



Oil Theft in the Niger Delta and Its Economic Implications for Nigeria between 2021 and 2025

Dr. Emuesiri Joshua Esiere*¹ & Emmanuel Ifeakaonye Nmor²

^{1,2} Department of Political Science, Delta State University, Abraka, Delta State, Nigeria

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Abstract: Oil theft in the Niger Delta has long undermined Nigeria's oil-dependent economy by lowering government revenue, harming the environment, and escalating socioeconomic unrest. Between 2021 and 2025, a time of policy, regulatory, and security reforms, such as the Petroleum Industry Act of 2021, this study examined patterns in crude oil theft and their economic effects on Nigeria. The study, which is based on the Frustration–Aggression Theory, sees oil theft as a reaction to marginalisation, perceived hardship, and environmental deterioration in communities that produce oil. A mixed-method approach used secondary data from the Nigerian Upstream Petroleum Regulatory Commission, a survey of 278 respondents, twenty key informant interviews, and field observations in the states of Rivers, Delta, Bayelsa, Akwa Ibom, and Edo. While descriptive statistics and trend analysis examined quantitative evidence, thematic content analysis was used to assess qualitative material. According to the findings, oil theft reached its highest point in 2021, when almost 37.6 million barrels of crude oil worth more than US\$2.6 billion were lost. Stronger security measures, better pipeline surveillance through private security contracts, and regulatory changes all contributed to a notable decrease in theft starting in 2022. Nonetheless, small-scale artisanal refining persists due to host communities' lack of employment prospects, poverty, environmental harm, and unemployment. The study concludes that in order to maintain recent gains, security enforcement must be combined with community development, environmental restoration, economic diversification, transparency, and more robust institutional oversight throughout the Niger Delta.

Keywords: Militancy, Poverty, Economic Implications, Frustration–Aggression Theory, Pipeline Vandalism, Illegal Bunkering

1. Introduction

With significant ramifications for national income, regional stability, and socioeconomic advancement, oil theft in the Niger Delta has emerged as a key issue for Nigeria's oil-dependent economy. Even though the Niger Delta is the nation's main oil-producing region, the ongoing illegal oil operations, such as pipeline vandalism, artisanal refining, and crude oil theft, have severely damaged the economic advantages of hydrocarbon resources. Nigeria lost roughly 619.7 million barrels of crude oil, worth about US\$46.16 billion, to theft and sabotage between 2009 and 2020, while refineries lost about US\$1.84 billion in petroleum products during the nine-year period between 2009 and 2018 (Michael, 2025). In addition to depriving the Nigerian government of significant revenue, the problem of oil bunkering has developed into a sophisticated informal

* Corresponding Author: Email: sunxiaomei@cfau.edu.cn

sector that worsens environmental degradation, perpetuates poverty, and increases insecurity in local communities (Adiat, 2024; Obodozie & Okongwu, 2025).

According to academic evaluations, the rise of oil theft and artisanal refining methods in the Niger Delta can be attributed to structural disparities in resource governance, inadequate institutional monitoring, and the failure of corporate social responsibility initiatives (Akindoyo, 2025; Michael, 2025). These illegal operations have created a parallel economic system that flourishes in the face of high youth unemployment and limited employment opportunities, perpetuating cycles of socioeconomic exclusion and marginalisation (Adiat, 2024).

The stakes are further raised by Nigeria's substantial reliance on oil for foreign exchange earnings and fiscal revenue, since theft losses have a direct influence on macroeconomic stability and national budget performance (Michael, 2025; Obodozie & Okongwu, 2025). According to recent assessments, between 2020 and 2023, an average of 200,000 to 400,000 barrels per day — roughly 15 to 20 percent of all onshore production — were stolen, causing the Nigerian economy to suffer catastrophic financial losses (Obanijesu et al., 2025).

In addition to reducing Nigeria's ability to invest in vital social services and infrastructure, these losses also erode investor confidence in the petroleum industry, which leads to international oil corporations selling off onshore assets (Akindoyo, 2025; Obanijesu et al., 2025). The Petroleum Industry Act (PIA), which was enacted in 2021 with the goal of modernising the industry, attracted nearly US\$16 billion in new investments and increased the involvement of indigenous people in oil production (Omontuemhen, 2026). Therefore, in order to build lasting policy solutions that improve both regional development and national economic resilience, it is essential to understand the dynamics of oil theft and its economic implications between 2021 and 2025.

2. Statement of the Problem

Nigeria's economic stability and development prospects are seriously threatened by the persistent problems of oil theft and illicit bunkering in the Niger Delta. Illegal operations like pipeline vandalism and crude oil siphoning continue to deny the Nigerian state substantial oil revenues, which are necessary for government spending and economic expansion, despite the region's enormous petroleum wealth (Akindoyo, 2025; Michael, 2025). The scope and sophistication of these illegal activities have increased, resulting in ongoing revenue shortfalls that worsen budget deficits and erode investor confidence in the petroleum industry (Adiat, 2024; Obanijesu et al., 2025). According to an analysis of recent statistics, oil spill incidents alone resulted in a 23 percent decrease in oil production, and crude oil theft was responsible for an estimated US\$14.2 billion in revenue losses during the previous ten years (Obanijesu et al., 2025). Additionally, oil theft has exacerbated the Niger Delta's pre-existing poverty and environmental insecurity by worsening environmental degradation and socioeconomic upheaval in host communities. Oil spills, land degradation, and the collapse of local livelihoods are all caused by illegal bunkering and pipeline breaches, creating a vicious cycle in which socioeconomic deprivation both drives and results from these illegal operations (Adiat, 2024; Obodozie & Okongwu, 2025).

This problem has been made worse by the spread of small arms and light weapons; in the post-amnesty era, 78.62 percent of oil spillage incidents have been caused by third-party actors like oil bunkers and pipeline vandals, who are aided by the widespread availability of small arms and light weapons (SALW) (Adiat, 2024). In addition to a loss of national income, the result is increased community marginalisation and insecurity.

This ongoing issue is especially severe between 2021 and 2025, when Nigeria has had difficulty completely curtailing these operations despite the fact that they significantly reduce foreign exchange revenues and crude oil output. Oil theft has not entirely disappeared, despite tremendous progress — daily crude oil losses fell from a peak of 102,900 barrels per day in 2021 to 9,600 barrels per day by July 2025, signifying a 94.57 percent reduction (Coalition for the Protection of Democracy, 2025). The persistence of residual oil theft underscores the necessity for a thorough investigation into its economic implications and governance challenges, as well as a crucial gap in policy effectiveness and enforcement tactics.

3. Scope of the Study

The phenomenon of oil theft in Nigeria's Niger Delta and its economic effects on the nation between 2021 and 2025 are the main subjects of this study. Geographically, the study is restricted to the Niger Delta states — Rivers, Delta, Bayelsa, Akwa Ibom, and Edo States, among others — where oil production is concentrated. Both quantitative and qualitative elements of oil theft are covered in the study. It examines production losses, trends in crude oil theft, and the resulting economic effects on government revenue, foreign exchange earnings, and fiscal stability during the given time frame. It investigates, qualitatively, the socioeconomic impacts of oil theft on nearby communities, such as environmental deterioration, job loss, and security challenges. The study does not address the technical aspects of oil production, business operational strategies, or illicit activity outside of the Niger Delta, but it does highlight government measures and interventions intended to reduce oil theft. The 2021–2025 study period ensures a current analysis by capturing current trends, policy responses, and economic effects that are pertinent to scholars and policymakers alike.

4. Limitation of the Study

Although this study offers insightful information about crude oil theft and its economic effects in the Niger Delta between 2021 and 2025, there are a number of limitations that make it difficult to understand and generalise the results. First, just fifteen communities and five oil-producing states — Rivers, Delta, Bayelsa, Akwa Ibom, and Edo — were included in the geographic scope. The results may not accurately reflect the Niger Delta as a whole because other oil-producing states like Ondo, Abia, and Imo were excluded. Second, official data from the Nigerian Upstream Petroleum Regulatory Commission (NUPRC) was a major source of information for the study. Due to potential underreporting, over-reporting, or variations in the measurement techniques for stolen crude oil, such statistics may contain errors. Third, survey results may have been impacted by social desirability bias. Some respondents might have withheld information or given responses they thought were socially acceptable because oil theft is a sensitive and illegal practice. Fourth, the intricate interplay of elements like poverty, unemployment, environmental degradation, corruption, and organised crime makes it difficult to establish direct links between socioeconomic problems and oil theft. Fifth, as the statistics for 2025 only included the months of January through July, the overall trend might be different. Lastly, the use of a cross-sectional research design, which partially depends on retrospective recall, limited engagement from important institutional actors, restricted access to some populations, and difficulties with translation were further limitations.

5. Literature Review

5.1. Conceptual Review

Oil Theft

Oil theft, often known as illegal bunkering, is the unlawful extraction, transportation, refining, or sale of petroleum products and crude oil. This usually happens in Nigeria through artisanal refining, illegal flow-line tapping, and pipeline vandalism, which disrupt legitimate supply chains and generate substantial illicit revenue (Obodozie & Okongwu, 2025). In oil-producing regions, illegal bunkering is tightly linked to broader political and economic issues and has developed into a multibillion-dollar criminal economy involving local actors and organised networks (Adiat, 2024; Michael, 2025).

Conceptual understanding of oil theft is crucial because it serves as the foundation for assessing its effects on the economy, society, and environment. In addition to reducing state revenue, oil theft and related actions like pipeline vandalism damage ecosystems and jeopardise local livelihoods, especially in agriculture and fishing (Adiat, 2024; Michael, 2025). Due to its vast pipeline network, challenging terrain, and history of political turmoil and marginalisation, the Niger Delta, which produces the majority of Nigeria's crude oil, is particularly vulnerable. According to Akindoyo (2025), Michael (2025), and Obodozie & Okongwu (2025), oil theft has been presented as both an economic crime and a socio-political phenomenon that stems from long-standing grievances about environmental damage and the unequal distribution of oil revenues.

5.2. Theoretical Framework

Frustration–Aggression Theory

The connection between aggressive behaviour and frustration is explained by the Frustration–Aggression Theory. The theory, which was first put forth by Dollard et al. in 1939, contended that failure to achieve goals invariably results in frustration, which in turn fuels hostility. Scholars like Berkowitz (1962, 1989) later challenged this rigid view, arguing that rather than guaranteeing aggressiveness, frustration actually fosters it. Situational, social, and cognitive aspects determine whether or not aggressiveness takes place.

According to research, some stimuli, referred to as aggressive cues, like firearms, can make frustrated individuals more likely to act aggressively (Berkowitz & LePage, 1967). When the real cause of frustration is unreachable, aggressive behaviour may be diverted toward alternative targets, a phenomenon known as displaced aggression (Geen, 1990).

The theory's applicability to real-world situations and its contribution to the understanding of situational influences on aggression are two of its main advantages. It emphasises how contextual and environmental elements influence violent behaviour. The theory is not without flaws, though. Individual differences, cultural standards, and cognitive processes like moral reasoning and interpretation are not fully explained, and not all frustration results in aggression (Anderson & Bushman, 2002; Bandura, 1973).

Despite the Niger Delta's oil wealth, ongoing frustration stems from political marginalisation, environmental deterioration, and economic hardship (Watts & Zalik, 2020). According to Oyefusi (2008), oil theft can be understood as an aggressive or retaliatory reaction to perceived exploitation. According to the theory, resolving underlying socioeconomic and environmental grievances is crucial to reducing oil theft; security-based remedies alone are insufficient.

5.3. Empirical Literature Review

Economic Implications of Oil Theft

The literature has extensively examined the economic repercussions of oil theft. According to a number of studies, oil theft severely reduces government revenue, restricts foreign exchange earnings, and limits state investment in social services and infrastructure. According to Akindoyo (2025), there is a substantial negative association between foreign direct investment (FDI) inflows and instability in the Niger Delta, specifically with regard to oil theft and militant attacks. The correlation coefficient for oil theft is $B = 0.464$ ($p = 0.001$). Insecurity is weaponised as a means of local bargaining, and this pattern reflects systemic resistance to marginalisation and environmental deterioration (Akindoyo, 2025).

Other academics draw attention to the effects on production capacity and investor confidence. According to Obanijesu et al. (2025), rising crude oil theft, social instability, and high production costs are the main reasons why multinational oil companies are selling off onshore assets. According to their analysis, oil output has decreased by 23 percent over the last ten years as a result of oil spill incidents, resulting in an estimated loss of US\$14.2 billion in revenue (Obanijesu et al., 2025). Nigeria's capacity to fulfil OPEC quotas is hampered by frequent pipeline vandalism, which causes shut-ins and production delays. This has wider macroeconomic ramifications, such as strain on the balance of payments and exchange rate.

Nigeria lost over 619.7 million barrels of crude oil worth about US\$46.16 billion between 2009 and 2020, according to Michael's (2025) thorough analysis of the economic cost of oil theft. Given the significant harm to ecosystems and local livelihoods, the author contends that the environmental risk associated with oil theft should be classified as ecocide (Michael, 2025). The Niger Delta's agriculture, fisheries, and public health all suffer long-term financial consequences as a result of environmental harm brought on by illicit refining.

Environmental Consequences

Scholars emphasise the interconnected socioeconomic and environmental effects of oil theft, despite the fact that economic losses are substantial. Makeshift artisanal refineries frequently used in illegal bunkering not only support illicit economies but also raise unemployment and underemployment rates in nearby communities by destroying infrastructure and degrading ecosystems (Obodozie & Okongwu, 2025). The environmental impacts include widespread oil spills and contamination of land and water bodies, which worsen public health hazards due to contaminated ecosystems, reduce agricultural output, destroy fisheries, and lower local incomes (Adiat, 2024; Michael, 2025).

Adiat (2024) specifically examined the connection between environmental security and the proliferation of weapons in the Niger Delta and found that about 78.62 percent of oil spill incidents in the post-amnesty era were caused by third parties using small arms and light weapons. The study concluded that pipeline vandals and oil thieves are the primary causes of environmental damage in the Niger Delta following amnesty (Adiat, 2024).

Michael (2025) offers thorough documentation of environmental degradation, pointing out that widespread contamination of land and water bodies has been caused by oil theft and sabotage, with the environmental hazard reaching the level of ecocide. To combat the threat of oil theft and its effects on Nigeria's environment, the author suggests utilising technologies such as AI-based monitoring systems and increasing community participation in oil governance (Michael, 2025).

Social Consequences

Oil theft has repercussions that go beyond short-term financial losses. As farmland, fishery resources, and local infrastructure are destroyed by illegal bunkering, local communities face socioeconomic challenges (Obodozie & Okongwu, 2025). Water contamination, decreased agricultural production, and public health hazards are all consequences of environmental degradation caused by spills and artisanal refining operations (Adiat, 2024; Michael, 2025).

Residents are forced to engage in illegal activity as a means of survival due to the combination of environmental damage and disrupted livelihoods, which increases unemployment and poverty. The federal and state administrations' difficulties in overseeing the Niger Delta region are exacerbated by this ongoing cycle of socioeconomic instability. According to Obanijesu et al. (2025), over 40 percent of production disruptions between 2015 and 2022 were related to local conflicts, indicating that community agitations have played a substantial role in operational shutdowns. Following the divestment of multinational oil firms, community members voiced concerns about governance challenges, land ownership disputes, and job losses (Obanijesu et al., 2025).

Government Responses and Policy Interventions

Numerous governmental actions and policy measures are highlighted in the literature on oil theft in the Niger Delta, but it also emphasises ongoing implementation and outcome difficulties. Nigeria's oil sector administration saw a dramatic shift in 2021 with the enactment of the Petroleum Industry Act (PIA). Omontuemhen (2026) claims that post-PIA reforms have boosted indigenous operator engagement across assets, reinforced regulatory clarity, and drawn over US\$16 billion in new investments. Due to a substantial change in sector ownership and management, indigenous businesses currently account for about 55 percent of the country's production (Omontuemhen, 2026).

In an effort to increase accountability in the oil industry, the PIA enhanced supervision procedures, host community development trusts, and regulatory agencies' responsibilities. One important instrument for fostering peace in the Niger Delta is the NUPRC HostComply programme, which monitors oil companies' adherence to host community obligations under the PIA (Centre for Energy Governance and Accountability, 2025). Furthermore, a calculated step to reduce oil losses and enhance operational transparency was taken in 2025 with the approval of 37 new crude oil evacuation routes (Centre for Energy Governance and Accountability, 2025).

Increased surveillance, improved cooperation between security services, and increased roles for community stakeholders in monitoring and reporting unlawful activities are some of the reasons why empirical studies analysing post-2021 trends indicate gradual success in reducing oil theft. According to the Coalition for the Protection of Democracy (2025), daily losses of crude oil decreased by 94.57 percent, from 102,900 barrels per day at the peak in 2021 to 9,600 barrels per day by July 2025. Decisive government action, security operations, and community-based private partnerships — particularly the participation of private security organisations with extensive operational knowledge of the local terrain — are credited with this remarkable turnaround (Coalition for the Protection of Democracy, 2025).

Scholars warn that the sustainability of initiatives is still limited by persistent enforcement and governance challenges. According to Nwoko (2025), forensic analyses showed that over US\$22 billion, US\$81 billion, and US\$200 billion were unaccounted for throughout various audit periods; the overall amount of unaccounted crude oil revenues over the years exceeded US\$300 billion. The senator demanded the establishment of a Special Court for Crude Oil Theft and the use of cutting-edge surveillance technologies, including drones, to guarantee the prompt punishment of criminals (Nwoko, 2025). Critics contend that enforcement and military measures are insufficient on their

own. Comprehensive governance reforms that take socioeconomic factors into account are necessary for a sustainable decrease in oil theft. The underlying causes of oil theft are found to be marginalisation, a lack of economic opportunities, and an inequitable distribution of resource rents. These findings highlight the necessity of inclusive development, transparent governance, and robust legal deterrents to support enforcement tactics (Akindoyo, 2025; Michael, 2025; Obanijesu et al., 2025).

Contemporary Trends and Policy Implications

According to recent reports, coordinated security operations and improved surveillance have significantly reduced crude oil theft. The sharp decline from nearly 100,000 barrels per day lost to less than 10,000 barrels per day between 2021 and 2025 shows that, with the right resources, targeted enforcement can produce significant results (Coalition for the Protection of Democracy, 2025; Omontuemhen, 2026). However, due to the complexity of the illicit economy, enforcement alone is unable to completely eradicate oil theft without addressing underlying socioeconomic factors including poverty, unequal resource distribution, and a lack of economic opportunities in oil-producing regions.

With oil and gas contributing 3.44 percent of GDP in the third quarter of 2025, a slight improvement from 2024 levels, the post-PIA oil industry recovery is gathering momentum (Omontuemhen, 2026). Although production still falls short of the two-million-barrel potential due to oil theft and outdated infrastructure, this growth was aided by firmer oil prices and improved security (Omontuemhen, 2026). In order to achieve a long-term decrease in oil theft and its effects, policy discussions are increasingly focusing on integrated measures that combine security, economic development, and environmental rehabilitation.

5.4. Gaps in the Existing Literature

There are still a number of gaps in the substantial body of research on oil theft in Nigeria. First, a lot of research concentrates on descriptive accounts of oil theft without thoroughly examining data from after 2021, especially the effects of the Petroleum Industry Act and other recent legislative changes. Second, only a small amount of research uses comparative year-by-year analysis to examine oil theft trends over a specific short-term timeframe, capturing the sharp variations seen between 2021 and 2025. Third, there are few studies that specifically connect recent drops in oil theft to quantifiable economic results like stabilised production and revenue recovery.

Using the Frustration–Aggression Theory as a framework for understanding the persistence of residual theft despite notable overall reductions, this study aims to close these gaps by offering a focused analysis of oil theft trends between 2021 and 2025 and examining their economic implications within the context of recent policy and security reforms.

6. Methods

In order to capture both the quantifiable and contextual aspects of oil theft, this study used a mixed-method approach that combined quantitative and qualitative techniques. While qualitative data offered more in-depth understanding of causes, patterns, and effects, quantitative data was used to examine trends and financial losses. Combining the two techniques boosted the validity of the results and enhanced data triangulation.

6.1. Study Area and Geographic Coverage

The five oil-producing states of Rivers, Delta, Bayelsa, Akwa Ibom, and Edo were the focus of the study, which was carried out in Nigeria's Niger Delta region. Selected communities with high historical rates of oil theft and illicit refining operations were the sites of field observations and key informant interviews. These communities comprised Bodo, K. Dere, and Okrika in Rivers State; Oghara, Uzere, and Escravos in Delta State; Nembe, Ogbia, and Brass in Bayelsa; Ologbo, Uzere (a border community), and Ikpoba-Okha in Edo State; and Ibeno, Eastern Obolo, and Mkpanak in Akwa Ibom State. These sites were deliberately chosen due to their accessibility for field research, artisanal refining hotspots, and recorded complaints of pipeline vandalism.

6.2. Population and Sampling

Residents of Niger Delta oil-producing communities, employees of oil companies, security services, and petroleum regulatory authorities made up the research population. Purposive, stratified, and simple random sampling were used in a multi-stage sampling process to select a sample of 300 respondents for the survey.

6.3. Sampling Details (Survey Composition)

The 300 survey participants came from a variety of backgrounds. In order to gather grassroots experiences, views, and potential exposure to oil theft activities, 180 respondents were members of the host communities. The Nigerian Upstream Petroleum Regulatory Commission (NUPRC), NNPC Ltd., and international oil corporations were among the 50 respondents who worked in the oil industry and offered technical insights into pipeline operations, production losses, and regulatory enforcement.

Forty (40) respondents were security personnel, including members of the military, police, the Nigeria Security and Civil Defence Corps (NSCDC), and private surveillance contractors. Their participation offered insights into security operations, operational difficulties, and the efficacy of interventions. Additionally, 30 respondents were community leaders, including women leaders, youth leaders, and traditional rulers, who offered informed viewpoints on socioeconomic effects, grievances, and community dynamics.

6.4. Qualitative Sampling (Key Informants)

Twenty key informants were purposefully chosen for the qualitative component based on their knowledge and firsthand experience with oil theft-related concerns. Four Nigerian Upstream Petroleum Regulatory Commission officers — two from regional offices and two from field monitoring units — served as informants. Additionally, five community leaders were interviewed, including youth presidents and traditional leaders from the chosen communities. The sample also included three pipeline surveillance contractors that operate in the states of Bayelsa, Delta, and Rivers.

To offer insights on enforcement and operational challenges, four security officials from the Nigerian Navy, Nigerian Police, NSCDC, and Joint Task Force were involved. Two scholars with expertise in Niger Delta political economy and two members of civil society organisations focused on environmental justice and oil governance were also included in the sample.

6.5. Data Collection Instruments and Procedures

Both primary and secondary sources provided data for the study. Three main instruments were used to collect primary data. The 300 survey participants were first given a semi-structured questionnaire. Multiple-choice and closed-ended Likert-scale questions were used in the survey to gauge respondents' opinions on the prevalence of oil theft, its effects on the economy, and the success of government initiatives. Over the course of eight weeks, from March to April 2025, the questionnaires were distributed in person by trained research assistants. The questionnaire was designed in English, but as needed, research assistants translated it into Pidgin English and regional languages including Ijaw, Urhobo, and Igbo to ensure respondents understood the questions.

Second, the 20 purposefully chosen individuals were interviewed as key informants. Depending on the informant's availability and the nature of the conversation, each semi-structured interview lasted anywhere from 45 to 90 minutes. To ensure comfort and confidentiality, interviews were held at locations selected by the informants, such as neutral meeting spaces, private offices, and town halls. Pidgin English was occasionally used for clarity; however, English was the primary language used for the interviews. Interviews were audio-recorded with participants' informed consent; if recording was refused, thorough handwritten notes were taken.

The Nigerian Upstream Petroleum Regulatory Commission (NUPRC) reports, government documents, industry publications, scholarly journals, textbooks, and policy documents were the sources of secondary data. From 2021 to 2025, these sources offered statistical data on production losses, economic effects, and crude oil theft volumes.

6.6. Response Rate

278 of the 300 questionnaires that were issued were correctly filled out and returned, yielding a response rate of 92.7 percent. The use of trained research assistants who stayed on-site to collect completed questionnaires and prior interactions with community leaders who promoted access and trust were major factors in the high response rate. The remaining 22 questionnaires were not included in the analysis because they were either not returned or only partially completed.

6.7. Data Analysis Procedures

The 278 valid questionnaires yielded quantitative data that was coded and entered into SPSS version 27 for analysis. The perspectives of respondents regarding the patterns and effects of oil theft were summarised using descriptive statistical approaches, such as frequencies, percentages, means, and standard deviations. Additionally, variations in oil theft volumes and related economic losses between 2021 and 2025 were examined by trend analysis utilising secondary data from NUPRC. Tables and line graphs were used to display the time-series data in order to show trends and changes over time.

Thematic content analysis was used to examine qualitative data from field observations and key informant interviews. The verbatim transcriptions of audio recordings were loaded into NVivo 14 for coding and analysis. A hybrid inductive-deductive coding approach was used. The research questions and the study's theoretical framework — specifically, the Frustration–Aggression Theory — were the source of the initial codes, and as the data was analysed, more themes arose inductively. After that, the codes were categorised and refined into significant themes such as rising challenges, community grievances, economic repercussions, security measures, and patterns

of oil theft. Descriptive analysis was done on the field observation notes to support or refute the interview results.

6.8. Data Integration Procedure

A convergent mixed-method approach carried out using an organised multi-stage process was used to integrate quantitative and qualitative findings. To maintain the integrity of each data type, both datasets were examined separately in the initial phase. While qualitative analysis created thematic interpretations from field observations and interviews, quantitative analysis offered statistical summaries and trend data.

To enable a methodical comparison of the two datasets, a joint display matrix was created in the second stage. This matrix matched relevant qualitative themes from interviews and field narratives depicting pipeline vandalism and illicit refining operations with quantitative findings, such as the proportion of respondents reporting high levels of oil theft in specific years. The weaving method was used for interpretation in the third step. Concept-by-concept integration of the results from both datasets was done. For instance, statistical data from NUPRC reports were used to show the observed decrease in oil theft after 2022, together with quotes from security officials' interviews that described the timing and severity of enforcement actions.

A triangulation methodology was used in the fourth stage to look for places where the datasets differed and converged. When there were differences between the quantitative and qualitative results, additional interpretation was done to account for the disparity. For instance, several community members observed the persistence of small-scale artisanal refining operations in rural areas, despite government figures showing a decrease in oil theft starting in 2023. Ultimately, insights from both datasets were combined to create meta-inferences. In addition to demonstrating the persistence of low-level oil theft motivated by unresolved socioeconomic grievances in the Niger Delta, this integrated interpretation allowed the study to make more general conclusions about the efficacy of security efforts.

6.9. Validity and Reliability

Three academics with expertise in political science and research methodology reviewed the study instruments to confirm their content validity. By matching interview guides and questionnaire items to the study's theoretical framework — specifically, the Frustration–Aggression Theory — as well as the fundamental concepts of oil theft, economic implications, and socioeconomic marginalisation, construct validity was attained.

Thirty respondents from two communities — Bodo in Rivers State and Oghara in Delta State — who were excluded from the final sample participated in a pilot study to evaluate the quantitative instrument's reliability. Cronbach's Alpha was used to analyse the pilot data, and the results showed a good degree of internal consistency with a coefficient of 0.84. The triangulation of several sources, such as field observations, key informant interviews, and secondary data, as well as the maintenance of an audit trail recording coding practices and analytical choices, improved the qualitative component's reliability.

6.10. Ethical Considerations

The entire study process was conducted with full adherence to ethical standards. The Department of Political Science at Delta State University in Abraka granted approval for the project. All survey

participants and key informants gave their informed consent after being fully informed about the study's objectives, the voluntary nature of their involvement, and their freedom to discontinue participation at any time without repercussions. Key informants were given pseudonyms to safeguard their identities and survey responses were coded to guarantee anonymity and confidentiality.

Only members of the research team had access to the securely stored data gathered during the study. Participants were not given any financial incentives, and in compliance with existing research ethics guidelines, extra caution was used while discussing sensitive subjects pertaining to illicit activities and security operations to reduce any possible hazards (Creswell & Creswell, 2018).

7. Data Presentation, Analysis, and Discussion of Findings

The information gathered for the study on oil theft in the Niger Delta and its economic effects on Nigeria between 2021 and 2025 is presented, examined, and discussed in this section. The presentation combines primary quantitative data from 278 survey participants, secondary data from the Nigerian Upstream Petroleum Regulatory Commission (NUPRC), and qualitative data from 20 key informant interviews (KIIs) and field observations. The research objectives serve as the framework for the analysis, and the Frustration–Aggression Theory is used to discuss the results.

7.1. 1.1 Trends in Crude Oil Theft (2021–2025)

1.1.1 Secondary Data on Volumes of Oil Lost

Table 1.1 presents the annual volumes of crude oil lost to theft between 2021 and 2025 as obtained from NUPRC records. The information gathered for the study on oil theft in the Niger Delta and its economic effects on Nigeria between 2021 and 2025 is presented, examined, and discussed in this section. The presentation combines primary quantitative data from 278 survey participants, secondary data from the Nigerian Upstream Petroleum Regulatory Commission (NUPRC), and qualitative data from 20 key informant interviews (KIIs) and field observations. The research objectives serve as the framework for the analysis, and the Frustration–Aggression Theory is used to discuss the results.

Table 1.1: Annual Volumes of Crude Oil Lost to Theft (2021–2025)

Year	Crude Oil Lost (Million Barrels)	Daily Average (bpd)	Percentage Change (YoY)
2021	37.6	102,900	—
2022	20.9	57,200	–44.4%
2023	4.3	11,900	–79.4%
2024	4.1	11,300	–4.7%
2025 (Jan–Jul)	2.04	9,600	(Projected –15.0%)

Source: NUPRC (as compiled by the authors)

A clear downward trajectory is shown by the data in Table 1.1.

In 2021, theft of crude oil reached a peak of almost 37.6 million barrels, or more than 102,900 barrels per day. Prior to the Petroleum Industry Act's full adoption, there was a period of lax regulatory enforcement, and after perceived shortcomings in the amnesty programme, there was an increase in militant action. Theft volumes fell by 44.4 percent in 2022, marking the start of a notable downward trend. Between 2022 and 2023, losses decreased by over 80 percent to 4.3

million barrels, marking the most significant improvement. The trend stabilised at historically low levels between 2023 and 2025, averaging about 10,000 barrels per day, indicating that anti-theft measures have progressively become entrenched rather than episodic.

1.1.2 Primary Data on Stakeholder Perceptions of Theft Trends

Survey participants were asked to rate the level of oil theft for each year between 2021 and 2025 in order to verify the secondary statistics.

Table 1.2: Respondents' Assessment of Oil Theft Levels (2021–2025)

Response Category	2021	2022	2023	2024	2025
Very High	68%	54%	18%	15%	10%
High	22%	28%	25%	20%	18%
Moderate	7%	12%	38%	40%	42%
Low	3%	6%	19%	25%	30%

Source: Field Survey (2025)

The secondary statistics are substantially supported by the perceptual data. Oil theft was evaluated as either very high or high by 90 percent of respondents in 2021, indicating how serious the situation was at the time. This total percentage fell to 28 percent by 2025, and 72 percent of respondents said that theft was either moderate or low. This change in perception shows that the decrease in oil theft has been noticeable enough to affect community and stakeholder attitudes and supports the validity of the NUPRC statistics.

1.1.3 Economic Value of Crude Oil Lost

Table 1.3 uses the average annual Brent crude oil prices to determine the monetary value of the physical amounts of crude oil lost.

Table 1.3: Estimated Economic Value of Oil Lost (2021–2025)

Year	Estimated Value of Oil Lost (US\$)	Average Brent Crude Price (US\$/bbl)
2021	US\$2.66 billion	US\$70.70
2022	US\$2.11 billion	US\$101.00
2023	US\$355.7 million	US\$82.70
2024	US\$330.3 million	US\$80.60
2025 (Jan–Jul)	US\$146.5 million	US\$71.80

Source: NUPRC and U.S. Energy Information Administration (compiled by the authors)

The volume trends are reflected in the economic implications. Nigeria lost an estimated US\$4.77 billion to crude oil theft in 2021 and 2022 alone. This amounts to a significant portion of the national budget allocated to areas like health and education and constitutes a significant leakage of public funds. However, losses drastically decreased to less than US\$400 million per year starting in 2023. Nigeria's ability to satisfy its OPEC output quota has increased as a result of this drop, which has also benefited government revenue and relieved pressure on foreign exchange reserves.

7.2. 1.2 Perceived Economic Impacts of Oil Theft

Survey respondents were also asked to identify the most significant economic consequences of oil theft in Nigeria.

Table 1.4: Perceived Economic Effects of Oil Theft on Nigeria

Economic Impact	Percentage of Respondents (n = 278)
Government revenue loss	82%
Reduced foreign exchange earnings	76%

Budget deficits	69%
Underfunded social services (health, education)	64%
Increased unemployment	58%
Deterioration of local infrastructure	51%

Source: Field Survey (2025)

According to the results, respondents believe that the most serious macroeconomic effects of oil theft are decreased foreign exchange earnings and lost government revenue. These responses are consistent with secondary data demonstrating the significant financial losses incurred by the Nigerian government. Additionally, 58 percent of respondents linked increased unemployment to oil theft. This implies that while the illicit oil economy generates short-term revenue for a small number of participants, it eventually destabilises the legitimate petroleum industry and deters investment, undermining broader employment opportunities.

7.3. Qualitative Findings: Thematic Analysis of Key Informant Interviews

Twenty purposefully chosen informants, including NUPRC officers, community leaders, security officials, and pipeline monitoring contractors, participated in qualitative interviews that uncovered a number of important themes that explained the rise, fall, and persistence of oil theft.

The peak of oil theft in 2021, which informants described as a time of widespread institutional weakness and mounting community frustration, was one of the most significant themes. The situation was described as chaotic by a NUPRC field officer, who pointed out that there were numerous illegal pipeline connections involving organised networks of young people, former militants, and even some security personnel. The officer observed that because people felt ignored and excluded from the advantages of oil extraction, the phenomenon represented both theft and a kind of protest against the system.

In a similar vein, a community leader from Nembe in Bayelsa State explained that years of economic neglect and environmental deterioration had led to intense animosity among the local populace. Many residents turned to illicit bunkering networks as a way to survive due to the devastation of fishing grounds, contaminated water supplies, and lack of meaningful development. The key tenet of the Frustration–Aggression Theory is clearly reflected in these accounts. Oil theft can be seen in this light as an aggressive reaction to blocked prospects for both environmental security and legitimate economic growth.

The impact of security and regulatory actions implemented between 2022 and 2023 is another significant theme that emerged from the interviews. The importance of private monitoring companies with knowledge of the challenging Niger Delta landscape was highlighted by a pipeline surveillance contractor. The contractor noted that authorities were able to locate and destroy significant illicit bunkering sites in a comparatively short amount of time due to the development of aerial surveillance, drone technology, and community-based intelligence gathering.

The arrest of prominent financiers dramatically changed the dynamics of oil theft, according to a security official involved in anti-bunkering operations. The deterrent effect increased when enforcement actions started focusing on powerful sponsors instead of just low-level participants. During this time, thousands of illicit refining facilities were demolished, and by mid-2023, industrial-scale oil theft had largely ceased.

The interviews did, however, also show that oil theft is still a problem. While large pipelines are now better protected, small-scale artisanal refining is still common, according to a youth leader

from Oghara in Delta State. In order to make ends meet, a large number of unemployed young men continue to operate improvised refinery facilities in isolated locations, processing comparatively small amounts of crude oil.

This change, according to a NUPRC monitoring official, indicates that illegal activity has been displaced rather than eliminated. The underlying socioeconomic grievances that initially drove oil theft have not been addressed, despite the weakening of large organised networks. Because of this, illicit activity has shrunk in scope and become more dispersed, making it more challenging to detect. According to the Frustration–Aggression framework, this pattern exemplifies the idea of displaced aggression. When large-scale theft was curtailed and important pipelines were tightly guarded, individuals redirected their resentment into more localised, smaller-scale criminal activity.

The financial repercussions of oil theft at the local level were another recurrent theme in the interviews. A women’s leader from Bodo, Rivers State, contended that when the government loses revenue due to oil theft, ordinary people eventually suffer from inadequate infrastructure, poor healthcare facilities, and reduced educational opportunities. This view emphasises how cyclical the issue is. The government’s ability to fund development programmes is diminished by revenue losses, which exacerbates community dissatisfaction and may promote ongoing engagement in criminal activity.

7.4. 1.4 Integration of Primary and Secondary Data

There is a significant degree of convergence between the two forms of evidence when quantitative and qualitative data are compared. According to quantitative statistics from the NUPRC, oil theft reached its peak in 2021 and then drastically decreased starting in 2022. This conclusion is corroborated by qualitative interviews that describe the community grievances and institutional weaknesses that defined the 2021 crisis, as well as the tougher enforcement tactics implemented in the years that followed.

A significant nuance is also revealed by the data. Interview responses indicate that the illicit oil industry has evolved rather than vanished, despite quantitative indicators showing that oil theft has decreased to relatively low levels. Smaller, less noticeable, but persistent artisanal activities have supplanted large industrial operations. This discrepancy between qualitative persistence and statistical decline highlights the drawbacks of evaluating complex socioeconomic processes exclusively using quantitative indicators.

8. Discussion of Key Findings

Using the Frustration–Aggression Theory as a guide, this study examined patterns in crude oil theft in the Niger Delta and their economic effects on Nigeria between 2021 and 2025. Numerous significant conclusions are revealed by the data analysis. The Frustration–Aggression framework offers an essential perspective for understanding the shortcomings of security-centric approaches and the continuation of unlawful behaviour, even when the financial benefits of reducing large-scale theft are obvious.

Oil Theft Reached a Critical Peak in 2021, Reflecting Deep-Seated Frustration

One of the most important conclusions is that crude oil theft peaked in 2021. The magnitude of the issue seriously jeopardised national revenue, with over 37.6 million barrels stolen. According to the Frustration–Aggression Theory, this peak can be seen as an aggressive expression of long-

standing frustration rather than just a crime wave. Intense socioeconomic deprivation was brought about by decades of perceived marginalisation, environmental damage from oil extraction, and unequal distribution of oil revenues in the Niger Delta. According to the theory, this frustration led individuals and communities to take aggressive or retaliatory acts, which manifested as the widespread pipeline vandalism and industrial bunkering that defined this era.

Policy and Security Interventions Produced Measurable Results by Targeting Aggressive Acts

According to the study, increased security and policy measures, such as the Petroleum Industry Act (PIA) and the expansion of pipeline surveillance activities, coincided with the dramatic drop in oil theft after 2021. The most obvious and widespread forms of aggression — namely structured theft networks and significant pipeline breaches — were effectively stopped by these efforts. This result shows that, even while the root cause of the issue may be frustration, direct security measures can effectively suppress the violent behaviour that results from it, particularly when that behaviour is highly organised and capital-intensive.

The Incomplete Results of Security Interventions Are Explained by the Theory's Core Tenets

One important conclusion is that oil theft continued at lower levels from 2023 to 2025, despite notable advancements. The inadequate outcomes of security interventions alone can be explained by the Frustration–Aggression Theory. The theory states that while frustration makes people more likely to be aggressive, how that aggression manifests depends on opportunity, situational considerations, and the availability of enabling conditions. The infrastructure that enabled widespread industrial theft was successfully destroyed by security operations. They did not, however, resolve the underlying frustration brought on by unemployment, poverty, and environmental deterioration.

As a result, the aggressive impulse was diverted into smaller-scale, more dispersed behaviours rather than completely eliminated. When options for large-scale aggression are limited, residual theft — especially artisanal refining and small-scale pipeline tapping — represents the ongoing manifestation of unresolved frustration.

The Theory Illuminates the Link Between Socioeconomic Marginalisation and Continued Illicit Activity

The main idea of the Frustration–Aggression Theory is illustrated by the continuation of low-level oil theft, which cannot be exclusively attributed to law enforcement's shortcomings. The framework makes it clear that socioeconomic marginalisation contributes to the continuation of illegal activity. Traditional livelihoods like farming and fishing have been decimated by environmental deterioration brought on by both oil exploration and illicit refining, exacerbating economic hardship in host communities.

Key informant interviews and field observations provide evidence that many residents are forced to engage in residual oil theft as a survival strategy due to significant unemployment and few legitimate economic options. Even while this kind of involvement is illegal, it is nevertheless a predictable reaction for those whose legitimate goals are consistently thwarted. The frustration that pushes people to engage in illegal activities is likely to continue as long as the underlying grievances of poverty, marginalisation, and environmental degradation are not addressed.

Dramatic Improvement from 2023 Indicates a Structural Shift, but Not a Resolution of Grievances

A substantial structural change in the way Nigeria's oil industry is managed is shown in the notable decrease in crude oil theft seen starting in 2023. The Frustration–Aggression framework, however, warns against viewing this development as a final resolution. While the sector was stabilised by institutional reforms, metering audits, and more community involvement, these approaches mainly alleviate the acute symptoms of discontent by reducing opportunities for theft and enhancing accountability. Low-level theft is still prevalent, which suggests that the region's underlying socioeconomic and environmental problems have not yet been addressed. The study holds that the conditions that lead to aggression will persist unless these fundamental problems are resolved through inclusive development policies, environmental remediation, and equitable sharing of oil revenues.

Oil Theft Had Severe Economic Consequences, Creating a Cycle of Frustration

The study also confirms the serious economic repercussions of crude oil theft, especially the estimated US\$5.6 billion in lost revenue. This result emphasises how cyclical the issue is. According to multiple key informants, these losses caused fiscal difficulties that led to lower government funding and delays in the execution of infrastructure projects throughout Nigeria. The diversion of resources from public goods exacerbates perceptions of injustice and deprivation for Niger Delta populations that already consider themselves to be marginalised. As a result, oil theft both causes and exacerbates regional frustration, resulting in a vicious cycle whereby financial losses exacerbate the grievances that initially spurred illegal activity. The difficulties of depending only on enforcement-based tactics are highlighted by this dynamic.

Sustained Reduction Improved Fiscal Outlook, but Long-Term Stability Requires Addressing Underlying Frustrations

Lastly, investor confidence in the oil industry has increased and Nigeria's fiscal outlook has improved due to the persistent decline in oil theft. Despite the importance of this progress, the Frustration–Aggression Theory contends that if the underlying causes of frustration are not addressed, the current stability may be fragile. Large-scale theft is suppressed by increased security and surveillance, which is reflected in the current state of affairs. However, more extensive interventions that address the socioeconomic and environmental issues that first caused frustration would be necessary for long-term stability in the Niger Delta and the preservation of Nigeria's oil resources. In the event that enforcement efforts falter or new grievances emerge, significant investments in community development, environmental restoration, economic opportunities, and equitable resource governance will be required to prevent the resurgence of retaliatory responses.

9. Conclusion

This study used the Frustration–Aggression Theory to investigate the economic effects of crude oil theft in the Niger Delta between 2021 and 2025. According to the findings, oil theft reached its highest point in 2021, when around 37.6 million barrels of crude oil valued at over US\$2.66 billion were lost. This was mostly caused by poverty, environmental deterioration, political marginalisation, and the unequal distribution of oil revenues in the area. Crude oil theft drastically decreased starting in 2022, dropping by roughly 94 percent to about 9,600 barrels per day by mid-2025 as a result of improved security agency coordination, private pipeline surveillance contracts, and reforms brought about by the Petroleum Industry Act (2021). Nigeria's annual revenue losses thus decreased from more than US\$2 billion in 2021–2022 to less than US\$400 million after 2023, enhancing fiscal stability and boosting investor confidence in the oil industry. Despite the decrease in large-scale organised bunkering, oil theft still occurs in the form of small-scale artisanal

refining. According to the study, this persistence is due to unresolved socioeconomic issues like poverty, unemployment, and environmental harm, which sustain frustration and encourage unlawful activity. It concludes that although security measures have reduced oil theft, long-term solutions require addressing the underlying causes through community development, environmental restoration, transparent governance, and economic diversification in the Niger Delta.

10. Recommendations

In order to maintain the decrease in crude oil theft in the Niger Delta and address its root causes, the study recommends a number of institutional and policy initiatives. In order to guarantee accountability, transparency, and precise monitoring throughout the oil value chain, it places a strong emphasis on strengthening the Nigerian Upstream Petroleum Regulatory Commission and fully implementing the Petroleum Industry Act's regulatory requirements. To prevent loopholes that promote oil theft, regular audits of production, transportation, and export data are required, as is the expansion of host community compliance programmes.

In order to enhance pipeline security and promptly identify breaches, the study also emphasises the necessity of expanding cutting-edge surveillance technologies like drones, satellite imaging, leak detection sensors, and real-time monitoring systems. Security agencies and commercial surveillance contractors must continue to work together, and operations must continue to be transparent and intelligence-driven. Long-term success depends on engagement with host communities. Local involvement in oil theft can be decreased by effectively implementing host community development trusts to provide infrastructure, employment, healthcare, and education. Along with more robust anti-corruption measures in the oil industry and security services, it is also recommended to strengthen law enforcement through faster prosecution, specialised courts for crude oil theft, and stringent enforcement of asset forfeiture laws.

The study also emphasises the significance of environmental restoration in the Niger Delta, which includes the full implementation of environmental remediation programmes as well as soil cleanup, water purification, and mangrove restoration. To establish alternative livelihoods and reduce reliance on illicit oil activities, economic diversification through investments in manufacturing, small enterprises, agriculture, fisheries, and renewable energy is recommended. The study concludes by advocating for inclusive governance, long-term development projects that address historical grievances and marginalisation in the Niger Delta, and more regional and international cooperation to stop cross-border crude oil smuggling. To support evidence-based measures and maintain the progress accomplished between 2021 and 2025, ongoing research and trend monitoring of oil theft are also crucial.

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