2019), "A stakeholder theory perspective on business models: Value creation for sustainability", *Journal of Business Ethics*, pp. 1–16.
- Frynas, J. G. (2012). Corporate social responsibility or government regulation? Evidence on oil spill prevention. *Ecology and Society*, 17(4), 1-13. doi:10.5751/ES-05073-170404 .
- Frynas, J.G. (2005) 'The false developmental promise of corporate social responsibility: Evidence from multinational oil companies', *Journal of International Affairs*, 81 (3), pp. 581-599.

- Funder, M, Rocio B., Vladimir C. (2017). 'Strategies of the Poorest in Local Water Conflict and Cooperation Evidence from Vietnam, Bolivia and Zambia', *Water Alternatives*, Vol. 5, No. 1, 2012, pp.20-36.
- Fung, F., Lopez A., New, M. (2011). 'Water Availability in +2 C and +4 C Worlds', *Philosophical Transactions of the Royal Society A: Mathematical, Physical and Engineering Sciences*, Vol. 369, No. 1934, 2011, pp.99-116.
- Fusch, P. I., and Ness, L. R. (2015). Are we there yet?: Data saturation in qualitative research. *The Qualitative Report*, 20, 1408-1416. Available online at: <http://www.nova.edu/ssss/QR/QR20/9/fusch1.pdf>. [Accessed 16th August 2020].
- García-Rodríguez, F.J., García-Rodríguez, J.L., Castilla-Gutiérrez, C., Major, S.A. (2013). Corporate social responsibility of oil companies in developing countries: From altruism to business strategy. *Corp. Social Responsib. Environ. Manage.* 20 (6),371–384.
- Gardner, K., Ahmed, Z., Bashir, F. and Rana, M. (2012). Elusive partnership: Gas extraction and CSR in Bangladesh. *Resources Policy*, 37, 168-174.doi:10.1016/j.resourpol.2012.01.001.
- Gadonne, D., Mia, L., Sands, J., Winata, L. and Hooi, G. (2012), "The influence of sustainability performance management practices on organisational sustainability performance", *Journal of Accounting and Organizational Change*, Vol. 8 No. 2, pp. 210–235.
- Galal, N.M. and Moneim, A.F.A. (2016). Developing sustainable supply chains in developing countries. *Procedia Cirp*, 48, pp.419-424. Available online at: <https://doi.org/10.1016/j.procir.2016.03.156>. [Accessed 16th August 2020].
- Garard, J., and Kowarsch, M. (2017). If at first, you don't succeed: Evaluating stakeholder engagement in global environmental assessments. *Environmental Science & Policy*, 77, 235–243.
- Garde-Sanchez, R., López-Pérez, M.V. and López-Hernández, A.M. (2018), "Current trends in research on social responsibility in state-owned enterprises: A review of the literature from 2000 to 2017", *Sustainability (Switzerland)*, Vol. 10 No. 7, available at: <https://doi.org/10.3390/su10072403>. [Accessed 20th May 2023].

- Garriga, E. (2014), "Beyond Stakeholder Utility Function: Stakeholder Capability in the Value Creation Process", *Journal of Business Ethics*, Vol. 120 No. 4, pp. 489–507.
- Geaves, L. H. and Penning-Rowsell, E. C. (2016). Flood risk management as a public or a private good, and the implications for stakeholder engagement. *Environmental Science & Policy*, 55, 281–291.
- George, R.A., Siti-Nabiha, A.K., Jalaludin, D. and Abdalla, Y.A. (2016). Barriers to and enablers of sustainability integration in the performance management systems of an oil and gas company. *Journal of Cleaner Production*, 136, pp.197-212.
- George, O. J., Kuye, O. L. and Onokola, U. C. (2012). Corporate social irresponsibility (CSI) a catalyst to the Niger Delta crisis: The case of Nigerian oil multinational companies versus the militants of Niger Delta Region of Nigeria. *Journal of Management Research*, 4(2), 1-11. doi:10.5296/jmr.v4i2.1186.
- Gharajedaghi, J. (2011). *Systems thinking: Managing chaos and complexity: A platform for designing business architecture* (3rd ed.). Burlington, MA: Elsevier.
- Gilberthorpe, E. and Banks, G. (2011). Development on whose terms? CSR discourse and social realities in Papua New Guinea's extractive industries sector. *Resources Policy*, 37, 185-193. doi:10.1016/j.resourpol.2011.09.00.
- Gill, D. A., Ritchie, L. A., and Picou, J. S. (2016). Sociocultural and psychosocial impacts of the Exxon Valdez oil spill: Twenty-four years of research in Cordova, Alaska. *The Extractive Industries and Society*, 3(4), 1105-1116.
- Gimah B.G and Bodo T (2019a) Creation of Awareness through Environmental Adult Education as a solution to the Problem of Habitat Loss in Ogoni, Rivers State, Nigeria. *International Journal of Advanced Research and Publications*. 3(1): 22-28.
- Gimah, G.B. and Bodo, T. (2019b). Curbing Human Activities That Degrade the Environment: The Relevance of Environmental Adult Education. *Earth & Environmental Science Research & Reviews*. 2(5): 1-7.
- Gleditsch, N.P and Ragnhild N. (2014). 'Conflicting Messages? The IPCC on Conflict and Human Security', *Political Geography*, Vol. 43, 2014, pp.82-90 (Gleditsch & Nordås, 2014)

- Gleick, P. H. and Palaniappan, M. (2010). 'Peak Water Limits to Freshwater Withdrawal and Use', *Proceedings of the National Academy of Sciences*, Vol. 107, No. 25, 2010, pp.11155-11162 (Gleick & Palaniappan, 2010)
- Goldenberg, J. (2000). Rural energy in developing countries. In *World Energy Assessment: Energy and the Challenge of Sustainability*; United Nations Development Programme (UNDP): New York, NY, USA, 2000.
- Goldstein, H. (2011). *Multilevel statistical models* (Vol. 922). John Wiley & Sons.
- Gond, J. P., Grubnic, S., Herzig, C., and Moon, J. (2012). Configuring management control systems: Theorizing the integration of strategy and sustainability. *Management Accounting Research*, 23, 205-223. doi:10.1016/j.mar.2012.06.003.
- Goodman, J. and Arenas, D. (2015). Engaging ethically: A discourse ethics perspective on social shareholder engagement. *Business Ethics Quarterly*, 25, 163–1.
- Gray, B. and Purdy, J. (2018), *Collaborating for Our Future. Multistakeholder Partnerships for Solving Complex Problems*, Oxford University Press, Oxford.
- Greenwood, M. (2007), "Stakeholder engagement: Beyond the myth of social responsibility", *Journal of Business Ethics*, Vol. 74 No. 4, pp. 315–327.
- Gregory, A.J., Atkins, J.P., Midgley, G. and Hodgson, A.M. (2020). Stakeholder identification and engagement in problem structuring interventions. *European journal of operational research*, 283(1), pp.321-340.
- Greider, T.R. and Krannich, R.S. (1985). Perceptions of problems in rapid growth and stable communities: A comparative analysis. *Community Development*, 16(2), pp.80-96.
- Gravelle T .B. and Lachapelle E. (2015). Politics, proximity and the pipeline: mapping public attitudes toward Keystone XL Energy Policy 83 99–108.
- Greyl, L. (2018). *Multinational Oil Companies on the Niger Delta, Nigeria*. 2018 March 15. Available online at: <https://ejatlas.org/conflict/multinational-oil-companies-on-the-niger-delta-nigeria>. [Accessed 20th December 14, 2023].
- Giuliani, E., Macchi, C., 2014. Multinational corporations' economic and human rights impacts on developing countries: a review and research agenda. *Cambridge J. Econ.* 38 (2), 479–517.

- Gundlach, E.R. (2018). Oil-related mangrove loss east of bonny river, Nigeria. In: Makowski, C., Finkl, C. (Eds.), *Threats to Mangrove Forests*, Coastal Research Library, 25. Springer, Cham.
- Gupta, K., Crilly, D. and Greckhamer, T. (2020). Stakeholder engagement strategies, national institutions, and firm performance: A configurational perspective. *Strategic Management Journal*, 41, 1869–1900.
- Gustafsson-Jertfelt, I. H., Blanchin, A., and Li, S. (2016). Cultural perspective in openended interviews—The importance of being adaptable. *Culture & Psychology*, 22, 483-501. doi:10.1177/1354067X16650809.
- Halanych, K. M., Ainsworth, C. H., Cordes, E. E., Dodge, R. E., Huettel, M., Mendelsohn, I. A., Murawski, S. A., Paris-Limouzy, C. B., Schwing, P. T., and Shaw, R. F. (2021). Effects of petroleum by-products and dispersants on ecosystems. *Oceanography*, 34, 152–163.
- Halofsky, J. E., David L. P and Kailey W. M. (2015). 'Climate Change Adaptation in United States Federal Natural Resource Science and Management Agencies: A Synthesis', US Department of Agriculture Forest Service Report, 2015.
- Hall, J. and Wagner, M. (2012), "Integrating sustainability into firms' processes: Performance effects and the moderating role of business models and innovation", *Business Strategy and the Environment*, Vol. 21 No. 3, pp. 183–196.
- Hammersley, M., 2018. What is ethnography? Can it survive? Should it?. *Ethnography and Education*, 13(1), pp.1-17.
- Harraz, H. (2016) *Petroleum Industry Structure*. [www.document]. [Accessed 28 January 2018]. Available online at: https://www.researchgate.net/publication/301838936_PETROLEUM_INDUSTRY_STRUCTURE. [Accessed 20th December 14, 2023].
- Harrison, J. S. and Wicks, A. C. (2013). Stakeholder theory, value, and firm performance. *Business Ethics Quarterly*, 23, 97–124.
- Hart, S. L. and Milstein, M. B. (2003). Creating sustainable value. *Academy of Management Perspectives*, 17(2), 56-69. doi:10.5465/AME.2003.10025194.

- Hassan, I., Kalin, R.M., Aladejana, J.A. and White, C.I. (2020a). Potential impacts of climate change on extreme weather events in the Niger delta part of Nigeria. *Hydrology* 7, 1–15. Available online at: <https://doi.org/10.3390/hydrology7010019>. [Accessed 20th December 2023].
- Hassan, I., Kalin, R.M., White, C.I., Aladejana, J.A. (2020b). Selection of CMIP5 GCM ensemble for the projection of spatio-temporal changes in precipitation and temperature over the Niger delta, Nigeria. *Water* 12, 2–19. Available online at: <https://doi.org/10.3390/w12020385>. [Accessed 20th December 2023].
- Hassan, I., Kalin, R.M., White, C.J., Aladejana, J.A. (2020c). Evaluation of daily gridded meteorological datasets over the Niger delta region of Nigeria and implication to water resources management. *Atmos. Clim. Sci.* 10, 21–39. Accessed online at: <https://doi.org/10.4236/acs.2020.101002>. [Accessed 20th December 2023].
- Hasan, M.M., Alauddin, M., Rashid Sarker, Md.A., Jakaria, M. and Alamgir, M. (2019). Climate sensitivity of wheat yield in Bangladesh: implications for the United Nations sustainable development goals 2 and 6. *Land Use Pol.* 87, 104023.
- Hasan, I., Kobeissi, N., Liu, L. and Wang, H. (2018). Corporate social responsibility and firm financial performance: The mediating role of productivity. *Journal of Business Ethics*, 149, 671–688.
- Hassan, A., Kouhy, R. (2013). Gas flaring in Nigeria: Analysis of changes in its consequent carbon emission and reporting. *Account. Forum* 37(2), 124–134. Available online at: <http://dx.doi.org/10.1016/j.accfor.2013.04.004> & <http://www.sciencedirect.com/science/article/pii/S0155998213000136>, Social and Environmental Accounting in Emerging and Less Developed Economies. [Accessed 20th December 2023].
- Hasnas, J. (2013). Whither stakeholder theory? A guide for the perplexed revisited. *Journal of Business Ethics*, 112(1), 47-57. Available online at: <https://link.springer.com/journal/10551>. [Accessed 20th December 2023].
- Haseena, M., Malik, M. F., Javed, A., Arshad, S., Asif, N., Zulfiqar, S., and Hanif, J. (2017). Water pollution and human health. *Environmental Risk Assessment and Remediation*, 1(3), 16–19.
- Huang, S.K. and Wang, Y.L. (2013). A comparative study of sustainability management education in China and the USA. *Environmental Education Research*, 19(1), pp.64-80.

- Hazra, A. and Gogtay, N. (2016). Biostatistics series module 3: comparing groups: numerical variables. *Indian journal of dermatology*, 61(3), p.251.
- Henisz, W. J., Dorobantu, S. and Nartey, L. J. (2014). Spinning gold: The financial returns to stakeholder engagement. *Strategic Management Journal*, 35, 1727–1748.
- Henry, L.A., Nysten-Haarala, S., Tulaeva, S., Tysiachniouk, M. (2016). Corporate social responsibility and the oil industry in the Russian Arctic: global norms and neopaternalism. *Europe-Asia Stud.* 68 (8), 1340–1368.
- Hilson, G. (2012). Corporate social responsibility in the extractive industries: Experiences from developing countries. *Resources Policy*, 37, 131-137. doi: 10.1016/j.resourpol.2012.01.002.
- Hoen, B., Wisser, R., Cappers, P., Thayer, M. and Sethi, G. (2011). Wind energy facilities and residential properties: the effect of proximity and view on sales prices. *Journal of Real Estate Research*, 33(3), pp.279-316.
- Holgate, J., Pollert, A., Keles, J., and Kumarappan, L. (2014). Response to protecting research participants: In defense of citizens' advice. *Work, Employment, & Society*, 28, 1026-1031. doi:10.1177/0950017014548305.
- Holliday, C.O., Schmidheiny, S. and Watts, P. (2002). *Walking the Talk : The Business Case for Sustainable Development*, Greenleaf Publishing, San Francisco.
- Hollingsworth, M. (2016). Murky saga of an ex-minister and 'siphoned-off' oil millions. *London Evening Standard*, 7 September 2016.
- Holloway, I. and Todres, L. (2003). The status of method: flexibility, consistency and coherence. *Qualitative research*, 3(3), pp.345-357.
- Hongwei, H. and Lloyd, H. (2020). "The impact of Covid-19 pandemic on corporate social responsibility and marketing philosophy", *Journal of Business Research*, Vol. 116, pp. 176– 182.
- Hörisch, J., Freeman, R.E. and Schaltegger, S. (2014), "Applying Stakeholder Theory in Sustainability Management: Links, Similarities, Dissimilarities, and a Conceptual Framework", *Organization and Environment*, Vol. 27 No.4, pp. 328–346.

- Houghton, C., Murphy, K., Shaw, D., and Casey, D. (2015). Qualitative case study analysis: An example from practice. *Nurse Researcher*, 22(5), 8-12. doi:10.7748/nr.22.5.8.e1307.
- Howell, R.A. 2018. UK public beliefs about fracking and effects of knowledge on beliefs and support: A problem for shale gas policy. *Energy Policy*, 113, pp.721-730. Human Rights Watch. (1999). *The Price of Oil: Corporate Responsibility and Human Rights Violations in Nigeria's Oil-Bearing Communities*. London: HRW.
- Hussein, A. (2015). The use of triangulation in social science research: Can qualitative and quantitative methods be combined? *Journal of Social Work*, 4(1). Available online at: <http://journal.uia.no/index.php/JCSW/article/view/212/147>. [Accessed 20th December 2023].
- Ibaba, I. S. (2010). Environmental Protection Laws and Sustainable Development in the Niger Delta, *Africana*, pp.45-74.
- Ibaba, S. (2001). *Understanding the Niger Delta crisis*. Port Harcourt: Jiral Publication Company.
- Ibrahim H.J and Abubakar M. (2011). 'Story behind Kwara's oil discovery'. See also 'FOI Bill Confusion: Professionals React', *Unilorin Watch (Nigeria, May 2011)* p.1.
- Ideki, O., Weli, V.E. 2019. Analysis of rainfall variability using remote sensing and GIS in north central Nigeria. *Atmos. Clim. Sci.* 9, 191–201. Available online at: <https://doi.org/10.4236/acs.2019.92013>. [Accessed 20th December 2023].
- Idemudia, U. (2014a). Corporate-community engagement strategies in the Niger Delta: Some critical reflection. *The Extractive Industries and Society*, 1(2), 154-162. doi:10.1016/j.exis.2014.07.005.
- Idemudia, U. (2014b). Oil multinational companies as money makers and peace makers: Lessons from Nigeria. In G. Eweje (Ed.), *Corporate social responsibility and sustainability: Emerging trends in developing economies* (pp. 191-213). Bingley, United Kingdom: Emerald Group Publishing Limited. doi:10.1108/S2043-90592014000008011 .
- Idemudia, U. (2009). Oil extraction and poverty reduction in the Niger Delta: a critical examination of partnership initiatives. *J. Bus. Ethics* 90 (1), 91–116. doi:10.1007/S10551-008-99.

- Idemudia, U. and Ite, U. E. (2006). Corporate-community relations in Nigeria's oil industry: challenges and imperatives. *Corporate Social Responsibility and Environmental Management Journal* 13, pp. 194–206.
- Ifelebuegu, A.O., Ukpebor, J.E., Ahukannah, A.U., Nnadi, E.O., Theophilus, S.C. (2017). Environmental effects of crude oil spill on the physicochemical and hydrobiological characteristics of the Nun River, Nigeria Delta. *Environmental Monitoring and Assessment*. 2017;189(173):1-12.
- Iheanachor, N. (2020). *Sustainable Business Practices by Nigerian Organizations: Sustainable Organizations - Models, Applications, and New Perspectives*. DOI: 10.5772/intechopen.93834. Available online at: <https://www.intechopen.com/chapters/73263>. [Accessed 20th December 2023].
- Ijaiya, H. and Joseph, O. T. (2014). Rethinking environmental law enforcement in Nigeria. *Beijing Law Review*, 5, 306–321. Available online at: <https://doi.org/10.4236/blr.2014.54029>. <https://doi.org/>. [Accessed 20th December 2023].
- Ikelegbe, O. and Onwuemele, A. (2012). Planning the Nigerian environment: Laws and problems of implementation. *Contemporary Journal of Social Sciences, Ayimgba.*, 1(2), 151–161.
- Ikelegbe, A. (2005). Engendering Civil Society: Oil, Women Groups and Resource Conflicts in the Niger Delta Region of Nigeria. *Journal of Modern African Studies* 43 (2): 241-270.
- Iledare, O.O. (2013). The impact of unconventional resources in the US on the oil and gas, s.l.: A perspective (A presentation at the 2013 SPE Annual Oloibiri Lecture on 14 March 2013, Lagos, Nigeria).
- Imam, I. (2015). Judicial Activism in Nigeria: Delineating the Extent of Legislative-Judicial Engagement in Law-Making. *International and Comparative Law Review* 15 (1), 107 - 125
- Imam-Tamim, M.K. (2014). Challenges of Sustainable Development in Nigeria. Addressing the Socio-Legal Challenges of Human Rights Protection in Nigeria: Legal Perspectives. Available online at: <https://www.researchgate.net/publication/258338070>. [Accessed 20th December 2023].

- Imobighe, T.A. (2004) 'Conflict in the Niger Delta. A Unique Case or a Model for Future Conflicts in Other Oil Producing Countries?' in Traub-Merz, R. ed., *Oil Policy in the Gulf of Guinea: Security and Conflict, Economic Growth, Social Development*, Bonn: Fredrich Ebert Stifting.
- Ingham, M. and Havard, C. (2017), "CSR as Strategic and Organizational Change at 'Groupe La Poste'", *Journal of Business Ethics*, Vol. 146 No. 3, pp. 563– 589.
- Intelligence Community Assessment (ICA). (2015). 'Global Food Security', Office of the Director of National Intelligence, Washington DC, 2015.
- International Council for Science (ICSU). (2015). *Review of the Sustainable Development Goals: The Science Perspective*. International Council for Science (ICSU), Paris.
- International Energy Agency (2014). *Energy Balance Flows*. Available online at: <http://www.iea.org/Sankey/index.html>. [Accessed 20th December 2023].
- Iniaghe, P. O., Tesi, G. O. and Iniaghe, P. O. (2013). Environmental degradation and sustainable development in Nigeria's Niger Delta region. *Journal of Sustainable Development in Africa*, 15(3), 61-78. Available online at: <http://jsd-africa.com>. [Accessed 20th December 2023].
- Inoni E.O., Omotor D.G. Adun F.N. (2006). The Effect of Oil Spillage on Crop Yield and Farm Income in Delta State, Nigeria, *Journal of Central European Agriculture*, (1), 41–48 [Google Scholar].
- International Energy Agency (IEA) (2014). 'Norwegian Petroleum Production and Resources' 2014 Energy Policy Highlights. Available online at: <http://www.onlinejournal.in>. [Accessed 20th December 2023].
- Intergovernmental Panel on Climate Change IPCC. Annex II. (2014) Glossary. In *Climate Change 2014: Synthesis Report. Contribution of Working Groups I, II and III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change*; Mach, K.J., Planton, S., von Stechow, C., Eds.; IPCC: Geneva, Switzerland, 2014.
- Intergovernmental Panel on Climate Change (IPCC) (2013). *Climate Change 2013. The Physical Science Basis. Contribution of Working Group I to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change*. Cambridge, UK and New York, US.

- Intergovernmental Panel on Climate Change (IPCC)(2007). Impacts, Adaptations, and Vulnerability - Introduction Contribution of Working Group II to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change, Cambridge University Press, UK, 2007.
- International Monetary Fund (IMF). (2016). IMF country report no. 16/101: Nigeria article IV consultation. Washington DC: IMF Publication Services.
- Ishisone, M. (Undated). Gas Flaring in the Niger Delta: the Potential Benefits of its Reduction on the Local Economy and Environment. Available online at: [http://nature.berkeley.edu/classes/es196/projects/2004final/Ish one.pdf](http://nature.berkeley.edu/classes/es196/projects/2004final/Ish%20one.pdf). [Accessed 20th December 2023].
- Ismail, O.S, and Umukoro, G.E. (2012). Global impact of gas flaring. Energy and Power Engineering. 2012; 4:290-302. DOI: 10.4236/epe.2012.44039.
- Isumonah, V.A. (2015). Minority political mobilization in the struggle for resource control in Nigeria. Extract. Ind. Soc. 2, 645–653.
- Ite, A. E., Ibok, U. J., Ite, M. U., & Petters, S. W. (2013). Petroleum exploration and production: Past and present environmental issues in the Nigeria's Niger Delta. American Journal of Environmental Protection, 1, 78–90.
- Ite, U.E. (2004). Multinationals and corporate social responsibility in developing countries: a case study of Nigeria, Corp. Soc. Responsib. Environ. Manag. 11 (1) (2004) 1–11.
- Iyorakpo, J. and Odibikuma, P. W. (2015). Impact of gas flaring on the built Environment: the case of Ogba/Egbema/Ndoni Local Govt Area, Rivers State, Nigeria. European Scientific Journal, 11 (26): 83 – 95.
- Izah, S. C. and Ohimain, E. I. (2015). Bioethanol production from cassava mill effluents supplemented with solid agricultural residues using bakers' yeast [*Saccharomyces cerevisiae*]. Journal of Environmental Treatment Techniques, 3 (1): 47 – 54.
- Jaishankar,M., Tseten, T., Anbalagan, N., Mathew, B.B. and Beeregowda, K.N. (2014).Toxicity, mechanism and health effects of some heavy metals, Interdiscip. Toxicol. 7 (2) (2014) 60–72.
- Jack, J.T., Akujobi, C.T., Uchechukwu, D.A., Azubuike, B.O. (2016). Oil Exploration and Resource Curse in Nigeria Technoscience Review, vol. 7, pp. 1e2.

- Jamali, D. (2008) 'A Stakeholder Approach to Corporate Social Responsibility: A Fresh Perspective into Theory and Practice', *Journal of Business Ethics*, 82 (1), pp. 213- 231.
- Jansen M. (1995). 'Influences upon sustainable product development in the developing world', p.22 Available online at: <https://p2infohouse.org/ref/16/15714.pdf>. [Accessed 20th December 2023].
- Jerolmack, C. and Walker, E.T., 2018. Please in my backyard: Quiet mobilization in support of fracking in an Appalachian community. *American Journal of Sociology*, 124(2), pp.479-516.
- Jiang D., Chen, L., Xia, N., Norgbey, E., Koomson, D.A and Darkwah, W.K. (2020). Elevated atmospheric CO₂ impact on carbon and nitrogen transformations and microbial community in replicated wetland. *Jiang et al. Ecological Processes* (2020) 9:57. Available online at: <https://doi.org/10.1186/s13717-020-00267-0>. [Accessed 20th December 2023].
- Jike, V. T. (2010). Oil companies and host communities: A probable scenario for reciprocal empowerment. *Journal of Human Ecology*, 30, 131-142. Available online at: www.krepublishers.com. [Accessed 20th December 2023].
- Jike, T.V., 2004. Environmental Degradation, Social Disequilibrium and the Dilemma of Sustainable Development in the Niger Delta of Nigeria. *J. Black Stud.*, 34(5): 686-701.
- Johnson, T. and Owens, L. (2003). May. Survey response rate reporting in the professional literature. In 58th Annual Meeting of the American Association for Public Opinion Research, Nashville (Vol. 2003).
- Jones, T. M., Harrison, J. S. and Felps, W. (2018). How applying instrumental stakeholder theory can provide sustainable competitive advantage. *Academy of Management Review*, 43, 371–391.
- Jonker, J. (2000), "Organisations as Responsible Contributors to Society: Linking Quality, Sustainability and Accountability", *Total Quality Management*, Vol. 11 No. 4–6, pp. 741–746.
- Kadafa, A. A. (2012a). Oil exploration and spillage in the Niger Delta of Nigeria. *Civil and Environmental Research*, 2(3), 38-51. Available online at: www.aropub.org/journals/international-journal-of-civil-and-environmentalresearch-ijcer/. [Accessed 19th October 2022].

- Kadafa, A. A. (2012b). Environmental impacts of oil exploration and exploitation in the Niger Delta of Nigeria. *Global Journal of Science Frontier Research Environment & Earth Sciences*, 12(3), 19-28. Available online at: <https://globaljournals.org › Journals>. [Accessed 19th October 2022].
- Kadafa, A.A. (2012c). Oil exploration and spillage in the Niger Delta of Nigeria. *Civ. Environ. Res.* 2, 38–51.
- Kew, D., and Phillips, D.L. (2013). Seeking peace in the Niger Delta: Oil, natural gas, and other vital resources. *New England Journal of Public Policy*, 24(1), 1-18. Available online at: <http://scholarworks.umb.edu/nejpp/vol24/iss1/12>. [Accessed 19th October 2022].
- Khan, N., Hussain, S. T., & Saboor, A. (2013). Physiochemical investigation of the drinking water sources from Mardan, Khyber Pakhtunkhwa Pakistan. *International Journal of Physical Sciences*, 8(33), 1661–1671.
- Kingston, K. G. (2011). The dilemma of minerals dependent economy: The case of foreign direct investment and pollution in Nigeria. *African Journal of Social Sciences*, 1, 1-13. Available online at: <http://mpira.ub.uni-muenchen.de/29046>. [Accessed 19th October 2022].
- Kivits, R.A. (2011), “Three component stakeholder analysis”, *International Journal of Multiple Research Approaches*, Vol. 5 No. 3, pp. 318–333.
- Kolawole, S.(2011). ‘The new minimum wage fiasco’, *ThisDay* (Nigeria, 24 July 2011) <http://www.thisdaylive.com/articles/thenew-minimum-wage-fiasco/95572/> accessed on 10 October 2011
- Könnet, B. R. (2014). Inadequate monitoring and enforcement in the Nigerian oil industry: The case of shell and ogoniland. *Cornell International Law Journal*, 11, 181–205.
- KPMG International Limited (2014) Nigeria’s Oil and Gas Industry Brief. KPMG Advisory Services. Nigeria.pp. 1-22.
- Krisnawati, A., Yudoko, G. and Bangun, Y.R. (2013). “Development path of corporate social responsibility theories”, *International Conference on Innovation Challenges in Multidisciplinary Research & Practice*, Kuala Lumpur.

- Krupnick, A.J. and Gordon, H.G. (2015). What Experts Say About the Environmental Risks of Shale Gas Development. *Agricultural and Resource Economics Review*, 44(2), pp.106-119.
- Kuenzer, C., van Beijma, S., Gessner, U., Dech, S. (2014). Land surface dynamics and environmental challenges of the Niger Delta, Africa: remote sensing-based analyses spanning three decades (1986–2013). *Appl. Geogr.* 53, 354–368.
- Kujala, J. and Sachs, S. (2019). “The Practice of Stakeholder Engagement”, in Harrison, J.S., Barney, J.B., Freeman, R.E. and Phillips, R.A. (Eds.), *The Cambridge Handbook of Stakeholder Theory*, Cambridge University Press, pp. 227–242.
- Kujala, J. and Sachs, S. (2019), “The Practice of Stakeholder Engagement”, in Harrison, J.S., Barney, J.B., Freeman, R.E. and Phillips, R.A. (Eds.), *The Cambridge Handbook of Stakeholder Theory*, Cambridge University Press, pp. 227–242.
- Kujala, J. and Korhonen, A. (2017), “Value-Creating Stakeholder Relationships in the Context of CSR”, in Freeman, R.E., Kujala, J. and Sachs, S. (Eds.), *Stakeholder Engagement: Clinical Research Cases*, Springer, Zurich, pp.63–85.
- Kumar, K., Boesso, G., Batra, R. and Yao, J. (2019). Explicit and implicit corporate social responsibility: Differences in the approach to stakeholder engagement activities of US and Japanese companies. *Business Strategy and the Environment*, 28, 1121–1130.
- Kumar, G., Banerjee, R.N., Meena, P.L. and Ganguly, K.K. (2017), “Joint planning and problem-solving roles in supply chain collaboration”, *IIMB Management Review*, Vol. 29, pp. 45–57.
- Kumar, K. A. (2018). Unit-1 development projects and Displacement in India. IGNOU. LADAN, Mohammed Tawfiq: (August 2013B) Nigeria has no policy on internally displaced persons DAILY TRUST. Available online at: <http://dailytrust.info/index.php/law/3991-nigeria-has-no-policy-on-internally-displaced-persons-ladan> . [Accessed 19th October 2022].
- Kuper A. and Kupa, J. (2008). *The Social Science Encyclopedia* (Routledge, New York) pp.55 – 657.
- Uzundu, J. (2011). ‘Crippled by wagecrisis’, *Nigeria News World Magazine* (Nigeria, 24 October, 2011).<<http://www.nigeriannewsworld.com/content/crippled-wage-crisis>>. [Accessed 20th December 2023].

- Lane, A.B. and Devin, B. (2018), "Operationalizing stakeholder engagement in CSR: A process approach", *Corporate Social Responsibility and Environmental Management*, Vol. 25 No. 3, pp. 267–280.
- Lankoski, L. (2016), "Alternative conceptions of sustainability in a business context", *Journal of Cleaner Production*, Vol. 139, pp. 847–857.
- Lawal G. (2007). *Corruption and Development in Africa: Challenges for Political and Economic Change*, (2007) 2 (1) *Humanity & Social Sciences Journal*, p. 1.
- Lawal G. (2006) 'The Normative Impediments to African Development: Internalist and externalist interpretations'(2006) 2(9) *Journal of Applied Sciences Research*, p. 637.
- Lee, M.D.P. (2008), "A review of the theories of corporate social responsibility: Its evolutionary path and the road ahead", *International Journal of Management Reviews*, Vol. 10 No. 1, pp. 53– 73.
- Leon, R.-D. (2013), "From the Sustainable Organization to Sustainable Knowledge-Based Organisation", *Economic Insights - Trends and Challenges*, Vol. II (LXV) No. 2, pp. 63–73.
- Leonidou, E., Christofi, M., Vrontis, D. and Thrassou, A. (2020). An integrative framework of stakeholder engagement for innovation management and entrepreneurship development. *Journal of Business Research*, 119, 245–258.
- Le Roux, C. and Pretorius, M. (2016), "Conceptualizing the limiting issues inhibiting sustainability embeddedness", *Sustainability (Switzerland)*, Vol. 8 No. 4, pp. 1–22.
- Leung, L. (2015). Validity, reliability, and generalizability in qualitative research. *Journal of Family Medicine and Primary Care*, 4(3), 324-327. doi: 4103/2249=4863.161306.
- LeVan, A. C and Ukata, P. (2018). *The Oxford Handbook of Nigerian Politics*. Oxford University Press. ISBN 978-0-19-880430-7.
- Leyira, C. M., Uwaoma, I. E. and Olagunju, A (2012). Corporate social responsibility and compliance with regulation in Nigeria. *Research Journal of Finance and Accounting*, 3(2), 16-25. Available online at: <http://www.iste.org>. [Accessed 20th December 2023].
- Linden, O., & Palsson, J. (2013). Oil contamination in ogoniland, Niger Delta. *Ambio*, 42, 685–701.

- Lindgreen, A. and Swaen, V. (2010). Corporate social responsibility. *International Journal of Management Reviews*, 12, 1–7.
- Linnenluecke, M.K., Russel, S. V and Griffiths, A. (2009). “Subcultures and sustainability practices: the impact on understanding corporate sustainability”, *Business Strategy and the Environment*, Vol. 18, pp. 432–452.
- Liu, Z., Geng, Y., Lindner, S. and Guan, D. (2012). Uncovering China’s greenhouse gas emission from regional and sectoral perspectives. *Energy*, 45(1),pp.1059-1068.
- Lock, I. and Seele, P. (2017), “Theorizing stakeholders of sustainability in the digital age”, *Sustainability Science*, Vol. 12 No. 2, pp. 235–245.
- Loe, J.S., Kelman, I. (2016). Arctic petroleum’s community impacts: local perceptions from Hammerfest, Norway. *Energy Res. Soc. Sci.* 16, 25–34.
- López-Rodríguez, M. D., Ruiz-Mallén, I., Oteros-Rozas, E., March, H., Keller, R., Lo, V. B., Cebrián-Piqueras, M. A. and Andrade, R. (2020). Delineating participation in conservation governance: Insights from the Sierra de Guadarrama National Park (Spain). *Environmental Science & Policy*, 114, 486–496.
- Lozano, R. (2008b), “Developing collaborative and sustainable organisations”, *Journal of Cleaner Production*, Vol. 16 No. 4, pp. 499–509.
- Lozano, R. (2018a), “Proposing a definition and a framework of organisational sustainability: A review of efforts and a survey of approaches to change”, *Sustainability*, Vol. 10 No. 4, p. 1157.
- Lozano, R. (2018b), “Sustainable business models: Providing a more holistic perspective”, *Business Strategy and the Environment*, Vol. 27 No. 8, pp.1159–1166.
- Lucas, C., Nielsen, R., Roberts, M., Stewart, B., Storer, A., & Tingley, D. (2015). Computer assisted text analysis for comparative politics. *Political Analysis*, 23(2), 254-277. Doi:10.1093/pan/mpu019.
- Lugard, S. B. (2013). Stakeholder approach to corporate social responsibility as a recipe for peace in the Niger Delta. Paper presented at the SPE Nigeria annual conference and exhibition, Lagos, Nigeria. doi:10.2118/167506-MS.

- Luís, S., Lima, M. L., Roseta-Palma, C., Rodrigues, N., Sousa, L. P., Freitas, F., Alves, F. L., Lillebø, A. I., Parrod, C., Jolivet, V., Paramana, T., Alexandrakis, G. and Poulos, S. (2018). Psychosocial drivers for change: Understanding and promoting stakeholder engagement in local adaptation to climate change in three European Mediterranean case studies. *Journal of Environmental Management*, 223, 165–174.
- Lyll, A. (2017). Voluntary resettlement in land grab contexts: examining consent on the Ecuadorian oil frontier. *Urban Geography*, 38(7), 958-973.
- Lynch A. and Mosbah S. (2017), "Improving local measures of sustainability: A study of built-environment indicators in the United States", *Cities*, Vol. 60, Part A, pp. 301-313.
- Maconachie R. and Gavin H. (2013). "Editorial Introduction: The Extractive Industries, Community Development and Livelihood Change in Developing Countries." *Community Development Journal*, vol. 48, no. 3, Oxford University Press, 2013, pp. 347–59, <https://www.jstor.org/stable/26166101>. [Accessed 25th July 2021].
- Mainardes, E.W., Alves, H. and Raposo, M. (2011), "Stakeholder theory: Issues to resolve", *Management Decision*, Vol. 49 No. 2, pp. 226–252.
- Manetti, G. and Toccafondi, S. (2012). The role of stakeholders in sustainability reporting assurance. *Journal of Business Ethics*, 107, 363–377.
- Mang, P. and Reed, B. (2012). Designing from place: A regenerative framework and methodology. *Building Research and Information*, 40, 23-38. doi:10.1080/09613218.2012.621341.
- Mahjoubi, M., Cappello, S., Souissi, Y., Jaouani, A., Cherif, A. (2018). Microbial bioremediation of petroleum hydrocarbon–contaminated marine environments. In: *Recent Insights in Petroleum Science and Engineering*. InTech.
- Matemilola, S., Adedeji, O.H., Elegbede, I., Kies, F. (2019). Mainstreaming climate change into the EIA process in Nigeria: perspectives from projects in the Niger delta region. *Climate* 7, 29. <https://doi.org/10.3390/cli7020029>.
- Matemilola, S., Adedeji, O.H., Enoguanbhor, E.C. (2018). Land use/land cover change in petroleum-producing regions of Nigeria. *Polit. Ecol. Oil Gas Activit. Nigerian Aquatic Ecosyst.* 257e276.

- Matos, S. and Silvestre, B.S. (2013), "Managing stakeholder relations when developing sustainable business models: The case of the Brazilian energy sector", *Journal of Cleaner Production*, Vol. 45, pp. 61–73.
- Marzec-Wroblewska, U., Kaminski, P., Iakota, P. (2012). influence of chemical elements on mammalian spermatozoa. *Folic Biologica (Praha)* 58,7-15.
- McNally, H., Howley, P. and Cotton, M. (2018). Public perceptions of shale gas in the UK: framing effects and decision heuristics. *Energy, Ecology and Environment*, 3(6), pp.305-316.
- Mc Williams, A. Siegel, D. and Wright, P.M. (2006) 'Corporate social responsibility: Strategic implications', *Journal of Management studies*, 43 (1), pp. 1-18.
- Mease, L. A., Erickson, A. and Hicks, C. (2018). Engagement takes a (fishing) village to manage a resource: Principles and practice of effective stakeholder engagement. *Journal of Environmental Management*, 212, 248–257.
- Mekonnen, M. M. and Hoekstra, A.Y. (2016). 'Four Billion People Facing Severe Water Scarcity', *Science Advances*, Vol. 2, No. 2, 2016, p.e1500323-e1500323 (Mekonnen & Hoekstra, 2016).
- Melissen, F. and Moratis, L. (2016), "A Call for Fourth Generation Sustainable Business Models", *Journal of Corporate Citizenship*, Vol. 2016 No. 63, pp.8–16. Mena, C.F., Arsel, M., Pellegrini, L., Orta-Martinez, M., Fajardo, P., Chavez, E., Guevara, A., Espín, P. (2020). Community-based monitoring of oil extraction: lessons learned in the Ecuadorian Amazon. *Soc. Nat. Resour.* 33 (3), 406–417.
- Mikkelsen, G. M. (2013). Growth is the problem; Equality is the solution. *Sustainability*, 5, 432-439. doi:10.3390/su5020432.
- Miles, S. (2017), "Stakeholder Theory Classification, Definitions and Essential Contestability", *Stakeholder Management*, pp. 21–47.
- Ministry of Petroleum and Energy (MPE) (2014). 'The Norwegian Petroleum Sector' Fact Sheet 2014. Available online at: <http://www.onlinejournal.in>. [Accessed 25th July 2021].
- Miska, C., Hilbe, C. and Mayer, S. (2014). Reconciling different views on responsible leadership: A rationality-based approach. *Journal of Business Ethics*, 125, 349–360.

- Mitchell, J. R., Mitchell, R. K., Hunt, R. A., Townsend, D. M. and Lee, J. H. (2022). Stakeholder engagement, knowledge problems and ethical challenges. *Journal of Business Ethics*, 175(1), 75–94. Available online at: <https://doi.org/10.1007/s10551-020-04550-0>. [Accessed 25th July 2021].
- Mitchell, R. K., Van Buren, H. J. III, Greenwood, M., & Freeman, R. E. (2015). Stakeholder inclusion and accounting for stakeholders. *Journal of Management Studies*, 52, 851–877.
- Mitchell, R.K., Agle, B.R. and Wood, D.J. (1997), “Toward a theory of stakeholder identification and salience: Defining the principle of who and what really counts”, *Academy of Management Review*, Vol. 22 No. 4, pp. 853–886.
- Mintzberg, H. (2010). Developing leaders? Developing countries? *Oxford Leadership Journal*, 1(2), 1- . Available online at: <http://www.oxfordleadership.com/journal/vol.issue2/oljindex.html>. [Accessed 25th July 2021].
- Mogborukor, J. O. A. (2014). The Impact of Oil Exploration and Exploitation on Water Quality and Vegetal Resources in a Rain Forest Ecosystem of Nigeria. *Mediterranean Journal of Social Sciences*, 5 (27): 1678 – 1685.
- Mohammed, J.I. (2016). Comparing Nigeria’s Legal Framework for Combating Gas Flaring with That of Norway – Lessons for Nigeria: *Imperial Journal of Interdisciplinary Research (IJIR)* Vol-2, Issue-9. Available online at: <http://www.onlinejournal.in> . [Accessed 25th July 2021].
- Moldavanova, A. (2014), “Two Narratives of Intergenerational Sustainability”, *The American Review of Public Administration*, Vol. 46 No. 5, pp. 526–545.
- Montiel, I. (2008), “Corporate social responsibility and corporate sustainability: Separate pasts, common futures”, *Organization and Environment*, Vol. 21 No. 3, pp. 245–269.
- Morrison, L., Wilmshurst, T. and Shimeld, S. (2018). Environmental reporting through an ethical looking glass. *Journal of Business Ethics*, 150, 903–918.
- Morse, T. M. and Coulehan, J. (2015). Maintaining confidentiality in qualitative publications. *Qualitative Health Research*, 25, 151-152. doi:10.2105/AJPH.2012.30.301605.
- Morse, J. M. (2015). Critical analysis of strategies for determining rigor in qualitative inquiry. *Qualitative Health Research*, 25, 1212-1222. doi:10.1177/1049732315588501.

- Moskovchenko DV. (2005). Oil products in bottom sediments of water bodies in Khanty-Mansi autonomous Okrug. *Water Resources*. 2005;32(1):79-83.
- Mohammed, A.S., Ackah, I., Tuokuu, F.X., Abane, S. (2022). Assessing the corporate social responsibility interventions in the Ghanaian oil and gas industry: perspectives from local actors. *Extr. Ind. Soc.* 101145.
- Muhammad, S. A., Magaji, M. B., & Idris, M. A. (2020). Assessment of physicochemical parameters in crude oil contaminated water samples of three communities of Ikpokpo, Atanba, and Okpele-Ama of Gbaramatu Kingdom, Along the Escravos River in Warri Southwest Local Government Area of Delta State, Nigeria. *International Journal of Environment and Pollution Research*, 8(1), 57–76.
- Mucheye, T., Tebkew, M., Mariam, Y.G., Abich, A. (2020). Long-term dynamics of woodland vegetation with response of climate variability in the lowlands of northwestern part of Ethiopia. *Environ. Dev. Sustain.* Available online at: <https://doi.org/10.1007/s10668-019-00569-0>. (Accessed 16th May 2021).
- Mustapha, M. (2010). Corruption in Nigeria: Empirical and conceptual notes. *Information, Society and Justice*, 3, 165-175. Available online at: <http://londonmet.ac.uk/isj>. [Accessed 25th July 2021].
- Myllykangas, P., Kujala, J. and Lehtimäki, H. (2010), "Analyzing the essence of stakeholder relationships: What do we need in addition to power, legitimacy, and urgency?", *Journal of Business Ethics*, Vol. 96 No. 2010, pp. 65–72.
- Nag, R. and Gioia, D. A. (2012). From common to uncommon knowledge: Foundations of firm-specific use of knowledge as a resource. *The Academy of Management Journal*, 55, 421-457. doi:10.5465/amj.2008.0352.
- Naimi, A. (2011). Sustainability issues in the petroleum refining industry: A case study of Shell. *Otago Management Graduate Review*, 9, 93-113. Available online at: www.business.otago.ac.nz. [Accessed 25th July 2021].
- Nair, S. R. (2020). The link between women entrepreneurship, innovation, and stakeholder engagement: A review. *Journal of Business Research*, 119, 283–2.

- National Environmental Standards and Regulations Enforcement Agency (Establishment), 2007.
Act No. 25, 30 July 2007
- National Intelligence Council (NIC). (2016). Implications for US National Security of Anticipated Climate Change, Washington DC, US National Intelligence Council, 2016.
- National Oil Spill Detection and Response Agency (NOSDRA) (2015). Addressing the South South's Environmental Emergency: The vital importance of environmental issues in securing stability and prosperity in the Niger Delta. Environmental Emergency Event – Abuja; 2015.
- Nazmuz-Sakib, S.M. (2021). The Impact of Oil and Gas Development on the Landscape and Surface in Nigeria. *Asian Pacific Journal of Environment and Cancer*, 4(1), 9–17.
- Niger Delta Citizens and Budget Platform. (2014). Pardoning impunity: Citizens report on state and local government budgets in the Niger Delta 2013. Available online at: http://saction.org/books/Pardoning_Impunity.pdf. [Accessed 25th July 2021].
- Niger Delta Development Commission. (2006). Niger Delta Regional development master plan. Available online at: <http://www.nddc.gov.ng/masterplan.html>. [Accessed 25th July 2021].
- Niger Delta Development Commission (NDDC). (2005). Draft Copy of the Niger Delta Regional Development Regional Master Plan. Directorate of Planning. NDDC, Port Harcourt.
- National Population Commission (NPC) (2018). National Population Commission Abuja, Nigeria [Nigeria]. Nigeria Demographic and Health Survey 2018. Abuja, Nigeria, and Rockville, Maryland, USA: NPC.
- Nigeria National Population Commission (2006). National Bureau of Statistics (NBS) (various years). National Accounts Statistics of Nigeria. Abuja: National Bureau of Statistics.
- Nigeria Extractive Industries Transparency Initiative (NEITI) (2013). Financial, Physical and Process Audit: An Independent Report Assessing and Reconciling Physical and Financial Flows within Nigeria's Oil and Gas Industry. Taju Audu & Co. pp. 1-396.
- Neuman, W. L. (2006). *Social Research Methods: Qualitative and Quantitative Approaches* 6th Edition, Pearson International Edition, USA.
- Nevalainen M., Helle I., and Vanhatalo J. (2017). Preparing for the unprecedented—Towards quantitative oil risk assessment in the Arctic marine areas, *Marine Pollution Bulletin*, 114(1)

- 90–101. Available online at: <https://doi.org/10.1016/j.marpolbul.2016.08.064> PMID: 27593852. [Accessed 25th July 2021].
- Nguah J.A and Mensah P.K. (2016). The emerging oil industry in Ghana: socioeconomic impact on the people of the fishing communities in Western Region. *Int J Petroleum Gas Explor Manage.* 2016;2(1):1–25. [Google Scholar].
- Niger Delta Development Commission NDDC. (2014). Niger Delta development master plan 2006. Retrieved August 15, 2021. Available online at: <https://www.nddc.gov.ng/NDRMPChapter1.pdf>. [Accessed 25th July 2021].
- Niger Delta Development Commission (2006). Niger Delta Region Land and People. Abuja: Federal Republic of Nigeria.
- Niger Delta Environmental Survey (NDES) (1997). Environment and Socio-economic Characteristics. Phase 1 Report, Port Harcourt.
- Nigerian National Petroleum Corporation (2014). Annual Statistical Bulletin; 2014.
- Nigerian National Petroleum Corporation (2016). 'History of the Nigerian Petroleum Industry', Nigeria: <<http://nnpcgroup.com/NNPCBusiness/BusinessInformation/OilGasinNigeria/IndustryHistory.aspx>>. [Accessed 25th January 2024].
- Nigerian National Petroleum Corporation (NNPC), (2013). Annual Statistical Bulletin' Corporate Planning and Strategy Division. Available online at: <http://www.nnpcgroup.com/Portals/0/Monthly%20Performance/2013%20ASB%201st%20edition.pdf>. [Accessed 25th January 2024].
- Nigerian Oil and Gas Industry (2017) Annual Report. [www.document]. Available online at: <https://www.dpr.gov.ng/wp-content/uploads/2018/10/2017-NOGIAR-WEB.pdf>. [Accessed 25th January 2024].
- Nkwocha, E. E. and Pat-Mbano, E. C. (2010). Effect of Gas Flaring on Buildings in the Oil Producing Rural Communities of River State, Nigeria. *African Research Review*, 4 (2): 90-102.
- Nnaji, J. C. (2017). Nanomaterials for remediation of petroleum contaminated soil and water. *Umudike Journal of Engineering and Technology*, 3(2), 23–29.

- Noble, H. and Smith, J. (2015). Issues of validity and reliability in qualitative research. *Evidence Based Nursing*, 18(2), 34-35. Retrieved from <https://ebn.bmj.com/>. [Accessed 25th January 2024].
- Noland, J. and Phillips, R. (2010), "Stakeholder engagement, discourse ethics and strategic management", *International Journal of Management Reviews*, Vol.12 No. 1, pp. 39–49.
- Novoa, A., Shackleton, R., Canavan, S., Cybele, C., Davies, S. J., Dehnen-Schmutz, K., Fried, J., Gaertner, M., Geerts, S., Griffiths, C. L., Kaplan, H., Kumschick, S., Le Maitre, D. C., Measey, G. J., Nunes, A. L., Richardson, D. M., Robinson, T. B., Touza, J., & Wilson, J. R. U. (2018). A framework for engaging stakeholders on the management of alien species. *Journal of Environmental Management*, 205, 286–297.
- Nriagu, J., Udofia, E. A., Ekong, I. and Ebuk, G. (2016). Health Risks Associated with Oil Pollution in the Niger Delta, Nigeria. *International Journal of Environmental Research and Public Health*, 13, 346; doi: 10.3390/ijerph13030346.
- Nussbaum MC (2000) *Women and Human Development: The Capabilities Approach* (Cambridge Univ Press, Cambridge, UK). 12. UN Millennium Project (2000).
- Nussbaum MC, Amartya S, eds (1993). *The Quality of Life* (Clarendon, Oxford). Available online at: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2040431/pdf/zpq16747.pdf>. [Accessed 25th January 2024].
- Nwaejije, E.C., Hamidu, I., Obiosio, E.O. (2017). Early to middle miocene sequence stratigraphy of well-5 (OML 34), Niger Delta, Nigeria. *J. Afr. Earth Sci.* 129, 519–526.
- Nwamaka, I. (2016). Gas Flaring in Nigeria, an Abridgement of Human/Fundamental Right. *Research Gate*. 2016. Available online at: www.researchGate.net/publication/317076913. [Accessed 11th November 2022].
- Nwankwoala, H.O., Nwowo, K.N, Udom, G.J. (2016). Assessment of Heavy Metal Status of Groundwater in Parts of Aba, Southeastern Nigeria. *International Journal of Emerging Engineering Research and Technology*. Volume 4, Issue 11, November 2016, PP 27-36. Available online at: <https://www.ijeert.ijrsst.org/papers/v4-i11/4.pdf>. [Accessed 25th January 2024].

- Nweze, N.J and Ojowu, O. (2002). 'Poverty, Wellbeing and Wealth Generation in Benue State' (unpublished, 2002).
- Nwilo, P.C., Badejo, O.T. (2001), Impacts of Oil spills along the Nigerian Coast. The Association for Environmental Health and Science. Available online at: <http://www.aehsmag.com/issues/2001/october/impacts.htm>. [Accessed 11th November 2022].
- Nwosisi, M.C., Oguntoke, O and A.M. Taiwo, A.M. (2019). Dispersion and emission patterns of NO₂ from gas flaring stations in the Niger Delta, Nigeria, Model. Earth Syst. Environ. 6 (1) (2019) 73–84, doi:10.1007/s40808-019-00658-z.
- Ny, H., Macdonald, J.P., Broman, Rg., Yamamoto, Y. and Robèrt, K.-H. (2006). "Sustainability Constraints as System Boundaries. An Approach to Making Life-Cycle Management Strategic", Journal of Industrial Ecology, Vol. 10 No. 1–2, pp. 61–77.
- Uzonwanne, M.C (2015). Economic Diversification in Nigeria in the Face of Dwindling Oil Revenue. Journal of Economics and Sustainable Development. www.iiste.org Vol.6, No.4, 2015
- Obi, C., Bartolini, F. and D'Haese, M. (2019). International migration, remittance, and food security during food crises: the case study of Nigeria. Food Security 12, 207–220.
- Obi, C. (2014). Oil and Conflict in Nigeria's Niger Delta region: between the Barrel and the Trigger. Extract. Ind. Soc 1, 147–153.
- Obi, C. (2012). Because of oil? Understanding the globalization of the Niger Delta and its consequences. In O. Ukaga, U. O. Ukiwo & I. S. Ibaba (Eds). Natural Resources, conflicts, and sustainable development: Lessons from the Niger Delta (pp. 22-38). New York, NY: Routledge.
- Obi, C. J. (2011). Oil gender and agricultural child labour in the Niger Delta region of Nigeria: Implications for sustainable development. Gender and Behaviour, 9, 4072-4101. Available online at: <http://www.ajol.info/index.php/gab>. [Accessed 11th June 2023].
- Obi C.I. (2010). Oil Extraction, Dispossession, Resistance and Conflict in Nigeria's Oil-Rich Niger Delta. Canadian Journal of Development Studies/Revue Canadienne d'etudes du developpement 30(1-2):219-236. Crossref.

- Obi, C.I (2010a) *The Rise of China and India in Africa: Challenges, Opportunities and Critical Interventions*. Nordic Africa Institute, Uppsala, Sweden: Zed Books.
- Obi, C.I., (2010b). The petroleum industry: a paradox or (sp)oilier of development? *J. Contemp. Afr. Stud.* 28, 443–457. Available online at: <https://doi.org/10.1080/02589001.2010.512740>. [Accessed 11th June 2023].
- Obi, CL, Onabolu, C, Momba, MNB, Igumbor, JO, Ramalivahna, J, Bessong, PO, van Rensburg, EJ, Lukoto, M, Green, E, Mulaudzi, TB. (2006). The interesting cross-paths of HIV/AIDS and water in Southern Africa with special reference to South Africa. , pp.p. 323-344 : 9 fig., 6 tab. Available online at: <https://www.ircwash.org/sites/default/files/Obi-2006-Interesting.pdf>. [Accessed 11th June 2023].
- Obi, C.I. (2001). *The Changing Forms of Identity Politics in Nigeria under Economic Adjustment: The Case of the Oil Minorities Movement of the Niger Delta*. Uppsala: Nordic Africa Institute.
- Odalonu B H. (2015). The Upsurge of Oil Theft and Illegal Bunkering in the Niger Delta Region of Nigeria: Is There a Way Out? *Mediterranean Journal of Social Sciences* Vol 6, No 3 S2.
- Odemene, G. C. (2013). *Crises management in the oil and gas industry: The Niger Delta experience*. (Doctoral Dissertation). Retrieved from ProQuest Dissertations and Theses data base. (UMI #3554738).
- Odjugo, P.A.O. (2011). Climate change and global warming, the Nigerian perspective. *J. Sustainable Dev. Environ. Prot.* 1, 6–17.
- Odjugo, P.A.O. (2010). Regional evidence of climate change in Nigeria. *J. Geogr. Reg. Plann.* 3, 142 – 150. Available online at: <https://doi.org/10.5897/JGRP.9000119>. [Accessed 11th June 2023].
- O'Donnell, D. (2007). On critical theory in a truth-less world. *Advances in Developing Human Resources*, 9, 111-119. doi:10.1177/1523422306294499.
- Odoemene, A. (2011). Social consequences of environmental change in the Niger Delta of Nigeria. *Journal of Sustainable Development*, 4(2), 123-135. doi:10.55539/jsd.v4n2p123.

- Odumugbo, C. A. (2010). Natural Gas Utilization in Nigeria: Challenges and Opportunities. *Journal of Natural Gas Science and Engineering*, 310-316. Available online at: <http://dx.doi.org/10.1016/j.jngse.2010.08.004>. [Accessed 11th June 2023].
- Odularu G.O. (2007) Crude Oil and the Nigerian Economic Performance. *Oil and Gas Business*. Pp. 1-29. Available online at: <http://www.ogbus.ru/eng/>. [Accessed 11th June 2023].
- Odalonu, B. (2016). Oil theft and insecurity in post amnesty era in the Niger Delta Region of Nigeria: implications on national security. *E3 J. Environ. Res. Manag.* 7, 1–12.
- Ofoegbu, R. U., Momoh, Y. O. L., and Nwaogazie, I. L. (2014). Bioremediation of crude oil contaminated soil using organic and inorganic fertilizers. *Journal of Petroleum & Environmental Biotechnology*, 6(198), 1–6. Available online at: <https://doi.org/10.4172/2157-7463.1000198>. [Accessed 11th June 2023].
- Ogbe, E. (2010). Optimization of strategies for natural gas utilization: case study of the Niger Delta. A Thesis presented to the department of petroleum engineering, African University of Science and Technology.
- Ogbonnaya, U. M. (2011). Environmental Law and Underdevelopment in the Niger Delta Region of Nigeria. *International Multidisciplinary Journal, Ethiopia*, 5(5), Serial No. 22, pp. 68-82. Available online at: <http://dx.doi.org/10.4314/afrev.v5i5.7>. [Accessed 11th June 2023].
- Ogege, S. O. (2011). Amnesty initiative and the dilemma of sustainable development in the Niger Delta region of Nigeria. *Journal of Sustainable Development*, 4(4), 249-258. doi: 10.5539/jsd.v4n4p249.
- Ogeleka., D.F., Tudararo-Aherobo, L.E., and Okiemen, F.E. (2017). Ecological Effects of Oil Spill on Water and Sediment from two Riverine Communities in Warri, Nigeria. *International Journal of Biological and Chemical Sciences*, 11(1), 453–461.
- Ogolla, B. D. (1995). Environmental Law in Africa: Status and Trends, 23 *Int'l Bus. Law* 412, 412.
- Ogundiya, I. S. (2011). Beyond the "geography of terrorism and terror of geography" thesis: Corruption and development tragedy in the Niger Delta Region. *Journal of Developing Societies*, 27, 57-91. doi:10.1177/0169796X1002700104.

- Oguduvwe, J.I.P. (2013). Poverty in oil rich Delta: A study of selected oil producing communities in Delta State, Nigeria. *Global Research Journal of Education*, 3(1), 1-11. Available online at: <http://www.globalresearchjournals.org/journal/grje>. [Accessed 11th June 2023].
- Ogula, D. (2012). Corporate social responsibility: Case study of community expectations and the administrative systems, Niger Delta. *The Qualitative Report*, 17, 1-27. Available online at: <http://nova.edu/sss/QR/QR17>. [Accessed 11th June 2023].
- Ogundiya, I.S. (2011). Beyond the “Geography of Terrorism and Terror of Geography” thesis: Corruption and the development tragedy in the Niger Delta Region. *Journal of Developing Societies*, 2011 - journals.sagepub.com.
- Ogunkan, D. V. (2010). Religious value: An instrument for sustainable environmental management in Nigeria *Global Journal of Human Social Science*, 10 (3) (2010), pp. 25-30 Google Scholar
- Ogunniran, B.I. (2018). Ozone layer depletion and climate change in Nigeria: problems and prospects-a review. *Edelweiss Appli. Sci. Tech.* 2, 176–179.
- Ogwu F.A., Badamasuiy, S. S., Joseph C. (2015). Environmental Risk Assessment of Petroleum Industry in Nigeria: *International Journal of Scientific Research and Innovative Technology* ISSN: 2313-3759 Vol. 2 No. 4, 60–71.
- Ohimain, E. I., Emeti, C. I. and Izah, S. C. (2014). Employment and socioeconomic effects of semi-mechanized palm oil mill in Bayelsa state, Nigeria. *Asian Journal of Agricultural Extension and Sociology*, 3 (3): 206-216.
- Ohimain, E. I. (2013). Environmental impacts of smallholder ethanol production from cassava feedstock for the replacement of kerosene household cooking fuel in Nigeria. *Energy Sources, Part A*.35: 1560 – 1565.
- Ohimain, E. I. (2013). A review of the Nigeria biofuel policy and incentives (2007). *Renewable and Sustainable Energy Reviews*, 22: 246 – 256.
- Ohimain, E. I. (2013). Can the Nigerian biofuel policy and incentives (2007) transform Nigeria into a biofuel economy? *Energy Policy*, 54: 352 – 359.

- Ohimain, E. I. (2010). Petroleum Geomicrobiology. In: Jain, S. K., Khan, A. A., Rain, M. K., (Editors). *Geomicrobiology: Biodiversity and Biotechnology*. CRC Press/Taylor and Francis, Boca Raton, Florida, USA. Pp. 139 – 174.
- Ojakorotu, V. (2009). *Fresh Dimensions on the Niger Delta Crisis of Nigeria* Edited by. (V. Ojakorotu and O. von Feigenblatt, Eds.). JAPSS Press, Inc.
- Ojewumi, M.E., Okeniyi, J.O., Okeniyi, E.T., Ikotun, J.O., Ejemen, V.A. and Akinlabi, E.T. (2018). Bioremediation: data on biologically mediated remediation of crude oil (Escravos Light) polluted soil using *Aspergillus Niger*. *Chem. Data Collect.* 17–18,196–204.
- Ojimba T.P. (2012). Determining the Effects of Crude Oil Pollution on Crop Production Using Stochastic Translog Production Function in River State Nigeria, *Journal of Development and Agricultural Economics*, 4 (13),346–360.
- Okafor-Yarwood, I. (2018). The Effects of Oil Pollution on the marine environment in the Gulf of Guinea—the Bonga Oil Field Example. *Trans. Legal Theory* 9 (3-4), 254–271.
- Okechukwu, E. (2014). 'Evaluating Sustainable Development: The Chevron GMOU Method" CSR-in-action. Available online at: <http://www.csrinaction.org/index.php/resources/atured-articles/item/394-evaluating-sustainable-development-the-chevron-gmou-method-by-ebubeokechukwu>. [Accessed 11th June 2023].
- Okolie-Osemene, J. (2015). *Oil Companies and Lethal Violence In Nigeria: Patterns, Mapping and Evolution (2006 – 2014)*. IfraNigeria Working Papers Series, N°44.
- Okpara, J.O. (2011), "Corporate governance in a developing economy: barriers, issues, and implications for firms", *Corporate Governance*, Vol. 11 No. 2, pp. 184-199. Available online at: <https://doi.org/10.1108/14720701111121056>. [Accessed 11th June 2023].
- Olmstead, S. M. and Robert N. S. (2012). 'Three Key Elements of a Post-2012 International Climate Policy Architecture', *Review of Environmental Economics and Policy*, Vol. 6, No. 1, 2012, pp.65-85.
- Oluduro, O. and Oluduro, F. O. (2012). Nigeria: In search of sustainable peace in the Niger Delta through the amnesty program. *Journal of Sustainable Development*, 5(7), 48-61. doi:10.5539/jsd.v5n7p48.

- Olufemi, O. (2010). Corporate social responsibility of multinational oil corporations to host communities in Niger Delta Nigeria. *Ife Psychologia*, 18(2), 21-36. doi:10.4314/ifep.v18i2.56641.
- Ololube, N. P., Kpolovie, P. J. and Amaele, S. (2013). Issues of human security and educational development in the Niger Delta region of Nigeria. *Africa Education Review*, 10(3), 453–482. Available online at: <https://doi.org/10.1080/18146627.2013.853540>. . [Accessed 11th June 2023].
- Olujobi, O.J. and Yebisi, T.E. (2022). Combating the crimes of money laundering and terrorism financing in Nigeria: A legal approach for combating the menace. *J. Money Laund. Control* 2022. [CrossRef].
- Olujobi, J.O. and Olujobi, T.O. (2020). Comparative appraisals of legal and institutional framework governing gas flaring in Nigeria’s upstream petroleum sector: How satisfactory? *J. Environ. Qual. Manag.* 2020. [CrossRef].
- Olujobi, O.J. (2021). Combating Insolvency and Business Recovery Problems in the Oil Industry: Proposal for Improvement in Nigeria Insolvency and Bankruptcy Legal framework. *Heliyon* 2021, 7, e06123. [CrossRef].
- Olujobi, O.J. (2020). Analysis of the legal framework governing gas flaring in Nigeria petroleum sector and the need for overhauling. *Soc. Sci.* 2020, 3, 132. [Google Scholar] [CrossRef].
- Olukoya, O. A. P. (2015). Negative Effects of Gas Flaring on Buildings and Public Health in Oil Producing Communities: The Ogbia Community, Bayelsa State Case. *International Journal of Environmental Monitoring and Protection*, 2 (5): 52-61.
- Oluwaseyi, A.B. (2017). Plant Genetic Resources (PGR) in Nigeria and the reality of climate change - a review. *Asian J. Environ. Ecol.* 2, 1–24. Available online at: <https://doi.org/10.9734/AJEE/2017/31855>. [Accessed 11th June 2023].
- Omohimoria, C. U., Oseh, J. O. and Idowu, A. K. (2014). The Effect of Georesources Exploitation on Fishing and Farming in the Niger Delta Region of Nigeria. *International Journal of Agriculture Innovations and Research*, 3(3), 770–781.

- Omojimate, B. U. (2012). Sustainable development, peace and security in the Niger Delta region. *European Journal of Social Sciences*, 28, 549-558. Available online at: <http://www.europeanjournalofsocialsciences.com>. [Accessed 11th January 2024].
- Omokaro, O. and Amusan, F.O. (2003). "The Environmental Impact of Oilfield Formation Water on a Freshwater Streams in Nigeria." *Journal of Applied Science & Environmental Management* 7, no. 1: 61–65.
- Omokhoa, I.E. (2015). Revisiting the peace-building efforts in post conflict Niger delta, Nigeria: a case study of the amnesty programme. *Mediterr. J. Soc. Sci.* 6(6), 349e359. <https://doi.org/10.5901/mjss.2015.v6n6s1p349>. [Accessed 11th January 2024].
- Omolola, O. O. (2013). Why Nigeria is not yet sustainably developed. *APCBEE Procedia*, 5, 383-387. doi:10.1016/j.apcbee.2013.05.066.
- Omotayo, F. O. (2015). The Nigeria freedom of information law: Progress, implantation, challenges and prospects. Available online at: <https://www.digitalcommons.unl.edu/cgi/viewcontent.cgi%3Farticle%3D3192%26context%3Dlibphilpra>. [Accessed 11th January 2024].
- Omosho, O. J. (2013). Transnational oil corporations' operations and environmental degradation in Nigeria, 1956-2010. *Afro Asian Journal of Social Sciences*, 4, 1-22. Available online at: <http://www.onlineresearchjournals.com>. [Accessed 11th January 2024].
- Oniemola, P. K. and Sanusi, G. (2009). The Nigerian biofuel policy and incentives (2007); a need to follow the Brazilian pathway. *International Association for Energy Economics*, 4th Quarter, pp: 135-139.
- Onosode, G. (2003). *Environmental Issues and the Challenges of the Niger Delta: Perspectives for the Niger Delta Environmental Survey Process*. CIBN Press.
- Onuegbu, H.C. (2011). 'The New Minimum Wage: Strategies for Effective Public/Private Sector Management', *News diary online (Nigeria, Sun 26 September 2010)* Available online at: http://www.newsdiaryonline.com/chika_wage.htm. [Accessed 11th January 2024].
- Onwe, 2012. 'Economic Implications of Petroleum Policies in Nigeria: An Overview'. *American International Journal of Contemporary Research*, 2(5), pp. 66-71.

- Onweazu, O. O. (2012). Multinational oil corporations' corporate integrity ethics and sustainable development in Niger Delta, Nigeria. *Journal of Sustainable Development*, 5, 114-121. doi:10.5539/jsd.v5n10p114.
- Onwubiko, O. F., Asmuni, A., Idris, K. and Othman, J. (2013). The causes, effects and potential solutions to the deep-rooted Niger Delta oil crisis. *International Journal of Social and Behavioral Sciences*, 1(6), 122-129. Available online at: <http://www.academeresearchjournals/ijbsbs>. [Accessed 11th January 2024].
- Onwuegbuzie, A. J. and Corrigan, J. A. (2014). Improving the quality of mixed research reports in the fields of human resource development and beyond: A call for rigor as ethical practice. *Human Resource Development Quarterly*, 25(3), 273-299. doi:10.1002/hrdq21197.
- Onwuegbuzie, A.J. and Leech, N.L. (2005). On becoming a pragmatic researcher: The importance of combining quantitative and qualitative research methodologies. *International journal of social research methodology*, 8(5), pp.375-387.
- Onwuegbuzie, A.J. and Teddlie, C. (2003). A framework for analysing data in mixed methods research. *Handbook of mixed methods in social and behavioural research*, 2, pp.397-430.
- Onwuka, E. C. (2005). Oil extraction, environmental degradation, and poverty in the Niger Delta region of Nigeria: a viewpoint. *International Journal of Environmental Studies*, 62 (6), 655 - 662.
- Onwurah, I.N.E., Ogugua, V.N., Onyike, N.B., Ochonogor, A.E., and Otitoju, O.F. (2007). Crude oil spills in the environment, effects, and some innovative clean-up biotechnologies. *Int. J. Environ. Res.* 1, 307e320.
- Onyekuru, N. A. (2011). Environmental Regulations and Nigeria's Economic Decision on the Niger Delta Crisis: The Way Forward. *Asian Journal of Exp. Biol. Science*, 2(2), 336-342.
- Onyenekenwa, C. E. and Agbazue, V. C. (2011). Protection of Nigeria's environment: A critical policy review. *Journal of Environmental Science and Technology*, 4, 490-497.
- Open Society Justice Initiative. (2006). Open Society Justice Initiative Lauds Adoption of Freedom of Information Bill by Nigerian Senate: Understanding the Nigerian Freedom of Information Bill (Nigerian Freedom of Information Coalition) 36pp.

- OPEC (2013) *I Need to Know: An Introduction to the Oil Industry & OPEC*. 2nd Ed. Vienna. Organization of the Petroleum Exporting Countries.
- Opukri, C. O. and Ibaba, I. S. (2008). Oil Induced Environmental Degradation and Internal Population Displacement in the Nigeria's Niger Delta. *Journal of Sustainable Development in Africa*, 10(1), 173-190.
- Opute, A. P. and Madichie, N. (2016). An interrogation of Accounting-Marketing Interface in UK financial services organisations: Mixing Cats with Dogs? *Australasian Marketing Journal*, 24(3), pp. 214-225.
- Opute, A. P., Dedoussis, E. and Tzokas, N. (2013). Building blocks of Accounting-Marketing integration in UK financial services organizations, *Journal of Marketing and Operations Management Research*, 1(4), pp. 323-336.
- Ordinoha, B. and Brisibe, S. (2013). *The human health implications of crude oil spills in the Niger delta, Nigeria: An interpretation of published studies*, 2013.
- O'Riordan, L. and Fairbrass, J. (2014). Managing CSR stakeholder engagement: A new conceptual framework. *Journal of Business Ethics*, 125, 121–145.
- Orogun, P. S. (2010). Resource control, revenue allocation and petroleum politics in Nigeria: The Niger Delta question. *Geo Journal*, 75, 459-507. doi:10.1007/s10708-009-9320-7.
- Orta-Martínez, M., Finer, M. (2010). Oil frontiers and indigenous resistance in the Peruvian Amazon. *Ecol. Econ.* 70 (2), 207–218.
- Orubu, C.O., Ayodele O. & William, E. (2004). "The Nigerian Oil Industry: Environmental Diseconomies, Management Strategies, and the Need for Community Involvement. *Journal of Human Ecology* 16(3): 203-214.
- Oshwofasa, B. O., Anuta, D. E. and Aiyedogbon, J. O. (2012). Environmental degradation and oil industry activities in the Niger-Delta region. *African Journal of Scientific Research*, 9, 444-460. Available online at: <http://www.journalsbank.com/ajsr.htm>. [Accessed 11th January 2024].

- Ostertagova, E., Ostertag, O. and Kováč, J., 2014. Methodology and application of the KruskalWallis test. In *Applied Mechanics and Materials* (Vol. 611, pp. 115-120). Trans Tech Publications Ltd.
- Osuagwu, E. S., and Olaifa, E. (2018). Effects of oil spills on fish production in the Niger Delta. *PLoS ONE*, 13(10), e0205114. Available online at: <https://doi.org/10.1371/journal.pone.0205114>. [Accessed 11th January 2024].
- Osuntokun, A. (1997). *Dimensions of Environmental Problems in Nigeria*. University of Ibadan. Ibadan: Davidson Press.
- O'Toole, K., Keneley, M. and Coffey, B. (2013). The participatory logic of coastal management under the project state: Insights from the Estuary Entrance Management Support System (EEMSS) in Victoria, Australia. *Environmental Science & Policy*, 27, 206–214.
- Oyedepo, S.O. (2012). Energy and sustainable development in Nigeria: the way forward. *Energy Sustain. Soc.* 2 (1), 15. Available online at: <http://dx.doi.org/10.1186/2192-0567-2-15>. [Accessed 11th January 2024].
- Ozturk, M., Yuksel, Y.E. (2016). Energy structure of Turkey for sustainable development. *Renew. Sustain. Energy Rev.* 53, 1259–1272. Available online at: <http://dx.doi.org/10.1016/j.rser.2015.09>. [Accessed 11th January 2024].
- Pachauri, R.K., Allen, M.R., Barros, V.R. (2014). 'Climate Change 2014: Synthesis Report', Contribution of Working Groups I, II and III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change, 2014.
- Paki, F. A. E. and Edoumiekumo, G. S. (2011). Colonialism and political conflict in contemporary Nigeria: The case of the Niger Delta. *International Journal of Humanities and Social Science*, 1(6), 276-284. Available online at: <http://www.ijhssnet.com>. [Accessed 11th January 2024].
- Paki, F. A. E. and Ebienfa, K. I. (2011). Militant oil agitation in Nigeria's Niger Delta and the economy. *International Journal of Humanities and Social Science*, 1, 140-145. Available online at: <http://www.ijhssnet.com>. [Accessed 11th January 2024].

- Partridge, K., Jackson, C., Wheeler, D. and Zohar, A. (2005). *The stakeholder engagement manual. The Guide to Practitioner's Perspectives on Stakeholder Engagement*. 1st ed. Ontario. Stakeholder Research Associates Canada Inc.
- Passetti, E., Bianchi, L., Battaglia, M. and Frey, M. (2019). When democratic principles are not enough: Tensions and temporalities of dialogic stakeholder engagement. *Journal of Business Ethics*, 155, 173–190.
- Patton, M. Q. (2015). *Qualitative research & evaluation methods* (4th ed.). Thousand Oaks, CA: Sage.
- Patzer, M., Voegtlin, C. and Scherer, A. G. (2018). The normative justification of integrative stakeholder engagement: A Habermasian view on responsible leadership. *Business Eth.*
- Paul I. A. (2015). A Historical Perspective of Petroleum on Nigeria's Economic Crisis Since Independence: *Global Journal of Human-Social Science and Economics* 15(2), 17–24.
- Pedrini, M. and Ferri, L.M. (2019), "Stakeholder management: a systematic literature review", *Corporate Governance (Bingley)*, Vol. 19 No. 1, pp. 44–59.
- Pegg, S., Zabbey, N. (2013). Oil and water: the Bodo spills and the destruction of traditional livelihood structures in the Niger Delta. *Community Dev. J.* 48:391–405. Available Online at: <http://dx.doi.org/10.1093/cdj/bst021>. [Accessed 11th January 2024].
- Pete, A. J., Bharti, B., & Benton, M. G. (2021). Nano-enhanced bioremediation for oil spills: A review. *ACS Environmental Science and Technology Engineering*, 1, 928–946.
- Peticca-Harris, A., deGama, N., and Elias, S. R. (2016). A dynamic process model for finding informants and gaining access in qualitative research. *Organizational Research Methods*, 19, 376-401. doi:10.1177/1094428116629218.
- Piegbara, I.F. and Kedei, P.T. (2003). *Men and Women of History: Bodo Perspective*. Fredsbary Printers and Publishers, Bori, Nigeria.
- Pittock P, Baumgartner L, Finlayson C, Thiem J, Forbes J, Silva LGM, Arthington AH. (2018). Managing threats in freshwater systems within protected areas. In C.M. Finlayson, A.H. Arthington, J. Pittock (Eds.), *freshwater ecosystems in protected areas: conservation and management* (1 ed.). 2018;84-109. Taylor and Francis. DOI: <<https://doi.org/10.4324/9781315226385-6>>. [Accessed 11th January 2024].

- Pius, O. J. I. (2013). Poverty in the oil rich Delta: A study of selected oil producing communities in Delta State, Nigeria. *Global Research Journal of Education*, 3, 1-11. Available online at: <http://www.globalresearchjournals.org/journal/grje>. [Accessed 11th January 2024].
- Plaza-Úbeda, J.A., de Burgos-Jiménez, J. and Carmona-Moreno, E. (2010). "Measuring stakeholder integration: Knowledge, interaction and adaptational behavior dimensions", *Journal of Business Ethics*, Vol. 93 No. 3, pp. 419–442.
- Plesl, C., Otachi, E.O., Körner, W., Avenant-Oldewage, A. and Jirsa, F. (2017). Fish as bioindicators for trace element pollution from two contrasting lakes in the Eastern rift valley, Kenya: Spatial and temporal aspects. *Environmental Science and Pollution Research*, 24, 19767-19776. Available online at: <https://doi.org/10.1007/s11356-017-9518-z>. [Accessed 30th March 2021].
- Policy Forum. (1997). Document on 'Corruption and Development in Africa' GCA/PF/N.2/11/1997 cited in Lawal G, *Corruption and Development in Africa: Challenges for Political and Economic Change*, (2007) 2 (1) *Humanity & Social Sciences Journal*, p. 1.
- Polit DF and Beck CT. (2008). *Generating and Assessing Evidence for Nursing Practice*. 8th ed. Williams and Wilkins: Lippincott; 2008.
- Poveda, C. A. and Lipsett, M. G. (2013). A Wa-Pa-Su project sustainability rating system: A simulated case study of implementation and sustainability assessment. *Environmental Management and Sustainable Development*, 3, 1-24. doi:10.5296/emsd.v3i1.4613.
- Price Waterhouse Coopers, (2020). *Assessing the Impact of Gas Flaring on Nigeria Economy*. 2020. Available online at: <https://www.pwc.com/ng/en/assets/pdf/gas-flaring-impact1.pdf>. [Accessed 30th March 2021].
- Provasnek, A. K., Schmid, E. and Steiner, G. (2018). Stakeholder engagement: Keeping business legitimate in Austria's natural mineral water bottling industry. *Journal of Business Ethics*, 150, 467–484.
- Punch Newspaper (2016). 30 per cent of forex spent on fuel imports, Nigeria: Available: <http://punchng.com/30-per-cent-forex-spent-fuel-imports-adeosun/>. Rilwan, 2010. Oral history, US: Global Journals Inc.

- Raj, A.O.Y. and Abejide, T.S. (2013). An assessment of environmental problems associated with oil and gas flaring in the Niger delta region Nigeria 1960–2000. *Arab. J. Bus. Manag. Rev.* 2013, 3, 48. [CrossRef].
- Ranängen, H. (2017). Stakeholder management theory meets CSR practice in Swedish mining, *Mineral Economics*, Vol. 30 No. 1, pp. 15–29.
- Ranängen, H. (2015). Stakeholder management in reality: Moving from conceptual frameworks to operational strategies and interactions, *Sustainable Production and Consumption*, Vol. 3 No. April, pp. 21–33.
- Rauter, R., Jonker, J. and Baumgartner, R.J. (2017). Going one's own way: drivers in developing business models for sustainability, *Journal of Cleaner Production*, Vol. 140, pp. 144–154.
- Reed, M. S., Kenter, J., Bonn, A., Broad, K., Burt, T. P., Fazey, I. R., Fraser, E. D. G., Hubacek, K., Nainggolan, D., Quinn, C. H., Stringer, L. C. and Ravera, F. (2013). Participatory scenario development for environmental management: A methodological framework illustrated with experience from the UK uplands. *Journal of Environmental Management*, 128, 345–362.
- Reed, M. S., Graves, A., Dandy, N., Posthumus, H., Hubacek, K., Morris, J., Prell, C., Quinn, C. H., and Stringer, L. C. (2009). Who's in and why? A typology of stakeholder analysis methods for natural resource management. *Journal of Environmental Management*, 90, 1933–1949.
- Reider S. and Haastrup, D. (2013). Community-Driven Development: A New Approach to Social Development in the Niger Delta. *SPE Economics & Management*, October, 34-39.
- Renouard, C. and Lado, L. (2012). CSR and inequality in the Niger Delta Nigeria. *Corporate Governance*, 12, 472-484. doi:10.1108/14720701211267810.
- Rexler, J. (2010). Beyond the oil curse: Shell, state power, and environmental regulation in the Niger Delta. *Stanford Journal of International Relations*, 12, 26-31. Available online at: <http://www.Stanford.edu/group/sjir/124/fall>. [Accessed 30th March 2021].
- Reynolds, M. and Yuthas, K. (2008). Moral discourse and corporate social responsibility reporting. *Journal of Business Ethics*, 78, 47–64.

- Rhodes, J., Bergstrom, B., Lok, P. and Cheng, V. (2014). A framework for stakeholder engagement and sustainable development in MNC, *Journal of Global Responsibility*, Vol. 5 No. 1, pp. 82– 103.
- Robèrt, K.-H., Broman, G. and Basile, G. (2013). Analyzing the Concept of Planetary Boundaries from a Strategic Sustainability Perspective: How does Humanity avoid Tipping the Planet?”, *Ecology and Society*, Vol. 18 No. 2, pp. 1–9.
- Rockström, J. (2009). A safe operating space for humanity”, *Nature*, Vol. 461 No. 24, pp. 472–475.
- Rodriguez-Gomez, S., Arco-Castro, M.L., Lopez-Perez, M.V. and RodríguezAriza, L. (2020). Where Does CSR Come from and Where Does It Go? A Review of the State of the Art, *Administrative Sciences*, Vol. 10 No. 3, p.60.
- Rodríguez-Olalla, A. and Avilés-Palacios, C. (2017). Integrating sustainability in organisations: An activity-based sustainability model, *Sustainability (Switzerland)*, Vol. 9 No. 6, available online at: <https://doi.org/10.3390/su9061072>. [Accessed 30th March 2021].
- Roloff, J. (2008). Learning from multi-stakeholder networks: Issue-focussed stakeholder management, *Journal of Business Ethics*, Vol. 82 No. 1, pp.233–250.
- Roman, A. V. (2017). Institutionalizing sustainability: A structural equation model of sustainable procurement in US public agencies, *Journal of Cleaner Production*, Vol. 143, pp. 1048–1059.
- Romenti, S. (2010). Reputation and stakeholder engagement: an Italian case study. *Journal of Communication Management*.
- Romeo, R., Vita, A., Testolin R and Hofer, T. (2015). Mapping the Vulnerability of Mountain Peoples to Food Insecurity, Rome, United Nations Food and Agricultural Organization, 2015.
- Roome, N. and Louche, C. (2016). Journeying Toward Business Models for Sustainability: A Conceptual Model Found Inside the Black Box of Organisational Transformation. *Organization and Environment*, SAGE Publications, 2016, 29 (1), pp.11-35. <10.1177/1086026615595084>.<hal-01183743>.
- Ruggie, J.G. (2007). Business and human rights: the evolving international agenda. *Am. J.Int. Law* 101, 819.

- Sachs, S., Stutz, C., Mcorley, V. and Schneider, T. (2017). A Case Study on the Implementation of Stakeholder Management in Organizational Practice”, in Freeman, R.E., Kujala, J. and Sachs, S. (Eds.), Stakeholder Engagement: Clinical Research Cases, Springer, Zurich, pp. 369–388.
- Sachs JD., McArthur JW., Schmidt-Traub G., Kruk M., Bahadur C., Faye M. and McCord, G. (2004). Ending Africa’s Poverty Trap, in Brookings Papers on Economic Activity (Brookings Institution, Washington, DC), no 2, pp 117–216.
- Salas-Zapata, W.A., Ríos-Osorio, L.A. and Mejía-Escobar, J.A. (2017). Socioecological resilience and the quest for sustainability as object of science, Environment, Development and Sustainability, Vol. 19 No. 6, pp. 2237–2252.
- Sam, K. and Zabbey, N. (2018). Contaminated land and wetland remediation in Nigeria: opportunities for sustainable livelihood creation. *Sci. Total Environ.* 639, 1560–1573.
- Sam K., Coulton F., Prpich G. (2017a). A multi-attribute methodology for the prioritization of oil contaminated sites in the Niger Delta. *Science of the Total Environment*, Vol. 579, 1 February 2017, 1323–1332. Available online at: <https://doi.org/10.1016/j.scitotenv.2016.11.126> PMID: 27916308. [Accessed 30th March 2021].
- Sam, K., Coulon, F., Prpich, G., (2017b). Management of petroleum hydrocarbon contaminated sites in Nigeria: current challenges and future direction. *Land Use Pol.* 64, 133e144.
- Samant, S.M. and Sangle, S. (2016), “A selected literature review on the changing role of stakeholders as value creators”, *World Journal of Science, Technology and Sustainable Development*, Vol. 13 No. 2, pp. 100–119. Saunders, M., Lewis, P. and Thornhill, A. (2009), *Research Methods for Busi.*
- Sambo, A. S. (2008). The role of energy in achieving millennium development goal (MDGs). Keynote address at the national engineering technology conference (NETec 2008). Ahmadu Bello University, Zaria held on 1st of April 2008.
- Samhan, F. A., Elliethy, M. A., Hemdan, B. A., Youssef, M., and El-Taweel, G. E. (2017). Bioremediation of oil-contaminated water by bacterial consortium immobilized on environment-friendly biocarriers. *The Journal of the Egyptian Public Health Association*, 92(1), 44–51.

- Sanchez, D.N., Knapp, C.W., Olalekan, R.M., and Nanalok, N.H. (2021). Oil Spills in the Niger Delta Region, Nigeria: Environmental Fate of Toxic Volatile Organics. *Research Square*, 3(3), 7–19.
- Sarma, S. K. (2015). Qualitative research: Examining the misconceptions. *South Asian Journal of Management*, 22(3), 176-191. Available online at: <http://www.sajmamdisa.org>. [Accessed 30th March 2021].
- Saro-Wiwa, K. (1995). *A Month and a Day; A Detention Diary*. London Penguins.
- Saswattecha, K., Cuevas Romero, M., Hein, L., Jawjit, W. and Kroeze, C. (2015). Non-CO2 greenhouse gas emissions from palm oil production in Thailand. *Journal of Integrative Environmental Sciences*, 12(sup1), pp.67-85.
- Saunders, M.N. and Townsend, K. (2016). Reporting and justifying the number of interview participants in organization and workplace research. *British Journal of Management*, 27(4), pp.836-852.
- Schaltegger, S., Hörisch, J. and Loorbach, D. (2020). Corporate and entrepreneurial contributions to sustainability transitions, *Business Strategy and the Environment*, Vol. 29 No. 3, pp. 1617– 1618.
- Schaltegger, S., Hörisch, J. and Freeman, R.E. (2019). Business cases for sustainability: A stakeholder theory perspective, *Organization and Environment*, Vol. 32 No. 3, pp. 191–212.
- Schaltegger, S., Hansen, E.G. and Lüdeke-Freund, F. (2016). Business Models for Sustainability: Origins, Present Research, and Future Avenues, *Organization & Environment*, Vol. 29 No. 1, pp. 3–10.
- Schaltegger, S., Freund, F.L. and Hansen, E.G. (2012). Business cases for sustainability: the role of business model innovation for corporate sustainability, *International Journal of Innovation and Sustainable Development*, Vol. 6 No. 2, p. 95.
- Schaltegger, S., Ludeke-Freund, F., and Hansen, E. G. (2011). Business cases for sustainability and the role of business model innovation: Developing a conceptual framework. Retrieved from Leuphana University of Lueneburg. Available online at: http://www2.leuphana.de/umanagement/csm/content/nama/downloads/download_public

- kationen/Schaltegger_Luedeke_Freund_Hansen_Business_Case_Sustainability.pdf.
[Accessed 13th March 2021].
- Schiller, C., Winters, M., Hanson, H. M. Ashe, M. C. (2013). A framework for stakeholder identification in concept mapping and health research: a novel process and its application to older adult mobility and the built environment. *BMC Public Health*, 13(1), 1. Available online at: <https://bmcpublikealth.biomedcentral.com/>. [Accessed 13th March 2021].
- Schively, C. (2007). Understanding the NIMBY and LULU phenomena: Reassessing our knowledge base and informing future research. *Journal of planning literature*, 21(3), pp.255-266.
- Scholz, M., de los Reyes, G. and Smith, N. C. (2019). The enduring potential of justified hypernorms. *Business Ethics Quarterly*, 2.
- Schrempf, J. (2012). The delimitation of corporate social responsibility: Upstream, downstream, and historic CSR. *Business and Society*, 51, 690-707. doi:10.1177/0007650312446734.
- Scuotto, V., Garcia-Perez, A., Cillo, V. and Giacosa, E. (2020). Do stakeholder capabilities promote sustainable business innovation in small and medium-sized enterprises? Evidence from Italy. *Journal of Business Research*, 119, 131–141.
- Seawright, K. W., Smith, I. H., Mitchell, R. K. and McClendon, R. (2013). Exploring entrepreneurial cognition in franchisees: A knowledge–structure approach. *Entrepreneurship Theory and Practice*, 37(2), 201– 227. doi.org/10.1111/j.1540-6520.2011.00467.x.
- Sekaran, U. and Bougie R. (2010). *Research Methods for Business: A Skill Building Approach*. 5th ed. New Delhi: John Wiley & Sons, Ltd; 2010. pp. 1-468
- Sen, A. (1999). *Development as Freedom*. Oxford: Oxford Univ Press; 1999. [Google Scholar].
- Sen, A. (1985). "Rights and Capabilities", in *Morality and Objectivity: A Tribute to J.L. Mackie*, London: Routledge and Kegan Paul, pp. 130–48.
- Senge, P., Smith, B., Kruschwitz, N., Laur, J. and Schley, S. (2008), *The Necessary Revolution. How Individuals and Organisations Are Working Together to Create a Sustainable World.*, Nicholas Brealey Publishing, London.

- Sharkov, D. (2015). Russia Wasting Millions of Tonnes of Oil from Leaking Pipes. 2015]. Available online at: <https://www.newsweek.com/2015/04/17/russianeed-not-drill-arctic-if-itrepairs-oilpipelineleaks-321372.html>. [Accessed 14th December 2021].
- Shell Companies in Nigeria (2013). Global Memorandum of Understanding [online] available online at: <http://s08.staticshell.com/content/dam/shellnew/local/country/nga/downloads/pdf/2013bnotes/gmou.pdf>. [Accessed 13th March 2021].
- Shell Petroleum Development Company of Nigeria Ltd (SPDC) (2011) 'Shell in Nigeria: Oil, gas, development and CSR. Available online at: www.triplepundit.com/20/11/07/shell-nigeria-csr-corporate-social-responsibility. [Accessed 13th March 2021].
- Shiru, M.S., Shahid, S., Chung, E.-S., Alias, N., Scherer, L., 2019. MCDM-based framework for selection of general circulation models and projection of spatiotemporal rainfall changes: a case study of Nigeria. *Atmos. Res.* 225, 1–16. Available online at: <https://doi.org/10.1016/j.atmosres.2019.03.033>. [Accessed 14th December 2021].
- Shrivastava, P., and Kennelley, J. J. (2013). Sustainability and place-based enterprise. *Organization Environment*, 26, 83-101. doi:10.1177/1086026612475068.
- Signori, S. (2017). From 'Managing for Stakeholders' to 'Managing with Stakeholders': When Stakeholders Can Help Rescue a Company", in Freeman, R.E., Kujala, J. and Sachs, S. (Eds.), *Stakeholder Engagement: Clinical Research Cases*, Springer, Zurich, pp. 167–192.
- Sileyew, K. J. (2019). *Research Design and Methodology*. DOI: 10.5772/intechopen.85731DOI: Available online at: <http://dx.doi.org/10.5772/intechopen.85731>. [Accessed 13th March 2021].
- Sirleaf E.J. and Radelet, S. (2008). 'The good news out of Africa: democracy, stability, and the renewal of growth and development' (Centre for Global Development 2008) p.1.
- Sklair, L. and Miller, D. (2010). Capitalist globalization, corporate social responsibility and social policy. *Critical Social Policy*, 30, 472-495. doi:10.1177/0261018310376804.
- Skelton, O. G. (2015). Exploring knowledge management practices in service-based small businesses (Doctoral dissertation). Available from ProQuest Dissertations and Theses database. (UMI No. 3683733).

- Sloan, P. (2009), "Redefining stakeholder engagement: From control to collaboration", *The Journal of Corporate Citizenship*, Vol. 36 No. Winter, pp. 25–40.
- Smith E R A N and Marquez M 2000 The other side of the NIMBY syndrome *Soc. Nat. Res.* 13 273–80.
- Snapps, O. J. (2011). Special issue on "Africa-based oil exporting companies: The case of Nigeria." *American Review of Political Economy*, 9, 1-56. Available online at: <http://www.arpejournal.com>. [Accessed 13th March 2021].
- Soltanieh, M., Zohrabian, A., Gholipour, M. J. and Kalnay, E. (2016). A review of global gas flaring and venting and impact on the environment: Case study of Iran. *International Journal of Greenhouse Gas Control*, 49: 488–509.
- Spieth, P., Schneckenberg, D. and Matzler, K. (2016), "Exploring the linkage between business model (&) innovation and the strategy of the firm", *R and D Management*, Vol. 46 No. 3, pp. 403–413.
- Stocker, T. F., Qin, D.D and Plattner, G.K. (2013). 'Summary for Policy Makers. *Climate Change 2013: The Physical Science Basis*', Contribution of Working Group 1 to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change, 2013.
- Stringer, L. C., Dougill, A. J., Fraser, E., Hubacek, K., Prell, C. and Reed, M. S. (2006). Unpacking "participation" in the adaptive management of social–ecological systems: A critical review. *Ecology and Society*, 11(2), 39–61.
- Stubbs, W. and Cocklin, C. (2008), "Conceptualizing a 'Sustainability Business Model'", *Organization & Environment*, Vol. 21 No. 2, pp. 103–127.
- Tanee, F.B., Albert, E. (2015). Reconnaissance assessment of long-term effects of crude oil spill on soil chemical properties and plant composition at Kwawa, Ogoni, Nigeria. *J. Environ. Sci. Technol.* 10. Available online at: <https://doi.org/10.3923/2015>. ISSN 1994-7887. [Accessed 13th March 2021].
- Tanen, P. D. (2005) *Bodo: A Perspective on Ogoni History*, Harrison Publishing Company, Port Harcourt, Nigeria.
- Tantua, B., Kamruzzaman, P (2016). Revisiting 'militancy': examining Niger delta. *Rev. Afr. Polit. Econ.* 1e13, 03(05). Available online at:

- http://opus.bath.ac.uk/50368/1/Revisiting_Militancy_and_Control_over_Natural_Resources_5_March_2016_TC_accepted_.pdf. [Accessed 13th March 2021].
- Tapaninaho, R. and Kujala, J. (2019b). Stakeholder Value Creation: Legitimizing Business Sustainability”, in Rendtorff, J.D. (Ed.), *Handbook of Business Legitimacy*, Springer, Cham, pp. 1–15.
- Tawari-Fufeyin, P., Paul, M., Godleads, A.O. (2015). Some aspects of a historic flooding in Nigeria and its effects on some Niger-delta communities. *Am. J. Water Resour* 3,7–16. Tchounwou.
- Terminski, B. (2013). Public International Law and Development-Induced Displacement: A Socio-Legal Analysis *Revista Europea de Derecho de la Navegación Marítima y Aeronáutica*, Vol. 30, 2013, Forthcoming. 19 Pages Posted: 19 Jul 2013 Last revised: 5 Aug 2013.
- Theodoulidis, B., Diaz, D., Crotto, F., Rancati, E. (2017). Exploring corporate social responsibility and financial performance through stakeholder theory in the tourism industries. *Tourism Manage.* 62, 173–188.
- Theodori, G.L. (2009). Paradoxical perceptions of problems associated with unconventional natural gas development. *Journal of Rural Social Sciences*, 24(3), p.7.
- The CIA World Factbook. (2018). Country Comparison: Population — The World Factbook - Central Intelligence Agency". Available online at: www.cia.gov. [Accessed 13th March 2021].
- Theurillat, T. and Crevoisier, O. (2014). Sustainability and the anchoring of capital: Negotiations surrounding two major urban projects in Switzerland. *Regional Studies*, 48(3), pp.501-515.
- Thomas, G. (2016). *How to do your case study* (2nd ed.). Thousand Oaks, CA: Sage Toye, F., Williamson, E., Williams, M. A., Fairbank, J., & Lamb, S. E. (2016). What value can qualitative research add to quantitative research design? An example from an adolescent idiopathic scoliosis trial feasibility study. *Qualitative Health Research*, 26, 1838-1850. doi:10.1177/104973231666624.
- Tirado, M. C., Cohen, M.J., Aberman, N., Meerman, J. and Thompson, B. (2010). Addressing the Challenges of Climate Change and Biofuel Production for Food and Nutrition Security, *Food Research International*, Vol. 43, No. 7, 2010, pp.1729-1744.

- Tobor, J. O. (2014). Urhobo culture and the amnesty program in Niger Delta, Nigeria: An ethnographic case study. (Doctoral Dissertation). Retrieved from ProQuest Dissertations and Theses database. (UMI #3645926).
- Torelli, R., Balluchi, F. and Furlotti, K. (2020). The materiality assessment and stakeholder engagement: A content analysis of sustainability reports, *Corporate Social Responsibility and Environmental Management*, Vol. 27 No. 2, pp. 470–484.
- Turan, F.K. and Needy, K.L.S. (2013). A quantitative decision model towards maximizing organizational sustainability, *EMJ - Engineering Management Journal*, Vol. 25 No. 1, pp. 3–18.
- Ubani, E.C and Onyejekwe, I.M. (2013). Environmental impact analysis of gas flaring in the Niger delta region of Nigeria. *The American Journal of Scientific and Industrial Research*. 2013;4(2):246-252.
- Ochonu M.E,(2011). 'Myths and Fallacies of African Corruption' Unilorin Watch (Nigeria, May, 2011) p.39.
- Udosen, U., Etok, A-IS. And George, I.N. (2009). Fifty Years of Oil Exploration In Nigeria: The Paradox Of Plenty. *Global Journal of Social Sciences*, 8(2), pp. 37-47.
- Ugoh, S. C. and Ukpere, W. I. (2012). Environmental policy in Nigeria: Paradox of the Niger Delta sustainable development. *Journal of Human Ecology*, 37(3), 151-158. Available online at: <http://www.krepublishers.com/02-Journals/JHE/JHE-00-0-000-000-1990-Web/JHE-00-0-000-000-1990-1-Cover.htm>. [Accessed 13th March 2021].
- UKaid. Development Tracker. (2020). Available online at: <https://devtracker.dfid.gov.uk/countries/NP>. [Accessed 13th March 2021].
- Ukeje, C. (2001). "Youths, Violence and the Collapse of Public Order," *Africa Development*, Volume 26, Numbers 1 and 2, pp. 337-366.
- Ukhurebor, K.E., Azi, S.O., Aigbe, U.O., Onyanha, R.B. and Emegha, J.O. (2020). Analysing the uncertainties between reanalysis meteorological data and ground measured meteorological data. *Measurement* 165, 108110. Available online at: <https://doi.org/10.1016/j.measurement.2020.108110>. [Accessed 13th March 2021].

- Ukhurebor, K.E., Abiodun, I.C. (2018). Variation in annual rainfall data of forty years (1978-2017) for South-South, Nigeria. *J. Appl. Sci. Environ. Manag.* 22, 511–518. Available online at: <https://doi.org/10.4314/jasem.v22i4.13>. [Accessed 13th March 2021].
- Umukoro, O.E., Uwuigbe O.R., Uwuigbe U., Adegboye A., O Ajetunmobi O. and C Nwaze C. (2019). Board Expertise and Sustainability Reporting in Listed Banks in Nigeria. *IOP Conference Series: Earth and Environmental Science*, Volume 331, International Conference on Energy and Sustainable Environment 18–20 June 2019, Covenant University, Nigeria. *IOP Conf. Ser.: Earth Environ. Sci.* 331 012048.
- United Nations Conference on Trade and Development (UNCTAD), (2007). *World Investment Report: Transnational Corporations, Extractive Industries and Development*. Geneva, United Nations.
- UNDP (United Nations Development Programme)(2006). 'Niger-Delta Human Development Report' New York. Available online at: <http://hdr.undp.org/en/reports/national/africa/nigeria/name,3368,en.html>. [Accessed 13th May 2023].
- United Nations Economic Commission for Africa (UNECA) (2016). *Combating Corruption, Improving Governance in Africa*. Addis Ababa: UNECA; 2016.
- United Nations Environmental Program (UNEP). (2013). *Africa Environmental Outlook*. United Nations Environment Programme, Nairobi, Kenya, pp. 1e28 (IUCN),2009. 2(1). Available online at: Available online at: <http://hqweb.unep.org/dewa/Africa/publications/aeo-1/Union> for Conserv. of Nat. Natur. Resour. [Accessed 13th May 2023].
- United Nations Environmental Program (UNEP). (2011). *Environmental Assessment of Ogoni land*. Graf, W. D. (1998). *The Nigerian state: political economy, state class, and political system in the post-colonial era*, London; Portsmouth, N.H.: J. Currey ; Heinemann, 1988.
- United Nations Economic and Social Commission for West Asia (UNESCWA) (2020). *Reducing Gas Flaring in Arab Countries: A Sustainable Development Necessity*. 2020. Available online at: <https://www.unescwa.org/publications/reducing-gas-flaring-arabcountries-sustainable-development-necessity>. [Accessed 13th May 2023].

- U.S. Energy Information Administration (2016). Country Analysis Brief: Nigeria. Independent Statistics & Analysis. pp. 1-20.
- Uzonwanne, M.C. (2015) Economic Diversification in Nigeria in the Face of Dwindling Oil Revenue: Journal of Economics and Sustainable Development, Vol.6, No.4, 2015. Available online at: www.iiste.org. [Accessed 13th May 2023].
- Uwem, U. and Enobong, B.A. (2017). Gas flaring in Nigeria: Problems and prospect. Glob. J. Politics Law Res. 2017, 5, 16–28. [Google Scholar]
- Van Bommel, H.W. (2011). A conceptual framework for analysing sustainability strategies in industrial supply networks from an innovation perspective. Journal of Cleaner Production, 19(8), pp.895-904.
- Vanclay, F. (2017). Project-induced displacement and resettlement: from impoverishment risks to an opportunity for development? Impact Assessment and Project Appraisal, 35(1), 3-21.
- Varpio, L., Ajjawi, R., Monrouxe, L. V., O'brien, B. C. and Rees, C. E. (2017). Shedding the cobra effect: Problematising thematic emergence, triangulation, saturation, and member checking. Medical Education, 51(1), 40-50. doi:10.1111/medu.13124.
- Vaver, O.Y. (2012). The analysis of social conflicts of environmental management in the Khanty-Mansi autonomous Okrug-Ugra. Geographical Sciences. 2012; 11:533-537.
- Ventriss, C. and Kuentzel, W. (2005). Critical theory and the role of citizen involvement in environmental decision making: A re-examination. International Journal of Organization Theory and Behavior, 8, 519-539. Available online at: <http://www.2.uvm.edu/envnr/welcome/gardepages>. [Accessed 13th May 2023].
- Vidal, N.G., Berman, S. and Van Buren, H. (2015). Stakeholder theory and value creation models in Brazilian firms”, Revista Brasileira de Gestao de Negocios, Vol. 17 No. 55, pp. 911–931.
- Vigh, H. (2009). ‘Motion Squared: A Second Look at the Concept of Social Navigation, ‘Anthropological Theory, Vol. 9, No. 4, 2009, pp.419-438.
- Vogel, B. and Henstra, D. (2015). Studying local climate adaptation: A heuristic research framework for comparative policy analysis. Global Environmental Change, 31, 110–120.

- Vohra, V. (2014). Using the multiple case study design to decipher contextual leadership behaviors in Indian organizations. *The Electronic Journal of Business Research Methods*, 12, 54-65. Available online at: <http://www.ejbrm.com>. [Accessed 13th May 2023].
- Waddock, S. (2011). We are all stakeholders of Gaia: A normative perspective on stakeholder thinking. *Organization & Environment*, 24(2), 192–212.
- Watts, M. (2017). Precarious Life: Violence and Poverty under Boko Haram and MEND. In: Wale, Adebani (Ed.), *The Political Economy of Everyday Life in Africa. Beyond the Margins*. James Currey: Boydell and Brewer Ltd, pp. 179–215.
- Wettstein, F., Giuliani, E., Santangelo, G.D. and Stahl, G.K. (2019). International business and human rights: a research agenda. *J. World Bus.* 54 (1), 54–65.
- Wetzel, F.T., Daniel K.W., Helmut B. and Dustin J. P. (2012). 'Future Climate Change Driven Sea-Level Rise: Secondary Consequences from Human Displacement for Island Biodiversity', *Global Change Biology*, Vol. 18, No. 9, 2012, pp.2707-2719.
- Whitmarsh, L., Nash, N., Upham, P., Lloyd, A., Verdon, J.P. and Kendall, J.M. (2015). UK public perceptions of shale gas hydraulic fracturing: The role of audience, message and contextual factors on risk perceptions and policy support. *Applied Energy*, 160, pp.419-430.
- Wilburn, K. M. and Wilburn, R. (2011). Achieving social license to operate using stakeholder theory. *Journal of International Business Ethics*, 4(2), 3–14.
- Williams, A., Kennedy, S., Philipp, F. and Whiteman, G. (2017), "Systems thinking: A review of sustainability management research", *Journal of Cleaner Production*, Vol. 148, pp. 866–881.
- William, W. (2002). Citizenship Questions and Environmental Crisis in the Niger Delta: A Critical Reflection. *Nordic Journal of African Studies*, 11(3), 377-389.
- Wilson, E. (2016). What is the social licence to operate? Local perceptions of oil and gas projects in Russia's Komi Republic and Sakhalin Island. *Extr. Ind. Soc.* 3 (1), 73–81.
- Wilson, V. (2014). Research methods: Triangulation. *Evidence Based Library and Information Practice*, 9(1), 74-75. Available online at: <http://socialiststudies.com/index.php/EBLIP/index>. [Accessed 13th May 2023].

- Wirtz, B.W., Pistoia, A., Ullrich, S. and Göttel, V. (2016). Business Models: Origin, Development and Future Research Perspectives, Long Range Planning, Vol. 49 No. 1, pp. 36–54.
- Wizor, C.H. and Wali, E. (2020). Crude Oil Theft in the Niger Delta: The Oil Companies and Host Communities Conundrum. *International Journal of Research and Scientific Innovation (IJRSI)*, 7(1), 22–32.
- Woods, M., Paulus, T., Atkins, D. P. and Macklin, R. (2016). Advancing Qualitative Research Using Qualitative Data Analysis Software (QDAS)? Reviewing Potential Versus Practice in Published Studies using ATLAS.ti and NVivo, 1994–2013. *Social Science Computer Review*, 34(5), 597–617. doi:10.1177/0894439315596311.
- Woods, D.D. (2006). Essential characteristics of resilience. *Resilience engineering: Concepts and precepts*, 1, pp.21-33.
- World Bank Report (2021) Global Gas Flaring Tracker Report. 2021. Available online: <https://thedocs.worldbank.org/en/doc/1f7221545bf1b7c89b850dd85cb409b0-0400072021/original/WB-GGFR-Report-Design-05a.pdf> (accessed on 15 March 2022).
- World Bank. (2019). *The World Bank Annual Report 2019: Ending Poverty, Investing in Opportunity*. Washington, DC: World Bank. Available online at: <http://hdl.handle.net/10986/32333>. [Accessed 13th May 2023].
- World Bank (2016). *More, and more productive, jobs for Nigeria: A profile of work and workers*, 2016, Available online at: <https://openknowledge.worldbank.org/handle/10986/23962>. [Accessed 13th May 2023].
- World Bank (2015). *Inflation, Consumer Prices (Annual %)*. Available online at: <https://data.worldbank.org/indicator/FP.CPI.TOTL.ZG>. [Accessed 13th May 2023].
- World Bank, (2004). *Global Gas Flaring Reduction Initiative: Report No. 3: Regulation of Associated Gas Flaring and Venting a Global Overview and Lessons*; World Bank: Washington, DC, USA, 2004.
- World Bank. (2003). *Nigeria Poverty: Environmental Linkages in the Natural Resource Sector - Empirical Evidence from Nigerian Case Studies with Policy Implications and*

- Recommendations. Retrieved from <https://openknowledge.worldbank.org/handle/10986/14612>. [Accessed 13th May 2023].
- World Bank. (2001). *World Development Report 2000/2001: Attacking Poverty*. Oxford: Oxford University Press. Google Scholar.
- World Bank. (1995). *Environmental Economic Study of the Niger Delta, A Report on the Niger Delta, Nigeria*. Washington, DC. 22.
- World Business Council for Sustainable Development (WBCSD). (2020), "How we drive sustainable development", available online at: [<https://www.wbcsd.org/>](https://www.wbcsd.org/). [Accessed 24th October 2023].
- World Commission on Environment and Development (WCED). (1987), *Our Common Future*, First. Oxford University Press, Oxford.
- Wosu, E. (2013). Oil exploration and corporate social responsibility – A case of SPDC global memorandum of understanding (GMou). *Global Journal of Human Social Science, Sociology & Culture*, 13(2), 15-22. Available online at: <https://globaljournals.org/GJHSS>. [Accessed 13th May 2023].
- Yabrade, M. and Tanee, F.B.G. (2016). Assessing the impact of artisanal petroleum refining on vegetation and soil quality: a case study of Warri southwest salt wetland of delta state, Nigeria. *Res. J. Environ. Toxicol.* 10, 205–212.
- Yakubu, O. H. (2017). Addressing environmental health problems in Ogoni land through implementation of United Nations Environment Program recommendations: Environmental management strategies. *Environments*, 4(28), 1–19.
- Yauch, C.A. and Steudel, H.J. (2003). Complementary use of qualitative and quantitative cultural assessment methods. *Organizational research methods*, 6(4), pp.465-481.
- Yin, R. K. (2017). *Case study research: Design and methods* (6th ed.). Thousand Oaks, CA: Sage.
- Yin, R. K. (2013a). *Case Study Research: Design and Methods* (5th ed.). Sage Publications, Los Angeles.
- Yin, R. K. (2013b). Validity and generalization in future case study evaluations. *Evaluation*, 19, 321-332. doi:10.1177/1356389013497081.

- Yin, R.K. (2003). *Case Study Research, Design and Methods*, 3rd Edn. Sage.
- Yiridoe, E.K. (2014). Social acceptance of wind energy development and planning in rural communities of Australia: A consumer analysis. *Energy Policy*, 74, pp.262-270.
- Zabbey, N. and Olsson, G. (2017). Conflicts –oil exploration and water. *Glob. Challeng.* DOI:10.1002/gch2.201600015.
- Zabbey N., Sam K., Onyebuchi AT., (2017). Remediation of contaminated lands in the Niger Delta, Nigeria: Prospects and Challenges (Review). *Science of the Total Environment*, Vol. 586, 952–965. Available online at: <https://doi.org/10.1016/j.scitotenv.2017.02.075> PMID: 28214111. [Accessed 13th May 2023].
- Zabbey, N. and Tanee, F.B.G. (2014). Assessment of asymmetric mangrove restoration trials in Ogoni land, Niger Delta, Nigeria: lessons for future intervention. *Ecol. Restor.* (under review).
- Zabbey, N. and Uyi, H. (2014). Community responses of intertidal soft-bottom macro zoobenthos to oil pollution in a tropical mangrove ecosystem, Niger Delta, Nigeria. *Mar. Pollut. Bull.* 82 (1e2), 167e174. Available online at: <https://doi.org/10.1016/j.marpolbul.2014.03.002>. [Accessed 13th May 2023].
- Zabbey N. (2009). Impacts of oil pollution on livelihoods in Nigeria. Paper presented at the conference on "Petroleum and Pollution - How does that impact human rights? Co-organized by Amnesty International, Forum Syd and Friends of the Earth, Sweden. At Kulturhuset, Stockholm, Sweden; 2009.
- Zanocco, C., Boudet, H., Clarke, C.E. and Howe, P.D. (2019). Spatial Discontinuities in Support for Hydraulic Fracturing: Searching for a “Goldilocks Zone”. *Society and Natural Resources*, 32(9), pp.1065-1072.
- Zeb-Obipi, I. and Bagshaw, K.B. (2002). The Structure of Collective Bargaining in the Nigerian Oil Industry. *Nigerian Journal of Management Sciences*. Vol. III, No. 1, pp.129-156.
- Zhang, B., Matchinski, E.J., Chen, B., Ye, X., Jing, L. and Lee, K. (2019). Marine Oil Spills Oil Pollution, Sources and Effects. *World Seas: An Environmental Evaluation*, pp. 391e406. Available online at: <https://doi.org/10.1016/b978-0-12-805052-1.00024>. [Accessed 13th May 2023].

- Zillman, D., Redgwell, C., Omorogbe, Y. and Barrera-Hernández, L. (Eds.) (2008). *Beyond the Carbon Economy: Energy Law in Transition*; Oxford University Press, 2008; pp. 39–59. Available online at: <https://oxford.universitypressscholarship.com/view/10.1093/acprof:oso/9780199532698.001.0001/acprof-9780199532698>. [Accessed 13th May 2023].
- Zollo, M., Cennamo, C. and Neumann, K. (2013). *Beyond What and Why: Understanding Organizational Evolution Towards Sustainable Enterprise Models*, *Organization and Environment*, Vol. 26 No. 3, pp. 241–259.
- Zuofa, T. and Ochieng, E. G. (2014). *Issues in Risk Management: The perspectives of Managers in Nigeria's Oil and Gas Industry*. *International Journal of Engineering Research and Technology (IJERT)*, 3(4), 369-374.

9. Appendices

9.1. Appendix 1: Survey Questionnaire

Survey Questionnaire

part a: PUBLIC PERCEPTIONS ON ASSESSING THE SOCIAL IMPACTS ARISING FROM PETROLEUM EXPLORATION AND PRODUCTION IN THE NIGER DELTA REGION OF NIGERIA: INCLUDING PROPOSALS FOR SOLUTION.

Quantitative Framework

Dear Respondents,

Information Sheet for Survey Participants

The aim of this study is to gain insight into public perception of the social impacts arising from oil and gas exploration in the Niger Delta region of Nigeria. The study is being conducted by Leonard Romiluyi at Kingston University. You have been selected to take part in this questionnaire survey because you are a stakeholder (i.e., Community leaders; Experts e.g., petroleum engineers, geologist; NGOs heads; Policymakers e.g., Government Agencies and oil company's personnel e.g., Directors, Senior Management). Your participation in the survey is entirely voluntary, and you can opt out at any stage by closing and exiting the browser. If you are happy to take part, please answer the following questions relating to public attitudes to impacts oil and gas exploration and production. Your answers will be reported in the thesis that will be submitted to the Kingston University, as a requirement for award of the degree of Doctor of Philosophy, presented in academic conferences and published in academic journals. The survey should take approximately 30 minutes to complete. Your answers will be treated confidentially and the information you provide will be kept anonymous in any research outputs/publications. Your data will be held securely in the university data base. All data will be deleted after 180 days. The project has been reviewed and approved through the formal Research Ethics procedure at Kingston University. For further information, or if you have any queries, please contact the lead researcher Leonard Oluwole Romiluyi; Tel: +447903574666; Email: k0842519@kingston.ac.uk.

If you have any concerns that cannot be resolved through the lead researcher, please contact Dr Mary Kelly

Course Leader (Geography)

Department of Geology, Geography and Environment
School of Engineering and Environment
Kingston University London
Tel: 02084179000
Email: m.h.Kelly@kingston.ac.uk

Prof. Nigel Walford,
Professor of Applied GIS,
Department of Geography, Geology and the Environment,
School of Engineering and the Environment,
Kingston University,
Penrhyn Road,
Kingston upon Thames. KT1 2EE

Tel. +44 (0)20 8417 2512
Email: nwalford@kingston.ac.uk

We thank you in anticipation of your response.

Your sincerely,
PhD Researcher:
Leonard Oluwole Romiluyi
Tel: +447903574666
Email: k0842519@kingston.ac.uk

*Please tick one box for each item only

SOCIO-DEMOGRAPHICS (Communities and MNC)

Q1. AGE			
18 -29	30 - 49	50 - 69	70 and above

Q2. MARITAL STATUS					
Single	Married	Single parent	Widowed	Divorced	Separated

Q3. SEX	
Male	Female

Q4. OCCUPATION						
Farmer / Fisher men	Unemployed	Employed (Government)	Employed (Private)	Construction/ Maintenance/ Technical/ Engineering/	Academics/ Students	NGOs' Others (Please specify)

Q5. MONTHLY INCOME - (Please state currency)				
Below #25,000 p/a	#25,000 to #40,000 p/a	#40,000 to #55,000p/a	#55,000 to #65,000p/a	Above 65,000,000p/a

Q6. EDUCATIONAL QUALIFICATION						
No formal education	Primary Six Certificate	Secondary School Certificate	Higher National Diploma	Bachelor's Degree	Master's degree	PhD

Q7. NAME OF ETHNIC GROUP	

To what extent do you agree or disagree with the following statements about your experience?

Please read the following statement carefully and for each one tick only one option below to indicate how the statement applies to you from strongly agree to strongly disagree.

Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree
1	2	3	4	5
Q8. COMMUNITY PERCEPTION				
Please choose from the above legend				
Children living in oil-producing regions or areas are at great risk of hematopoietic cancers, light hairs, and swollen bellies problems.				
Employment rates are higher in core oil producing states of the Niger Delta than in any other region in Nigeria.				
Exploration projects results in displacement of settled communities				
Exploration projects results in increase in cost of living				
Oil and gas exploration would be safe if it is regulated and properly monitored				
Exploration activities need to be more regulated to protect human health and the environment				
Exploration projects would boost economic growth of Local Communities				
Oil and gas exploration activities and production is a major threat to our existence				
Exploration projects would improve social amenities such as pipe born water, good roads, hospitals, schools, and employment opportunities				
Exploration projects results in increase in rural-urban migration				
A shift from oil and gas to renewable energy would benefit public health and environment				
The communities displaced as result of exploration receive compensation and substantial flows of revenue when a large exploration project is established				
CSR can play crucial roles in the lives and welfare of landowners in the Niger Delta? Please explain.				

Q9. What is your major concern regarding oil exploration activities in the Niger Delta region of Nigeria (Please rank the following on a scale of 1-5)

	1	2	3	4	5
Water contamination					

Air contamination					
Human and animal health					
Threats to existing economies (agriculture, tourism)					
Surface disruption					
Water shortage					
Increase in violence and crime					
Waste overflow					
Marginalization					
Displacement					
Global warming					
Loss of landscape/aesthetic degradation					

Q10. Have you been affected directly by any of the issues listed in question 5 above? If so, please provide details.

The following questions concern the level of involvement and possible feelings towards oil exploration activities in the Niger Delta region of Nigeria.

Kindly indicate your response as appropriate.

Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree			
1	2	3	4	5			
Q11. COMMUNITIES CONCERNS ABOUT OIL EXPLORATION ACTIVITIES							
Please choose from the above legend			1	2	3	4	5
Niger Delta region is suffering from administrative neglect.							

Oil producing companies are encouraging the community to own and drive development themselves while we provide financial assistance to them.					
Oil exploration activities in the Niger Delta promotes creates employment opportunities which contributed to the economy as 90% of employees are Nigerian.					
Operator of the Shell Petroleum Development Company Joint Venture, providing scholarships to secondary schools, universities, healthcare, and micro finance schemes for indigenous people.					
Do you agree that Niger Delta youth sees the elder as useless, corrupt, and the embodiment of massive failure?					
The problem of illegal bunkering and vandalizing petroleum pipelines contribute immensely to oil spillage and degradation of the environment.					
Environmental degradation that affects water resources reduces the potential for sustainable livelihood, thereby increasing poverty.					
There is need to keep all the parties around the negotiating table to tackle the problems in the Niger Delta region.					
Petroleum exploration and production in the Nigeria's Niger Delta region and export of oil and gas resources by the petroleum sector has substantially improved the nation's economy over the past five decades.					
There is need for multinational oil companies to refrain from their activities damaging the environment of the host communities.					

To what extent do you agree or disagree with the following statements about your experience

Q12. OIL COMPANY'S ROLE IN THE ENVIRONMENTAL ABUSE AND CURRENT MEASURES TO MITIGATE THESE IMPACTS

Q12. Oil companies have play roles in environmental abuse in the Niger Delta region

Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree

Q13. How strongly do you agree that the following has led to increased insurgency against the oil companies and state authorities?

(i). High levels of poverty

Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree

(ii). Unemployment

Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree

(iii). Non-involvement of the local people in the management of their resources

Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree

(iv). Their marginalization from a fair sharing of the oil revenue

Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree

Q14. How strongly do agree that various environmental problems across the region of Niger Delta are the direct consequences attributed to the following?

(a). Poor governance

Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree

(b). Exploitation of region's petroleum resources

Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree

(c). Unsustainable activities

Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree

(d). Ineffective environmental regulations.

Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree

Q15. The existing statutory laws and regulations for environmental protection in the Nigerian petroleum industry seem to be inadequate and ineffective.

Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree

Q16. How strongly do you agree that the following are the key environmental consequences of oil exploration in Niger Delta?

(a). Oil spills

Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree

(b). Climate change

Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree

(c). Air pollution

Strongly Agree	Agree	Neither Agree nor Disagree	Degree	Strongly Disagree

Q17. Do you agree that the region of Niger Delta is poorly managed due to poor regulations in the region.

Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree

Please give a reason for your answer

Q18. The locals of the region of Niger Delta believe that the compensation they will receive after the destruction of their environment cannot bring them any solution for preserving their environment.

Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree

Q19. Do you agree that revenue derived from the oil companies are used by the government to improve education, healthcare, and services?

Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree

Q20. The crisis in the Niger Delta has been thought to be due to the government's inattentiveness to the concerns regarding the development of the region where the bulk of oil revenue is generated. How do you agree?

Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree

Q21. The Nigerian government should adopt international laws and regulations for monitoring various petroleum activities in the region to improve social and economic growth conditions.

Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree

Q22. The decline in crop yields due to the activities of petroleum industries in the region, has led to a significant decrease in food security in the household.

Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree

Q23. Shell Oil gives management jobs/promotions (which are much more highly paid) to foreign workers rather than local workers in Nigeria.

Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree

Q24. The exploration and production activities of oil multinational companies in the Niger Delta region have repeatedly resulted in a host of cultural issues, including:

(a). Unemployment among the indigenous people

Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree

(b). Professional displacement

Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree

(c). Drift in rural-urban region

Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree

(d). Poor human wellbeing

Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree

Q25. What benefit have the oil producing companies brought to communities? Please choose one from the list below.

(a). Economic growth

(b). Provision of vital infrastructure for remote communities such as roads, electricity etc.

(c). Jobs creation

(d). Provision of vital infrastructure for remote communities such as roads, electricity etc.

(e). None of the above

Q26. What is the greatest impact of oil and gas companies in the regions? Please choose one from the list below.

- (a). Environmental degradation
- (b). Pollution
- (c). Decline in biodiversity.
- (d). Climate change
- (e). None of the above

Q27. Who are the key beneficiaries from the activities of the oil and gas companies?

- (a). Oil companies
- (b). Government
- (c). Foreign workers
- (d). Local communities
- (e). None of the above

Q28. On balance, do you think that the oil producing companies have been a positive or a negative influence on the region?

- (i). Positive

(ii). Negative

THIS SURVEY WILL END HERE.

THANK YOU VERY MUCH INDEED FOR YOUR CONTRIBUTION.

9.2. Appendix 2: Interview Guide

Interviews of Key Informants/Experts

Assessing the Social Impacts Arising from Petroleum Exploration and Production in the Niger Delta Region of Nigeria: Including Proposals for Solution.

part I: ASSESSING the Public Perceptions on THE SOCIAL IMPACTS ARISING FROM PETROLEUM EXPLORATION AND PRODUCTION IN THE NIGER DELTA REGION OF NIGERIA

Qualitative Framework

Q1. Sex Male Female **2. Age** 18-29 30 – 49 50 - 69 70 and above

Q3. Occupation

Traditional Rulers Academics NGO / Environmentalist Community Leaders Politician Religious Leader Petroleum Geologist Fishermen Farmer Tourism /Leisure industry Investors Construction / Maintenance

Kindly specify your occupation here if your occupation is not listed above.

Perception

Q4. In relation to the quality of life of the people in your community, how strongly do you believe that exploration of crude oil resources has contributed to environmental degradation, with negative consequences for the people? If so, how?

Q5. In your view, do you agree that taxes derived from the oil companies are used by the government to improve education, healthcare, and services?

Q6. Do you agree that Government should diversify the economy in order to reduce high dependency on oil and gas a major source revenue for the nation?

Q7. Do you think that substituting Oil and Gas with renewables energy (such as nuclear power, solar power, ethanol, and wind power) will be a better approach to the preservation of the environment and quality of life for our communities?

Q8. Is there a possibility that you may have a change of mind regarding your current position? If yes/no, why?

Q9. Do you believe that social and environmental problems are associated with oil and gas exploration and production activities in Niger Delta? If yes, how?

Public Access to Information

Q10. Who would you consider as the reliable source of information on issues related to oil and gas exploration activities? And why?

Stakeholder Engagement and Participation

Q11. Do you think that oil companies often fall short of the communities' expectations of prioritizing community issues in their decision-making process and in negotiations with the government? If not, why?

Q12. History of poor governance and weak political leadership are the root cause of various environmental problems across the region of Niger Delta. Do you agree with this notion? If agree with this or not, why?

Q13. How strongly do you agree Shell oil gives management jobs/promotions (which are much more highly paid) to foreign workers rather than local workers in Nigeria? (If yes/no, please explain)

Q14. Do you think many of the projects of the oil-producing companies in partnership with government and other development agencies help create employment? (If yes/no, please explain)

Q15. Various ways have been proposed for ensuring the participation between oil producing communities and the oil companies. I will mention a few of these and you can indicate whether or not you agree:

(i). Integrating oil and gas revenues into the local development agenda.

Yes: No:

(ii). Ensure that mechanisms are in place in the producing area for local communities to better benefit from oil and gas projects.

Yes: No:

(iii). Improving the livelihoods of communities living in producing areas.

Yes: No:

(iv). Adopting mechanisms for ensuring effective consultation and transparency in relation to the use of extractive industry revenues.

Yes: No:

(v). Public participation, increased transparency, and consultation in decision-making around the development of oil and gas.

Yes: No:

Policy

Q16. Do you believe that a number of initiatives being embarked upon by the federal government to mitigate some of the impacts of oil exploration, including regulations in oil-producing, and international standards are fit for purpose? If so/not, why?

Q17. Do you think that different efforts and negotiating strategies adopted by the Nigerian government to address conflicts in the region exacerbated rather than aided in the conflict resolution? If yes/no, how?

Q18. What is your view of the effectiveness of existing statutory laws and regulations for environmental protection in the Nigeria n petroleum industry?

Q19. Is it fair to say that the Nigerian government should adopt international laws and regulations for monitoring various petroleum activities in the region to improve social and economic growth conditions? If yes/no, how?

Bodo Communities – In Particular

Q20. What do you consider the key benefits that oil producing companies have brought to communities? Please explain?

Q21. How strongly do you believe the Shell Petroleum Development Companies (SPDC) in Nigeria have brought economic benefits to local communities since they began operations in the region?

Q22. How strongly do you agree that CSR play can crucial roles in the lives and welfare of landowners, and residents in the Niger Delta? Please explain.

Q23. Do you think the communities are being deprived of their agriculture production which was the main stay of their livelihood due to incessant oil spill incidences the in the region? If yes, how?

Q24. Do you consider oil and gas development as potentially dangerous to the environment? If so, why?

Q25. What do you consider as the main risk about oil and gas development?

Q26. Do you approve government / oil companies (public) engagement strategy concerning oil and gas exploration in the region and why?

Q27. Will a change in land rights where landowners own and control the resources on their land change your perception about oil and gas development? Why?

Q28. How strongly do you believe that community engagement can improve the environmental management practices of petroleum impacted sites in the oil producing region? Please give a reason for your answer.

Thank you for your participation.

9.3. Appendix 3: SPSS tables

	Ranks		N	Mean Rank
	Occupation			
Children are at great risk	Farmer/Fishermen		35	69.59
	Unemployed		34	81.79
	Employed (Government)		40	84.18
	Employed (Private)		48	79.57
	Total		157	
Employment rates are higher in the oil-producing region	Farmer/Fishermen		35	86.76
	Unemployed		34	87.46
	Employed (Government)		40	72.10
	Employed (Private)		48	73.10
	Total		157	
Exploration projects results in displacement of communities	Farmer/Fishermen		35	72.10
	Unemployed		34	75.96
	Employed (Government)		40	87.88
	Employed (Private)		48	78.79
	Total		157	
Exploration project results in increase cost of living	Farmer/Fishermen		35	77.09
	Unemployed		34	79.18
	Employed (Government)		40	81.19
	Employed (Private)		48	78.45
	Total		157	
Oil and gas will be safe if properly regulated and monitored	Farmer/Fishermen		35	73.81
	Unemployed		34	72.29
	Employed (Government)		40	88.10
	Employed (Private)		48	79.95
	Total		157	
Exploration activities needs to be more regulated	Farmer/Fishermen		35	76.57
	Unemployed		34	74.13
	Employed (Government)		40	89.99
	Employed (Private)		48	75.06
	Total		157	
Exploration activities will boost the economic growth	Farmer/Fishermen		35	83.91
	Unemployed		34	77.10
	Employed (Government)		40	78.81
	Employed (Private)		48	76.92
	Total		157	
Oil exploration are threat to our existence	Farmer/Fishermen		35	74.76
	Unemployed		34	75.10
	Employed (Government)		40	78.59
	Employed (Private)		48	85.20
	Total		157	
Exploration activities will improve social amenities in the region	Farmer/Fishermen		35	93.37
	Unemployed		34	81.72
	Employed (Government)		40	73.51
	Employed (Private)		48	71.17
	Total		157	
Exploration activities increase rural-urban migration	Farmer/Fishermen		35	81.20
	Unemployed		34	67.54
	Employed (Government)		40	84.83
	Employed (Private)		48	80.66
	Total		157	
A shift into renewable energy will benefit the society	Farmer/Fishermen		35	72.56
	Unemployed		34	76.25
	Employed (Government)		40	77.26
	Employed (Private)		47	85.61
	Total		156	
The communities displaced people are substantially compensation	Farmer/Fishermen		35	85.67
	Unemployed		34	69.59
	Employed (Government)		40	83.23
	Employed (Private)		48	77.28
	Total		157	
CSR can play crucial roles in the life of the landowners	Farmer/Fishermen		35	78.96
	Unemployed		34	89.38
	Employed (Government)		40	75.79
	Employed (Private)		48	74.35
	Total		157	

Test Statistics^{ab}

	Children are at great risk	Employment rates are higher in the oil-producing region	Exploration projects results in displacement of communities	Exploration project results in increase cost of living	Oil and gas will be safe if properly regulated and monitored	Exploration activities needs to be more regulated	Exploration activities will boost the economic growth	Oil exploration are threat to our existence	Exploration activities will improve social amenities in the region	Exploration activities increase rural-urban migration	A shift into renewable energy will benefit the society	The communities displaced people are substantially compensation	CSR can play crucial roles in the life of the landowners
Kruskal-Wallis H	2.588	4.128	2.683	.201	3.453	3.783	.641	1.597	6.146	3.558	2.178	2.894	2.917
df	3	3	3	3	3	3	3	3	3	3	3	3	3
Asymp. Sig.	.460	.248	.443	.977	.327	.286	.887	.660	.105	.313	.536	.408	.405

a. Kruskal Wallis Test

b. Grouping Variable: Occupation

Ranks			
	Monthly Income	N	Mean Rank
Children are at great risk	Below #25,000p/a	31	77.61
	#25,000 - #40,000p/a	31	73.42
	#40,000 - #55,000p/a	31	67.39
	#55,000 - #65,000p/a	45	62.67
	Total	138	
Employment rates are higher in the oil-producing region	Below #25,000p/a	31	76.77
	#25,000 - #40,000p/a	31	69.81
	#40,000 - #55,000p/a	31	60.45
	#55,000 - #65,000p/a	45	70.51
	Total	138	
Exploration projects results in displacement of communities	Below #25,000p/a	31	75.08
	#25,000 - #40,000p/a	31	79.61
	#40,000 - #55,000p/a	31	63.52
	#55,000 - #65,000p/a	45	62.81
	Total	138	
Exploration project results in increase cost of living	Below #25,000p/a	31	48.89
	#25,000 - #40,000p/a	31	78.05
	#40,000 - #55,000p/a	31	64.89
	#55,000 - #65,000p/a	45	80.99
	Total	138	
Oil and gas will be safe if properly regulated and monitored	Below #25,000p/a	31	64.16
	#25,000 - #40,000p/a	31	64.47
	#40,000 - #55,000p/a	31	77.48
	#55,000 - #65,000p/a	45	71.14
	Total	138	
Exploration activities needs to be more regulated	Below #25,000p/a	31	61.97
	#25,000 - #40,000p/a	31	63.55
	#40,000 - #55,000p/a	31	68.13
	#55,000 - #65,000p/a	45	79.73
	Total	138	
Exploration activities will boost the economic growth	Below #25,000p/a	31	68.69
	#25,000 - #40,000p/a	31	61.94
	#40,000 - #55,000p/a	31	69.32
	#55,000 - #65,000p/a	45	75.39
	Total	138	
Oil exploration are threat to our existence	Below #25,000p/a	31	79.21
	#25,000 - #40,000p/a	31	61.84
	#40,000 - #55,000p/a	31	59.94
	#55,000 - #65,000p/a	45	74.68
	Total	138	
Exploration activities will improve social amenities in the region	Below #25,000p/a	31	67.21
	#25,000 - #40,000p/a	31	74.31
	#40,000 - #55,000p/a	31	53.79
	#55,000 - #65,000p/a	45	78.59
	Total	138	
Exploration activities increase rural-urban migration	Below #25,000p/a	31	72.37
	#25,000 - #40,000p/a	31	63.37
	#40,000 - #55,000p/a	31	65.37
	#55,000 - #65,000p/a	45	74.59
	Total	138	
A shift into renewable energy will benefit the society	Below #25,000p/a	31	71.37
	#25,000 - #40,000p/a	31	67.71
	#40,000 - #55,000p/a	31	60.73
	#55,000 - #65,000p/a	44	74.07
	Total	137	
The communities displaced people are substantially compensation	Below #25,000p/a	31	69.34
	#25,000 - #40,000p/a	31	64.31
	#40,000 - #55,000p/a	31	65.29
	#55,000 - #65,000p/a	45	76.09
	Total	138	
CSR can play crucial roles in the life of the landowners	Below #25,000p/a	31	67.40
	#25,000 - #40,000p/a	31	68.77
	#40,000 - #55,000p/a	31	57.84
	#55,000 - #65,000p/a	45	79.48
	Total	138	

Test Statistics^{ab}

	Children are at great risk	Employment rates are higher in the oil-producing region	Exploration projects results in displacement of communities	Exploration project results in increase cost of living	Oil and gas will be safe if properly regulated and monitored	Exploration activities needs to be more regulated	Exploration activities will boost the economic growth	Oil exploration are threat to our existence	Exploration activities will improve social amenities in the region	Exploration activities increase rural-urban migration	A shift into renewable energy will benefit the society	The communities displaced people are substantially compensatio n	CSR can play crucial roles in the life of the landowners
Kruskal-Wallis H	3.676	2.788	4.960	16.794	2.919	5.970	2.436	6.143	8.569	2.442	2.745	2.410	6.743
df	3	3	3	3	3	3	3	3	3	3	3	3	3
Asymp. Sig.	.299	.425	.175	.001	.404	.113	.487	.105	.036	.486	.433	.492	.081

a. Kruskal-Wallis Test

b. Grouping Variable: Monthly Income

Ranks

	Educational Qualification	N	Mean Rank
Children are at great risk	No Formal Education	8	37.88
	Primary Six Certificate	11	63.64
	Secondary School Certificate	44	59.20
	Higer National Diploma	52	58.88
	Total	115	
Employment rates are higher in the oil-producing region	No Formal Education	8	54.44
	Primary Six Certificate	11	60.95
	Secondary School Certificate	44	63.11
	Higer National Diploma	52	53.60
	Total	115	
Exploration projects results in displacement of communities	No Formal Education	8	50.81
	Primary Six Certificate	11	54.00
	Secondary School Certificate	44	57.49
	Higer National Diploma	52	60.38
	Total	115	
Exploration project results in increase cost of living	No Formal Education	8	62.13
	Primary Six Certificate	11	51.64
	Secondary School Certificate	44	53.10
	Higer National Diploma	52	62.86
	Total	115	
Oil and gas will be safe if properly regulated and monitored	No Formal Education	8	59.88
	Primary Six Certificate	11	50.23
	Secondary School Certificate	44	51.97
	Higer National Diploma	52	64.46
	Total	115	
Exploration activities needs to be more regulated	No Formal Education	8	49.81
	Primary Six Certificate	11	53.23
	Secondary School Certificate	44	56.70
	Higer National Diploma	52	61.37
	Total	115	
Exploration activities will boost the economic growth	No Formal Education	8	78.06
	Primary Six Certificate	11	63.09
	Secondary School Certificate	44	57.61
	Higer National Diploma	52	54.16
	Total	115	
Oil exploration are threat to our existence	No Formal Education	8	68.19
	Primary Six Certificate	11	64.18
	Secondary School Certificate	44	53.32
	Higer National Diploma	52	59.09
	Total	115	
Exploration activities will improve social amenities in the region	No Formal Education	8	71.19
	Primary Six Certificate	11	62.45
	Secondary School Certificate	44	68.57
	Higer National Diploma	52	46.09
	Total	115	
Exploration activities increase rural-urban migration	No Formal Education	8	57.94
	Primary Six Certificate	11	58.23
	Secondary School Certificate	44	55.13
	Higer National Diploma	52	60.39
	Total	115	
A shift into renewable energy will benefit the society	No Formal Education	8	41.50
	Primary Six Certificate	11	58.95
	Secondary School Certificate	44	54.08
	Higer National Diploma	52	63.65
	Total	115	
The communities displaced people are substantially compensation	No Formal Education	8	54.13
	Primary Six Certificate	11	69.91
	Secondary School Certificate	44	54.05
	Higer National Diploma	52	59.42
	Total	115	
CSR can play crucial roles in the life of the landowners	No Formal Education	8	58.06
	Primary Six Certificate	11	71.09
	Secondary School Certificate	44	57.11
	Higer National Diploma	52	55.97
	Total	115	

Test Statistics^{ab}

	Children are at great risk	Employment rates are higher in the oil-producing region	Exploration projects results in displacement of communities	Exploration project results in increase cost of living	Oil and gas will be safe if properly regulated and monitored	Exploration activities needs to be more regulated	Exploration activities will boost the economic growth	Oil exploration are threat to our existence	Exploration activities will improve social amenities in the region	Exploration activities increase rural-urban migration	A shift into renewable energy will benefit the society	The communities displaced people are substantially compensation	CSR can play crucial roles in the life of the landowners
Kruskal-Wallis H	4.080	2.239	.880	3.072	4.769	1.603	4.358	2.311	13.846	.701	4.778	2.540	2.268
df	3	3	3	3	3	3	3	3	3	3	3	3	3
Asymp. Sig.	.253	.524	.830	.381	.190	.659	.225	.510	.003	.873	.189	.468	.519

a. Kruskal Wallis Test

b. Grouping Variable: Educational Qualification

9.4. Appendix 4: Ethics Approval



11 May 2021

Dear Mr Ohwole Romihyi

Your application 1550 -ASSESSING THE SOCIAL IMPACTS ARISING FROM PETROLEUM EXPLORATION AND PRODUCTION IN THE NIGER DELTA REGION OF NIGERIA: INCLUDING PROPOSALS FOR SOLUTION. has been reviewed. After careful consideration the review panel (on behalf of the University Research Ethics Committee) has agreed a favourable ethical opinion.

Should you make any changes to your project that impact on your ethics application, please submit an application for amendment.

Please be aware that it is the responsibility of the researcher to ensure that all aspects of the research (including future use of data) are fully compliant with General Data Protection Regulation (GDPR).

We wish you every success in conducting this project.

Yours sincerely,

KUREOS Administrator

on behalf of the Kingston University Research Ethics Committee

9.5. Appendix 5: Consent form

Informed Consent for Participation in the Research Project (Interview)

Assessing the Public Perceptions on the Social Impacts Arising from Petroleum Exploration and Production in the Niger Delta Region of Nigeria.

Please tick the appropriate boxes

Yes No

1. Taking part in the study

I have read and understood the study information dated 19th June 2020, or it has been read to me. I
 have been able to ask questions about the study and my questions have been answered to my satisfaction.

Voluntarily, I consent to be a participant in this study and understand that I can refuse to answer
 questions and I can withdraw from the study at any time, without having to give a reason. However, once you have submitted your survey you can no longer withdraw from the study as you will not be identifiable from the data.

I understand that taking part in the study involves audio recorded interviews. The interviews will be conducted using Zoom, via telephone, and in some cases tape-recorded to conduct

online in-depth interviews. All audio recordings will be deleted after the transcription of the data.

I understand that taking part in the study has no potential risk.

2. Use of the information in the study

I understand that information I provide will be used for the purpose of research

I understand that personal information collected about me that can identify me, such as my name or where I live, will not be shared beyond the study team and will be safe guarded.

I agree that the information I provide can be quoted in research outputs.

3. Future use and reuse of the information by others

I give permission for the information, including audio recordings and survey data that I provide to be

deposited anonymously in Kingston University Box storage so it can be used for future research and learning.

4. Signatures

Name of participant [IN CAPITALS]	Signature	Date
-----------------------------------	-----------	------

For participants unable to sign their name, mark the box instead of signing

I have witnessed the accurate reading of the consent form with the potential participant and the individual has had the opportunity to ask questions. I confirm that the individual has given consent freely.

Name of witness [IN CAPITALS]	Signature	Date
-------------------------------	-----------	------

I have thoroughly read out the information sheet to the potential participant and, to the best of my ability, ensured that the participant understands to what they are freely consenting.

LEONARD OROMILUYI

Name of researcher [IN CAPITALS]	Signature	Date
----------------------------------	-----------	------

5. Study contact details for further information

Further information may be obtained from:

Project Supervisor contact details:

Dr Mary Kelly

Course Leader (Geography)

Department of Geology, Geography and Environment

School of Engineering and Environment

Kingston University London

Tel: 02084179000

Email: m.h.Kelly@kingston.ac.uk

If you become concerned about any issue that may have been raised by you participating in this study, please contact Dr Mary Kelly, on: m.h.Kelly@kingston.ac.uk
For any concerns relating to data protection please contact the university's Data Protection Officer on: dpo@kingston.ac.uk

For any concerns relating to this research project that you feel have not been handled via the contacts above, please contact the Faculty of Science Engineering and Computing Dean, Dr David Mackintosh, on:
D.Mackintosh@kingston.ac.uk

Thank you for taking the time to read this information sheet.

9.6. Appendix 6: Participant Information Sheet-Survey

Information for Survey Participants

Research: Assessing the Public Perceptions on the Social Impacts Arising from Petroleum Exploration and Production in the Niger Delta Region of Nigeria.

The Research: There is growing recognition of the need to understand public attitudes to impacts oil and gas exploration and production and to feed these into decision-making. This study represents an investigation and survey of public perceptions of oil and gas exploration and production, including analysis of the effects of different messages and the relative influence of different audience, message and contextual factors on support and risk perceptions in respect of oil exploration in the Niger Delta region of Nigeria.

This is a PhD research project from the Department of Geography, Geology, and the Environment. This study has been approved by Faculty of Science, Engineering and Computing Research Ethics Committee and will be conducted according to accepted and applicable KU ethics guidelines and principles. The survey is anonymous and response data will only be analysed at aggregate level.

The project is voluntary, and all data collected will be held privately in accordance with the requirements of the Data Protection Act. It will only be viewed and accessed by a limited group of people for the purposes of this research. Data will only be deleted after transcription. At all times Kingston University will abide by its Data Protection Policy, which can be found here <https://www.kingston.ac.uk/privacy-policy/>.

In order to stay well, cope with uncertainty, and continue research activity under lockdown the in-depth interview would be conducted virtually via phone, tape recorded and in some cases video calls due to the Covid-19 virus as well as to follow the advice set out by the UK government. At no point will the information you provide be shared in a way that would allow you to be personally identified. The records from this study will be kept as confidential as possible. My supervisor and I will only have access to the files and any audio tapes. Your data will be anonymized, your name will not be used in any reports or publications resulting from the study. All digital files, transcripts and summaries will be given codes and stored separately from any names or other direct identification of participants. Any hard copies of research information will be always kept in locked files. Any published material will be anonymized. However, once you have submitted your survey you can no longer withdraw from the study as you will not be identifiable from the data.

The study results can be sent to you should you desire.

The study results may be disseminated at academic conferences, through published reports and or academic papers.

Further information may be obtained from:

Leonard Oluwole Olaitan Romiluyi

Email: k0842519@kingston.ac.uk

Project supervisor contact details:

Dr Mary Kelly

Location: PRMB 1056 Penrhyn Road,

Faculty of Science, Engineering and Computing,

Department of Geology, Geography and Environment,

Kingston University London

Email: m.h.kelly@kingston.ac.uk

Tel: 02084179000

If you become concerned about any issue that may have been raised by you participating in this study, please contact Dr Mary Kelly, on: m.h.kelly@kingston.ac.uk.

For any concerns relating to data protection please contact the university's Data Protection Officer on: dpo@kingston.ac.uk.

For any concerns relating to this research project that you feel have not been handled via the contacts above, please contact the Faculty of Science Engineering and Computing Dean, Dr David Mackintosh, on: D.Mackintosh@kingston.ac.uk.

9.7. Appendix 7: Participant Information Sheet- Interview

Information Sheet for Interview Participants

Research Topic: Assessing the Public Perceptions on the Social Impacts Arising from Petroleum Exploration and Production in the Niger Delta Region of Nigeria.

The Research: There is growing recognition of the need to understand public attitudes to impacts oil and gas exploration and production and to feed these into decision-making. This study represents an investigation and survey of public perceptions of oil and gas exploration and production, including analysis of the effects of different messages and the relative influence of different audience, message and contextual factors on support and risk perceptions in respect of oil exploration in the Niger Delta region of Nigeria.

This is a PhD research project from the Faculty of Science, Engineering and Computing, School of Engineering and Environment. This study has been approved by Faculty of Science Engineering and Computing Research Ethics Committee and will be conducted according to accepted and applicable KU ethics guidelines and principles.

Your participation in the project is entirely voluntary, and all data collected will be held privately in accordance with the requirements of the Data Protection Act and according to ethical guidance of the Kingston University. Due to pandemic and inability to conduct face to face interview, this interview would be conducted via Zoom and will be recorded to enable the researcher to transcribe the data. The data will be transcribed anonymously therefore no personal identifier will be stored. All transcribes will be stored in the University database for period of six month only after which they would be destroyed. All digital files of consent forms and communication data will be stored separately from any names or other direct identification of participants. Any hard copies of research information will

always be kept in locked files. More information on the data protection policy of Kingston University can be at: <https://www.kingston.ac.uk/privacy-policy/>.

While, this research project is in partial fulfillment of the award PhD degree, excerpt from the research would be presented in academic conferences and published in academic journals.

You may require findings of this project if you so you desire, and it would be sent to you.

Further information may be obtained from:

Leonard Oluwole Olaitan Romiluyi

Email k0842519@kingston.ac.uk

Project supervisor contact details:

Dr Mary Kelly

Location: PRMB 1056 Penrhyn Road,

Faculty of Science, Engineering and Computing,

Department of Geology, Geography and Environment,

Kingston University London

Email: m.h.kelly@kingston.ac.uk

Tel: 02084179000

If you become concerned about any issue that may have been raised by you participating in this study, please contact Dr Mary Kelly, on: m.h.kelly@kingston.ac.uk.

For any concerns relating to data protection please contact the university's Data Protection Officer on: dpo@kingston.ac.uk.

For any concerns relating to this research project that you feel have not been handled via the contacts above, please contact the Faculty of Science Engineering and Computing Dean, Dr David Mackintosh, on: D.Mackintosh@kingston.ac.uk.

9.8. Appendix 8: Invitation to Interview Participants

ASSESSING THE SOCIAL IMPACTS ARISING FROM PETROLEUM EXPLORATION AND PRODUCTION IN THE NIGER DELTA REGION OF NIGERIA: INCLUDING PROPOSALS FOR SOLUTION

Dear Sir / Madam,

Invitation to Participate in Research Project (interview)

We have recognised the growing recognition of the need to understand public attitudes to impacts oil and gas exploration and production and to feed these into decision-making. This study represents an investigation and survey of public perceptions of oil and gas exploration and production, including analysis of the effects of different messages and the relative influence of different audience, message and contextual factors on support and risk perceptions in respect of oil exploration in the Niger Delta region of Nigeria.

You can demonstrate your commitment to helping the Niger Delta communities understand and deal with these environmental and social implications of oil exploration in the region by participating in this research project. We are interested in your opinion therefore there are no right or wrong answers. Be assured that all information provided will be treated with **STRICT CONFIDENTIALITY** and only group responses will be reported.

The findings of this research will be reported in the thesis that will be submitted to the Kingston University, as a requirement for award of the degree of Doctor of Philosophy. If you would like to speak to someone concerning this research, please refer to the attached form. If you would like to receive a copy of the study results, please email me at k0842519@kingston.ac.uk

For the purpose of this study, we require participants to meet the following criteria:

- 1) Community leaders
- 2) Experts e.g., petroleum engineers, geologist
- 3) NGOs heads e.g., Friend of the Earth
- 4) Policymakers e.g., Government Agencies
- 5) Oil company's personnel e.g., Directors, Senior Management

If you meet the above criteria, I would love to interview you. Due to the pandemic, the interview will be conducted via Zoom, thus, there will be no face-to-face contact.

We thank you in anticipation.

Sincerely,

Leonard Oluwole Romiluyi

Tel: +447903574666

Email: k0842519@kingston.ac.uk

Supervisory Team:

Dr Mary Kelly
Course Leader (Geography)
Department of Geology, Geography and
Environment
School of Engineering and Environment
Kingston University London
Tel: 02084179000
Email: m.h.Kelly@kingston.ac.uk

Professor Nigel Walford
Professor of Applied GIS,
Department of Geography, Geology, and the
Environment,
School of Engineering and the Environment,
Kingston University,
Penrhyn Road,
Kingston upon Thames. KT1 2EE
Tel. +44 (0)20 8417 2512
Email: nwalford@kingston.ac.uk

9.9. Appendix 9: PhD Report Upgrade

Kingston University Research

MPhil to PhD UPGRADE REPORT

Student Name	Mr Oluwole Olaitan Romiluyi
Kingston Student ID	0842519
Mode of Attendance	Full Time
Date first registered	09/Mar/2020
First Supervisor	Dr Mary Helena Kelly
Working title of project	Assessing the social impacts arising from petroleum exploration and production in the Niger Delta region of Nigeria, including proposals for solution

FRDC Outcome

Considered by Faculty Research (Degrees) Committee:
Agree with Recommendation
Decision and Recommendations:
Original submission: Revise and resubmit monitoring report and action plan, taking the reviewers' comments (sent via email) into account.
Revised submission: satisfactory, registration for PhD confirmed. See the reviewers' comments sent via email

RECOMMENDATION BY NOMINATED BRIEFER:

Lead Panel Member	Date
Miss Rosalind Fiona Lynette Percival	21/Dec/2021
RECOMMENDATION BY LEAD PANEL MEMBER:	
registration should be upgraded to PhD	

OUTCOME OF PRESENTATION:

As part of the upgrade assessment all students are required to present their work to a panel. The panel must include an assessor independent of the student's supervisory team. The format of this presentation is determined by the Faculty and may be a viva, formal presentation at a seminar, or other form of assessment where the student presents

