

Impact of Natural Resource Governance on Socio-Economic Development in Niger Delta's Akwa Ibom State of Nigeria

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ABSTRACT

This study specifically assessed the impact of natural resource governance on socio-economic development in Niger Delta's Akwa Ibom State. The investigation focused on examining the relationships between natural resource governance and healthcare services, road infrastructure, and educational facilities respectively in selected oil-producing communities in the area of study. The Resource Curse Theory was adopted as the theoretical framework for the study. A survey research design was employed, while data were collected through structured questionnaire administered to 400 respondents selected from six oil-producing local government areas in Akwa Ibom State. Data obtained were analyzed using descriptive statistics and Chi-square statistical technique at 0.05 level of significance. The findings revealed that natural resource governance had significant relationships with access to healthcare services, road infrastructure development, and provision of educational facilities in Akwa Ibom State. The study found that despite substantial oil revenues generated from the region, poor governance practices, corruption, weak institutional frameworks, and inadequate accountability had hindered effective socio-economic development in many oil-producing communities. The study concluded that effective natural resource governance remained essential for sustainable development in the Niger Delta region. The study therefore recommended improved transparency, accountability, community participation, and increased investment in healthcare, road infrastructure, and educational facilities in oil-producing areas.

Keywords: Natural Resource Governance, Socio-Economic Development, Healthcare Services, Road Infrastructure, Educational Facilities, Niger Delta, Akwa Ibom State.

BACKGROUND TO THE STUDY

Natural resources have continued to play significant roles in the economic growth and development of nations across the world. Countries endowed with abundant natural resources such as crude oil, natural gas, minerals, forests, and water resources often depend on them for revenue generation, industrialization, employment creation, and infrastructural development (Tanne et al., 2025). Natural resources remain a vital component of national wealth and a key driver of socio-economic transformation globally. Countries with abundant natural resources often possess enormous opportunities for economic advancement when such resources are efficiently and transparently managed (Auty, 1993; Sachs & Warner, 2001). In Nigeria, crude oil remains the major source of foreign exchange earnings and government revenue, contributing about 90% of export earnings and over 70% of government revenue (Central Bank of Nigeria [CBN], 2023). The Niger Delta region, comprising states such as Akwa Ibom, Delta, Rivers, and Bayelsa, serves as the center of Nigeria's oil and gas production activities and remains the economic lifeline of the country (Olawale and Sun, 2020).

Despite the enormous natural resource wealth of the Niger Delta, the region still experiences widespread poverty, unemployment, environmental degradation, and inadequate infrastructure, thereby raising concerns about the effectiveness of natural resource governance in promoting socio-economic development (Adebayo, 2021). The region has remained one of the most underdeveloped areas in Nigeria despite decades of oil exploration and huge revenue generation (UNDP, 2021; Ibaba, 2020). This paradox is commonly referred to as the "resource curse," a situation where countries or regions rich in natural resources experience slower economic growth, institutional weaknesses, and poor developmental outcomes compared to resource-poor

regions (Sachs & Warner, 2001). According to Sala-i-Martin and Subramanian (2013), the major causes of the resource curse include corruption, poor governance, weak institutions, and inequitable distribution of resource benefits.

Natural resource governance refers to the processes, institutions, laws, and policies through which natural resources are managed and utilized for the benefit of society. Effective natural resource governance involves accountability, transparency, community participation, environmental sustainability, and equitable distribution of resource benefits (Eke & Augustine, 2022). According to Okon and Udo (2021), good governance in the management of natural resources enhances economic growth, social stability, environmental protection, and sustainable development. Similarly, the Organisation for Economic Co-operation and Development (OECD, 2020) described natural resource governance as the framework of transparent policies, accountable institutions, and participatory decision-making mechanisms established to ensure sustainable utilization of natural resources for economic and social development.

However, in many developing countries, weak institutional frameworks, corruption, poor policy implementation, and inadequate regulatory enforcement have limited the ability of natural resources to translate into meaningful socio-economic development (Ikelegbe, 2020). In the absence of effective governance structures, resource wealth often leads to environmental degradation, social conflicts, rent-seeking behavior, and public distrust in government institutions (World Bank, 2019). These governance failures have negatively affected the provision of essential social amenities such as healthcare services, road infrastructure, and educational facilities in many oil-producing communities. The Nigerian government has introduced several policy frameworks and institutional mechanisms to address governance challenges in the resource sector. These include the establishment of the Niger Delta Development Commission (NDDC), the Ministry of Niger Delta Affairs, and the implementation of the 13% derivation principle as provided in the 1999 Constitution (Amadi and Ekekwe, 2014). These initiatives were designed to promote development and improve living conditions in oil-producing communities. Nevertheless, the Niger Delta region continues to witness severe developmental challenges, with many communities lacking access to basic infrastructure, quality healthcare services, clean water, and educational facilities (Akpan & Chukwurah, 2022).

Akwa Ibom State, one of the major oil-producing states in the Niger Delta region and currently the highest oil-producing state in Nigeria, possesses abundant crude oil and natural gas resources which contribute substantially to Nigeria's economy. The state receives significant allocations from oil derivation funds and other intervention programmes established to support development in oil-producing areas (Essien, 2021). Despite these benefits, many communities in Akwa Ibom State still experience poor road networks, inadequate healthcare facilities, unemployment, environmental pollution, poor educational facilities, and rural poverty (Akpan & George, 2020). According to Ibok (2021), the persistence of poverty and inequality amid resource abundance in Akwa Ibom State demonstrates the need to critically examine the effectiveness of governance practices in resource management.

The importance of effective natural resource governance in promoting socio-economic development has become increasingly recognized in recent years. Good governance practices in the management of natural resources can improve revenue utilization, strengthen public institutions, enhance service delivery, and promote environmental sustainability (Olaifa & Adewumi, 2023). According to Ekanem and Ibok (2024), transparent and accountable management of oil revenues can facilitate investments in critical sectors such as education, healthcare, transportation, agriculture, and housing, thereby improving the living standards of the people. Conversely, poor governance systems often result in corruption, resource mismanagement, environmental injustice, and socio-economic inequality. It is against this backdrop that this study examines the role of effective natural resource governance in promoting socio-economic development in the Niger Delta, with particular focus on Akwa Ibom State.

Statement of the Problem

The Niger Delta region of Nigeria is richly endowed with abundant crude oil and natural gas resources that contribute significantly to the national economy. Akwa Ibom State, as one of the leading oil-producing states in the region, generates substantial revenues through petroleum exploration and exportation activities. Despite

this enormous natural resource wealth, many communities in the state still suffer from inadequate socio-economic development, particularly in the areas of healthcare services, road infrastructure, and educational facilities.

Over the years, huge revenues have accrued to both the federal and state governments from oil resources in the Niger Delta. Several intervention agencies and development programmes such as the Niger Delta Development Commission (NDDC) and the Ministry of Niger Delta Affairs were established to improve the living conditions of the people and provide essential social amenities. However, many rural and urban communities in Akwa Ibom State continue to experience poor healthcare delivery, inadequate hospitals and medical equipment, shortage of healthcare personnel, and limited access to quality healthcare services. In addition, road infrastructure in many parts of the state remains inadequate despite the availability of oil revenues. Several communities lack accessible and well-maintained roads, resulting in transportation difficulties, reduced commercial activities, and limited access to markets, schools, and healthcare facilities. Poor road networks have also negatively affected rural development and socio-economic integration within the state.

Educational facilities in many oil-producing communities also remain inadequate and poorly maintained. Many schools suffer from dilapidated buildings, insufficient learning materials, inadequate classroom spaces, and shortage of qualified teachers. This has adversely affected the quality of education and human capital development in the state. The inability of natural resource wealth to significantly improve educational infrastructure raises concerns about the effectiveness of governance and resource management in Akwa Ibom State. One of the major factors responsible for these developmental challenges is ineffective natural resource governance. Weak institutional frameworks, corruption, poor accountability, lack of transparency, and ineffective implementation of development policies have hindered the proper utilization of oil revenues for socio-economic development. Consequently, many development projects relating to healthcare, roads, and education are either abandoned, poorly executed, or unevenly distributed. Given the foregoing, this study seeks to interrogate the link between natural resource governance and socio-economic development in Akwa Ibom State.

Research Objectives

The general objective of this study is to assess the impact of natural resource governance on socio-economic development in the Niger Delta with particular focus on Akwa Ibom State. The specific objectives of the study are to:

- i. examine the influence of natural resource governance on healthcare services in Akwa Ibom State;
- ii. ascertain the effect of natural resource governance on road infrastructure development in Akwa Ibom State;
- iii. determine the relationship between natural resource governance and the provision of educational facilities in Akwa Ibom State;

Research Questions

The following research questions shall guide the study:

- i. Does natural resource governance influence healthcare services in Akwa Ibom State?
- ii. Does natural resource governance affect road infrastructure development in Akwa Ibom State?
- iii. What is the relationship between natural resource governance and the provision of educational facilities in Akwa Ibom State?

Hypotheses

The following null hypotheses have been formulated to guide the study:

- i. There is no significant relationship between natural resource governance and access to healthcare in host communities of Akwa Ibom State.
- ii. Natural resource governance has no significant effect on road infrastructure development in Akwa Ibom State.
- iii. There is no significant relationship between natural resource governance and the provision of educational facilities in Akwa Ibom State.

Concept of Natural Resource Governance

Natural resource governance refers to the institutional frameworks, policies, laws, and decision-making processes through which natural resources such as oil and gas are managed, allocated, and distributed for societal benefit. It emphasizes how governments, regulatory agencies, and other stakeholders ensure transparency, accountability, equity, and sustainability in the exploitation of natural resources. Effective natural resource governance ensures that resource revenues are efficiently converted into public goods such as healthcare services, road infrastructure, and educational facilities, thereby promoting sustainable development (Olaifa & Adewumi, 2023).

According to Eke and Augustine (2022), natural resource governance involves not only resource extraction and revenue generation but also the equitable distribution of benefits among stakeholders, including host communities. In resource-rich regions like the Niger Delta, governance structures determine whether oil wealth translates into development or leads to the “resource curse” phenomenon characterized by poverty, environmental degradation, and underdevelopment (Ikelegbe, 2020). Weak governance systems often result in corruption, mismanagement of funds, lack of transparency, and poor accountability, which negatively affect development outcomes (Adebayo, 2021). Furthermore, effective governance requires strong institutions capable of enforcing environmental regulations, ensuring fair revenue allocation, and promoting community participation in decision-making processes. According to Udo and Etim (2023), inclusive governance systems that involve host communities enhance trust, reduce conflict, and improve the delivery of development projects in oil-producing areas.

Concept of Socio-Economic Development

Socio-economic development refers to the process of improving the economic and social well-being of individuals and communities through sustainable growth, equitable distribution of resources, and improved access to essential services. It involves both economic advancement, such as income generation, employment opportunities, and infrastructure development, and social improvements such as healthcare, education, and overall quality of life (Akpan & George, 2020).

In this study, socio-economic development is measured using three key indicators: healthcare services, road infrastructure, and educational facilities. Healthcare services refer to the availability, accessibility, and quality of medical facilities, personnel, and equipment necessary for maintaining public health. Road infrastructure represents the physical transportation network that facilitates movement, trade, and access to essential services. Educational facilities refer to schools, classrooms, learning materials and qualified teachers required for effective human capital development. According to Ekanem and Ibok (2024), socio-economic development in oil-producing regions is highly dependent on how effectively natural resource revenues are managed and invested in critical sectors. Poor governance often leads to inadequate healthcare services, dilapidated road networks, and insufficient educational infrastructure despite significant oil revenues. Conversely, effective governance enhances service delivery, reduces poverty, and improves living standards.

Similarly, Aroh et al. (2021) noted that environmental degradation and poor resource management in the Niger Delta have significantly hindered socio-economic development by affecting livelihoods, particularly in farming and fishing communities. Thus, sustainable socio-economic development can only be achieved when natural resource governance is transparent, accountable, and focused on equitable development outcomes.

Theoretical Framework

This study is anchored on the Resource Curse Theory, which explains the paradox where countries or regions endowed with abundant natural resources often experience slower economic growth, weak institutions, and poor development outcomes compared to less resource-endowed regions. The theory suggests that rather than promoting prosperity, excessive dependence on natural resources—particularly oil and gas—can lead to corruption, conflict, poor governance, and economic instability (Ikelegbe, 2020).

The Resource Curse Theory was popularized by scholars such as Auty (1993) and later expanded by Sachs and Warner (2001), who observed that resource-rich economies often underperform due to mismanagement of resource revenues and neglect of other productive sectors. In the context of developing countries like Nigeria, the theory is highly relevant because it explains why regions such as the Niger Delta, despite their immense oil wealth, continue to experience underdevelopment, environmental degradation, and socio-economic inequality (Adebayo, 2021). In Akwa Ibom State, the application of the Resource Curse Theory is evident in the persistent gap between oil revenue generation and actual development outcomes. Despite significant earnings from crude oil and gas, many communities still lack adequate healthcare services, functional road infrastructure, and well-equipped educational facilities. This situation is often linked to weak governance structures, corruption, lack of transparency, and poor accountability in the management of natural resource revenues (Olaifa & Adewumi, 2023).

Furthermore, the theory highlights the “Dutch Disease” effect, where excessive reliance on oil revenue leads to neglect of other sectors such as agriculture, manufacturing, and education. In the Niger Delta region, this has contributed to unemployment, poverty, and limited economic diversification. According to Eke and Augustine (2022), weak institutional capacity and poor policy implementation have further worsened the development challenges associated with resource dependency. However, the Resource Curse Theory also implies that the negative effects of resource abundance are not inevitable. Countries or regions that adopt strong governance frameworks characterized by transparency, accountability, effective institutions, and community participation can convert resource wealth into sustainable development outcomes. This is particularly relevant to the present study, which examines how effective natural resource governance can mitigate the resource curse and promote socio-economic development in Akwa Ibom State. Therefore, the theory provides a strong analytical foundation for this study as it explains the relationship between natural resource governance and socio-economic development, particularly in relation to healthcare services, road infrastructure, and educational facilities in oil-producing communities.

Empirical Review

Empirical studies on natural resource governance and socio-economic development have been widely conducted, particularly in resource-rich regions such as the Niger Delta. These studies provide evidence on how governance structures influence development outcomes in sectors such as healthcare services, road infrastructure, and educational facilities. Udo and Effiong (2020), in their study titled Resource Governance and Economic Diversification in Akwa Ibom State, used both qualitative interviews and secondary data analysis to explore how governance practices affect socio-economic diversification. They found that poor governance and overdependence on oil revenue discourage investment in agriculture and small-scale industries. The study suggested that effective governance frameworks, transparency in resource allocation, and local participation could stimulate inclusive economic growth in oil-rich communities.

Ebeku (2021) examined Oil Resource Management and Human Development in the Niger Delta through a survey of 500 respondents across Rivers, Bayelsa, and Akwa Ibom States. The study employed regression analysis to assess the impact of oil revenue management on indicators such as education, healthcare, and income levels. Results showed a statistically significant but negative relationship between oil resource dependence and human development due to mismanagement and environmental degradation. The study recommended strengthening local institutions and enhancing participatory governance to ensure that oil revenues translate into tangible development outcomes.

Ibok and Akpan (2021) explored Environmental Governance and Livelihood Sustainability in the Niger Delta Region using field surveys in Akwa Ibom and Delta States. Their findings showed that communities with participatory environmental governance structures—such as community-based monitoring and inclusion in policy dialogues—experienced more sustainable livelihood outcomes and less conflict. This underscores the importance of integrating local communities into governance and decision-making processes related to resource management.

Adewuyi and Olowookere (2022) conducted an empirical study on Natural Resource Governance and Sustainable Development in Nigeria, using data from the Central Bank of Nigeria (CBN) and the National Bureau of Statistics (NBS). Their findings revealed that states with higher transparency and accountability in resource management recorded better socio-economic outcomes, including higher employment rates, improved infrastructure, and reduced poverty levels. The study concluded that weak governance structures and corruption remain the main impediments to the positive impact of resource wealth on development in the Niger Delta region. Nwankwo and Okereke (2022) conducted a time-series analysis of Oil Revenue and Socio-Economic Development in Nigeria (1990–2020). The study found that fluctuations in oil revenue significantly affect social expenditure, with poor fiscal governance leading to inconsistent investments in education and health. The authors recommended adopting fiscal discipline and long-term development planning to stabilize socio-economic growth despite revenue volatility.

Olawale and Oke (2023) assessed “The Role of Governance Quality in Natural Resource Utilization and Socio-Economic Development in Nigeria”, using a panel data set covering 2000–2022 for 10 oil-producing states. Employing a fixed-effects regression model, the study found that governance quality indicators—such as government effectiveness, control of corruption and regulatory quality—had a positive and significant impact on socio-economic development indices, including GDP per capita and human development index (HDI). The study highlighted that states with stronger institutional capacity demonstrated higher developmental outcomes.

Essien and Etim (2023) analyzed “Natural Resource Management and Poverty Reduction in Akwa Ibom State” using a mixed-methods approach. Their study revealed that while the state receives significant federal allocations from oil revenue, poor implementation of development projects, weak accountability systems, and political patronage hinder poverty reduction. The authors concluded that strengthening natural resource governance institutions is crucial for achieving sustainable socio-economic development in Akwa Ibom State and the wider Niger Delta.

Olaifa and Adewumi (2023) examined transparency and accountability in oil revenue management in Nigeria and found that weak governance practices significantly reduce the effectiveness of public spending on social infrastructure. Their study revealed that mismanagement of oil revenues contributes to poor service delivery in key sectors such as health and education, thereby limiting socio-economic development in oil-producing communities.

Ekanem and Ibok (2024) also investigated socio-economic development in oil-producing regions and found that there is a strong relationship between resource governance and human capital development. Their study revealed that improved governance leads to better investment in education, healthcare, and transportation systems, which in turn enhances living standards.

Natural Resource Governance in Niger Delta’s Akwa Ibom State: Overview of key issues

Despite its contributions to revenue generation and socio-economic development, Natural resource governance in the Niger Delta generally and Akwa Ibom State particularly is characterized by several structural and operational flaws that undermine the effective conversion of natural resource capital into sustainable development outcomes. Issues such as corruption, environmental degradation, ineffectual regulation, over-centralization of resource control, and lack of meaningful local citizens’ participation continue to limit the positive developmental impact of natural resource wealth in the state. These issues are briefly discussed subsequently.

- i. **Weak Institutional Transparency and Corruption:** One major weakness of natural resource governance in Akwa Ibom State is the persistent issue of inadequate transparency and pervasive corruption in revenue management. Although substantial oil revenue is generated and allocated to the state through the 13% oil derivation provision, accountability mechanisms are often weak, leading to mismanagement and diversion of public funds. This reduces the developmental impact of oil wealth on citizens. Babalola (2014) opines that the underdevelopment and poverty of Niger Delta is deep-rooted not only in federal neglect but also systemic corruption among the political elites in the region. Studies (such as Omotola 2009; Alakwe, 2024; & Dibia, 2024) indicate that oil-rich Niger Delta frequently suffers from governance inefficiencies linked to corruption in public financial management and administration of development funds. Akwa Ibom state also exemplifies the scenario described above.
- ii. **Environmental Degradation and Ecosystem Damage:** Oil exploration activities have occasioned severe environmental degradation due principally to oil spills, gas flaring, and land contamination. In Akwa Ibom oil communities such as Ibeno and Eket, these environmental challenges have destroyed farmlands and polluted water bodies, reducing biodiversity and threatening livelihoods such as farming and fishing. The UNEP (2011) report highlights how oil pollution in the Niger Delta has long-term ecological and economic consequences.
- iii. **Weak Enforcement of Environmental Regulations:** Despite the existence of regulatory bodies such as National Oil Spill Detection and Response Agency (NOSDRA) and the Nigerian Upstream Petroleum Regulatory Commission (NUPRC), enforcement of environmental laws and regulations remain weak. Oil companies are often not adequately penalized for environmental violations, and spill response mechanisms are slow and ineffective. Poor enforcement of environmental regulations undermines sustainable resource governance and increases environmental vulnerability (Ibaba, 2020).
- iv. **Over-centralization of Resource Control:** The Nigerian fiscal system centralizes control of oil resources at the federal level, limiting the autonomy of oil-producing states like Akwa Ibom. While states receive allocations through the federation account, they lack direct control over resource extraction and revenue generation. This creates dependency and weakens local development planning. It has been argued that such over-centralization contributes to unequal and undesirable development outcomes in the Niger Delta (Sala-i-Martin & Subramanian, 2013).
- v. **Lack of Participatory Governance and Citizen Engagement:** Development planning and implementation in Akwa Ibom state, as in other states of the Niger Delta, is often made at the top without carrying the people at the grassroots along, contrary to the dictates of the participatory approach to development that highlights development as being pro-people. As such, developmental interventions and outcomes appear to suffer from elite capture as it mostly satisfy the interests and values of the elites (high society) and ignoring or neglecting the people at the middle and bottom classes (low society) (Dibia, 2024). As Tom and Edet (2021: 277) admonished: “Government should also demonstrate commitment to human rights and sustainable development principles and maintain a respectful dialogue with communities”.

MATERIALS AND METHODS

Research Design

This study adopted the survey research design. The survey design was considered appropriate because it enabled the researcher to obtain relevant information from respondents regarding the role of effective natural resource governance in promoting socio-economic development in Akwa Ibom State. The design also provided an opportunity to examine the relationship between natural resource governance and socio-economic indicators such as healthcare services, road infrastructure, and educational facilities.

The study was conducted in Akwa Ibom State, Nigeria. Akwa Ibom State is located in the South-South geopolitical zone and forms part of the Niger Delta region. The state is one of the major oil-producing states in Nigeria and possesses abundant crude oil and natural gas resources. Akwa Ibom State has thirty-one (31) local

government areas and is characterized by both urban and rural communities. Despite the enormous oil wealth generated from the state, several communities still experience inadequate healthcare services, poor road infrastructure, environmental degradation, unemployment, and insufficient educational facilities.

Population of the Study

The population of this study was drawn from six selected oil-producing local government areas in Akwa Ibom State, namely: Eket, Ikot Abasi, Mbo, Ibeno, Eastern Obolo, and Esit-Eket. These local government areas were selected because they are among the major oil-producing communities in the state and have experienced the direct effects of oil exploration activities and natural resource governance practices. According to [City Population](#) (2025), the total population of the selected local government areas is 773,100. The population distribution is as follows: Eket Local Government Area has a population of 220,600; Esit-Eket has 80,900; Mbo has 130,400; Ibeno has 95,500; Eastern Obolo has 76,500; while Ikot Abasi has a population of 169,200.

The choice of these local government areas provided a suitable framework for investigating the role of effective natural resource governance in promoting socio-economic development in Akwa Ibom State. The selected areas are characterized by active oil exploration activities and varying levels of socio-economic development challenges relating to healthcare services, road infrastructure, and educational facilities. The population therefore provided adequate information and diverse perspectives necessary for addressing the research objectives and questions of the study.

Sample Size and Sampling Technique

Sample size refers to a subset of the total population selected for participation in a study. In determining the sample size for this study, the researcher adopted Taro Yamane’s formula for finite populations. The formula is expressed as:

$$n = \frac{N}{1 + N(e)^2}$$

Given:

Total population size (N) = 773,100

Desired margin of error (e) = 0.05 (assuming a margin of error of 5%)

Now, the researcher plugs these values into the formula:

Where: N = 773,100

e = 0.05

$$n = \frac{773100}{1 + (773100 \times 0.05^2)}$$

$$n = \frac{773100}{1 + (773100 \times 0.0025)}$$

$$n = \frac{773100}{1 + 1932.75}$$

$$\underline{\underline{773100}}$$

1933.755

n = 399.79

Rounding up, the sample size is 400 respondents.

The study utilized both primary and secondary sources of data collection. Primary data were obtained through the administration of structured questionnaires and oral interviews with respondents in selected communities within Akwa Ibom State. Secondary data were obtained from textbooks, journal articles, government publications, conference papers, newspapers, internet materials, and reports relating to natural resource governance and socio-economic development in the Niger Delta region.

The major instrument used for data collection was a structured questionnaire designed by the researcher. The questionnaire consisted of two sections. Section A focused on demographic information of respondents, while Section B contained questions relating to healthcare services, road infrastructure, educational facilities, and natural resource governance in Akwa Ibom State. The questionnaire items were structured using a four-point Likert scale ranging from Strongly Agree (SA), Agree (A), Disagree (D), and Strongly Disagree (SD).

Validity and Reliability of Instrument

The validity of the instrument was determined through face and content validity. Experts in Public Administration and research methodology examined the questionnaire to ensure that the items adequately addressed the objectives of the study. Corrections and suggestions provided by the experts were incorporated into the final draft of the instrument. The reliability of the instrument was tested using the test-retest method. Copies of the questionnaire were administered to selected respondents outside the study area, and the responses obtained from the two tests were correlated using Pearson Product Moment Correlation. A reliability coefficient of 0.82 was obtained, indicating that the instrument was reliable for the study.

Method of Data Analysis

Data collected from the field were analyzed using descriptive and inferential statistical tools. Descriptive statistics such as frequency tables, percentages, and mean scores were used to analyze the research questions, while inferential statistics such as Chi-square was used to test the hypotheses at 0.05 level of significance.

RESULTS

The results of the study are presented based on responses from 400 respondents drawn from the selected oil-producing local government areas in Akwa Ibom State.

Table 1: Respondents’ Demographic Characteristics (n = 400)

Variable	Category	Frequency	Percentage (%)
Gender	Male	230	57.5
	Female	170	42.5
Age	18–30 years	120	30.0
	31–45 years	160	40.0
	46 years and above	120	30.0
Occupation	Civil servants	110	27.5

	Farmers	90	22.5
	Traders	100	25.0
	Students/Youth	100	25.0

Testing of Hypotheses

The Chi-square formula as:

$$X^2 = \sum \frac{(O - E)^2}{E}$$

Where:

O = observed frequency

E = Expected frequency

Level of significance = 0.05

Null Hypotheses 1: There is no significant relationship between natural resource governance and access to healthcare in Akwa Ibom State

Table 2: Effect of Natural Resource Governance on Healthcare Services (n = 400)

S/N	Questions	SA	A	SD	D
1	The lack of transparency in natural resource governance affects the quality of healthcare services provided in my community	99	129	87	85
2	The absence of accountability in natural resource governance negatively impacts access to healthcare services in host communities	129	111	60	100
3	Revenue from natural resources is adequately allocated to support healthcare services in my community	60	99	129	112
4	Healthcare workers in my community are well-trained and supported because of revenue from natural resources	99	87	85	129
5	Mismanagement of funds reduces the availability of healthcare facilities in host communities	112	129	99	60

Table 3: Calculating Expected Frequencies (E)

S/N	SA	A	SD	D	Total	X ² Cal.	X ² Tab.
1	106	112.6	90.4	91	400		
2	106	112.6	90.4	91	400		
3	106	112.6	90.4	91	400		
4	106	112.6	90.4	91	400		

5	106	112.6	90.4	91	400		
Total	530	563	452	455	2000	97.698	21.03

Table 4: Calculation of X² for Each Cell

S/N	SA	A	SD	D
1	$(99-106)^2 = 0.46$ 106	$(129-112.6)^2 = 2.61$ 112.6	$(87-90.4)^2 = 0.13$ 90.4	$(85-91)^2 = 0.40$ 91
2	$(129-106)^2 = 4.74$ 106	$(111-112.6)^2 = 0.02$ 112.6	$(60-90.4)^2 = 10.45$ 90.4	$(100-91)^2 = 0.89$ 91
3	$(60-106)^2 = 19.47$ 106	$(99-112.6)^2 = 1.65$ 112.6	$(129-90.4)^2 = 15.36$ 90.4	$(112-91)^2 = 4.53$ 91
4	$(99-106)^2 = 0.46$ 106	$(87-112.6)^2 = 5.88$ 112.6	$(85-90.4)^2 = 0.32$ 90.4	$(129-91)^2 = 16.65$ 91
5	$(112-106)^2 = 0.34$ 106	$(129-112.6)^2 = 2.61$ 112.6	$(99-90.4)^2 = 0.82$ 90.4	$(60-91)^2 = 10.33$ 91

$$X^2 = 0.462 + 2.606 + 0.128 + 0.396 + 4.737 + 0.023 + 10.458 + 0.889 + 19.472 + 1.646 + 15.361 + 4.527 + 0.462 + 5.883 + 0.323 + 16.653 + 0.340 + 2.606 + 0.817 + 10.329 = 97.698$$

The result of the computation is summarized as follows:

- i. Calculated Chi-square (X^2_{cal}) = 97.698
- ii. Degrees of Freedom (DF) = (Rows - 1) × (Columns - 1) = (5 - 1) × (4 - 1) = 12
- iii. Level of significance (α) = 0.05
- iv. Critical Chi-square value (X^2_{tab}) = 21.03

Decision Rule

The decision rule for Chi-square analysis states that:

- i. If the calculated Chi-square value is greater than the tabulated (critical) value, the null hypothesis should be rejected.
- ii. If the calculated Chi-square value is less than or equal to the tabulated value, the null hypothesis should be accepted.

In this study, the calculated Chi-square value (97.698) is significantly higher than the critical Chi-square value (21.03). Since $97.698 > 21.03$, the result falls within the rejection region. Based on the result of the analysis, the null hypothesis is rejected. This implies that there is a statistically significant relationship between natural resource governance and access to healthcare services in Akwa Ibom State. In practical terms, the finding suggests that the manner in which natural resources are managed, allocated, and governed has a direct and

measurable influence on the availability, quality, and accessibility of healthcare services in the study area. The implication of this result is that improved transparency, accountability, and efficiency in natural resource governance could enhance healthcare delivery systems in oil-producing communities. Conversely, weak governance structures may continue to limit access to adequate healthcare services despite the substantial oil revenue generated in the region.

Null Hypothesis 2: Natural resource governance has no significant effect on road infrastructure development in Akwa Ibom State

Table 5: Impact of natural resource governance on road infrastructure in Akwa Ibom State

S/N	Items	SA	A	SD	D	Total
1	Poor governance of natural resources hinders the development of road infrastructure in host communities	114	109	87	90	400
2	Oil revenue improves road construction in communities	109	90	114	87	400
3	The condition of roads in my community reflects proper management of natural resource revenues	77	98	123	102	400
4	Funds from natural resource exploitation are adequately allocated to improve road infrastructure in this area.	102	77	98	123	400
5	Most rural roads are in good condition due to governance	111	132	77	80	400
	Grand Total					2000

Table 6: Calculating Expected Frequencies (E)

S/N	SA	A	SD	D	Total	X ² Cal.	X ² Tab.
1	102.6	101.2	99.8	96.4	400		
2	102.6	101.2	99.8	96.4	400		
3	102.6	101.2	99.8	96.4	400		
4	102.6	101.2	99.8	96.4	400		
5	102.6	101.2	99.8	96.4	400		
	513	506	499	482	2000	51.419	21.03

Table 7: Calculation of X² for Each Cell

S/N	SA	A	SD	D
1	$(114-102.6)^2 = .288$ 102.6	$(109-101.2)^2 = 0.601$ 101.2	$(87-99.8)^2 = 1.66$ 99.8	$(90-96.4)^2 = 0.43$ 96.4
2	$(109-102.6)^2 = 0.34$ 102.6	$(90-101.2)^2 = 1.24$ 101.2	$(114-99.8)^2 = 2.01$ 99.8	$(87-96.4)^2 = 0.92$ 96.4

3	$(77 - 102.6)^2 = 6.51$ 102.6	$(98 - 101.2)^2 = 0.10$ 101.2	$(123 - 99.8)^2 = 5.37$ 99.8	$(102 - 96.4)^2 = 0.33$ 96.4
4	$(102 - 102.6)^2 = 0.04$ 102.6	$(77 - 101.2)^2 = 5.83$ 101.2	$(98 - 99.8)^2 = 0.03$ 99.8	$(123 - 96.4)^2 = 6.67$ 96.4
5	$(111 - 102.6)^2 = 0.68$ 102.6	$(132 - 101.2)^2 = 9.37$ 101.2	$(77 - 99.8)^2 = 5.27$ 99.8	$(80 - 96.4)^2 = 2.73$ 96.4

$$X^2 = 21.288 + 0.601 + 1.656 + 0.427 + 0.395 + 1.238 + 2.006 + 0.919 + 6.511 + 0.101 + 5.366 + 0.328 + 0.004 + 5.826 + 0.032 + 6.672 + 0.684 + 9.365 + 5.271 + 2.725 = 51.419$$

Calculated $X^2 = 51.419$

Degrees of Freedom (DF) = (Rows - 1) x (Columns - 1) = (5 - 1) x (4 - 1) = 12

Significance Level: = 0.05

Chi-Square Critical Value (X^2 Tab) = 21.03

Decision Rule

The decision rule for the Chi-square test states that:

- i. If the calculated Chi-square value is greater than the tabulated (critical) value, the null hypothesis should be rejected.
- ii. If the calculated Chi-square value is less than or equal to the tabulated value, the null hypothesis should be accepted.

In this research, the calculated Chi-square value (51.419) is greater than the critical Chi-square value (21.03). Therefore: $51.419 > 21.03$. This places the result within the rejection region of the null hypothesis. Based on the statistical outcome, the null hypothesis is rejected. It is therefore concluded that there is a significant effect of natural resource governance on road infrastructure development in Akwa Ibom State. This finding implies that the way natural resources are managed, distributed, and governed has a direct influence on the provision, quality, and sustainability of road infrastructure in the study area. The result further suggests that improved governance practices such as accountability, transparency, and efficient allocation of oil revenues are critical to enhancing road development in oil-producing communities. Conversely, weak governance structures may contribute to poor road conditions, inadequate maintenance, and uneven infrastructural development across the state.

Null Hypotheses 3: There is no significant relationship between natural resource governance and the provision of educational facilities in Akwa Ibom State

Table 8: Effect of Natural Resource Governance on Educational Facilities (n = 400)

S/N	Questions	SA	A	SD	D	Total
1	Oil revenue improves school infrastructure	132	111	80	77	400
2	The absence of accountability in natural resource governance negatively affects educational opportunities	80	132	111	77	400

3	Poor governance affects quality of education	119	112	69	100	400
4	Schools in oil communities are well equipped	80	119	112	89	400
5	Teachers are adequately provided due to resource governance	119	89	80	112	400
Grand Total		530	563	452	455	2000

Table 9: Calculating Expected Frequencies (E)

	SA	A	SD	D	Total	X ² Cal.	X ² Tab.
1	106	112.6	90.4	91	400		
2	106	112.6	90.4	91	400		
3	106	112.6	90.4	91	400		
4	106	112.6	90.4	91	400		
5	106	112.6	90.4	91	400		
Total	530	563	452	455	2000	58.177	21.03

Table 4.10: Calculation of X² for Each Cell

S/N	SA	A	SD	D
1	$(132-106.6)^2 = 6.19$ 106	$(111-112.6)^2 = 0.02$ 112.6	$(80-90.4)^2 = 1.20$ 90.4	$(77-91)^2 = 2.15$ 91
2	$(80-106)^2 = 5.21$ 106	$(132-112.6)^2 = 3.28$ 112.6	$(111-90.4)^2 = 4.431$ 90.4	$(77-91)^2 = 2.15$ 91
3	$(119-106)^2 = 1.60$ 106	$(112-112.6)^2 = 0.03$ 112.6	$(69-90.4)^2 = 5.03$ 90.4	$(100-91)^2 = 0.89$ 91
4	$(80-106)^2 = 5.20$ 106	$(119-112.6)^2 = 0.36$ 112.6	$(112-90.4)^2 = 5.20$ 90.4	$(89-91)^2 = 0.04$ 91
5	$(119-106)^2 = 1.60$ 106	$(89-112.6)^2 = 5.41$ 112.6	$(80-90.4)^2 = 1.20$ 90.4	$(112-91)^2 = 5.02$ 91

$$X^2 = 6.189 + 0.023 + 1.196 + 2.145 + 5.208 + 3.283 + 4.427 + 2.145 + 1.602 + 0.003 + 5.031 + 0.889 + 5.208 + 0.360 + 5.202 + 0.044 + 1.602 + 5.408 + 1.196 + 5.016 = 58.177$$

Calculated X² = 58.177

Degrees of Freedom (DF): (Rows - 1) x (Columns - 1) = (5 - 1) x (4 - 1) = 12

Significance Level = 0.05

Chi-Square Critical Value (X^2_{Tab}): 21.03

Decision Rule

The decision rule for Chi-square analysis states that:

- i. If the calculated Chi-square value is greater than the tabulated (critical) value, the null hypothesis should be rejected.
- ii. If the calculated Chi-square value is less than or equal to the tabulated value, the null hypothesis should be accepted.

In this study, the calculated Chi-square value (58.177) is greater than the critical Chi-square value (21.03). Therefore: $58.177 > 21.03$. This result falls within the rejection region of the null hypothesis.

Based on the result of the analysis, the null hypothesis is rejected. It is therefore concluded that there is a significant relationship between natural resource governance and the provision of educational facilities in Akwa Ibom State. This implies that the effectiveness of natural resource governance significantly influences the availability, quality, and development of educational infrastructure in the study area. The finding further indicates that improved governance of natural resources—through transparency, accountability, and proper allocation of oil revenues—can enhance investment in educational facilities such as classrooms, learning materials, and qualified teachers. Conversely, weak governance structures may continue to hinder the development of the education sector despite the substantial natural resource wealth of the region.

DISCUSSION OF FINDINGS

The findings of this study reveal a consistent and statistically significant relationship between natural resource governance and socio-economic development in Akwa Ibom State, particularly in the areas of healthcare services, road infrastructure, and educational facilities. The discussion is presented in line with the research hypotheses tested.

The result of Hypothesis 1 showed that there is a significant relationship between natural resource governance and access to healthcare services in Akwa Ibom State ($X^2_{cal} = 97.698 > X^2_{tab} = 21.03$). This finding implies that the manner in which oil revenues are managed and distributed has a direct impact on the quality and availability of healthcare services in oil-producing communities. This supports the view that effective governance enhances public service delivery, particularly in critical sectors such as health. However, the study also revealed that despite substantial oil revenue generation, many communities still experience inadequate hospitals, insufficient medical personnel, and poor healthcare facilities. This aligns with previous studies such as Adewuyi and Olowookere (2022) as well as Nwankwo and Okereke (2022) that have attributed such challenges to corruption, weak institutional frameworks, and poor accountability in resource management systems. The implication is that where governance is weak, healthcare development remains underfunded and poorly implemented.

The findings from Hypothesis 2 indicated a significant effect of natural resource governance on road infrastructure development ($X^2_{cal} = 51.419 > X^2_{tab} = 21.03$). This suggests that effective governance of natural resources contributes positively to the construction and maintenance of road networks in Akwa Ibom State. However, field responses also showed that many rural communities still suffer from poor road networks, limited accessibility, and abandoned infrastructural projects. This situation reflects inefficiencies in revenue utilization and unequal distribution of development projects. The findings are consistent with the argument of scholars such as Ebeku (2021) and Essien and Etim (2023) that infrastructural development in resource-rich regions is often constrained by mismanagement of funds and inadequate policy implementation. Poor road infrastructure has continued to affect transportation, economic activities, and access to essential services in the study area.

The result of Hypothesis 3 revealed a significant relationship between natural resource governance and the provision of educational facilities ($X^2_{cal} = 58.177 > X^2_{tab} = 21.03$). This indicates that governance practices in the management of natural resources significantly influence the development of educational infrastructure in Akwa Ibom State. Despite this significant relationship, the study found that many schools in oil-producing communities remain poorly equipped, with inadequate classrooms, insufficient learning materials, and shortage of qualified teachers. This suggests that although oil revenues are substantial, they have not been effectively channeled into educational development. The finding reinforces earlier studies (Olaifa and Adewumi, 2023; Ekanem and Ibok, 2024) which argue that weak governance structures and poor prioritization of social sectors hinder human capital development in resource-rich regions.

Overall, the findings of this study demonstrate that natural resource governance plays a crucial role in shaping socio-economic development outcomes in Akwa Ibom State. The significant relationships observed across healthcare, road infrastructure, and education confirms that governance quality determines how effectively oil revenues are transformed into public goods and services. However, the persistent gaps in service delivery indicate that governance challenges such as corruption, lack of transparency, weak accountability mechanisms, and inadequate community participation continue to undermine development efforts. These challenges have resulted in a paradox where the region remains resource-rich but developmentally poor.

In a nutshell, the study establishes that effective natural resource governance is essential for improving healthcare services, road infrastructure, and educational facilities in Akwa Ibom State. The findings emphasize that without strong governance structures; the socio-economic benefits of natural resources may not be fully realized. Therefore, strengthening governance institutions and ensuring transparent management of oil revenues are critical for sustainable development in the Niger Delta region.

CONCLUSION AND RECOMMENDATIONS

This study examined the role of effective natural resource governance in promoting socio-economic development in Akwa Ibom State, with particular focus on healthcare services, road infrastructure, and educational facilities in selected oil-producing local government areas. The findings of the study clearly indicate that natural resource governance has a significant relationship with all the examined indicators of socio-economic development. Specifically, the study established that effective natural resource governance significantly influences access to healthcare services, the development of road infrastructure, and the provision of educational facilities in Akwa Ibom State. The Chi-square results for all tested hypotheses showed that the calculated values were greater than the critical values, leading to the rejection of all null hypotheses. This confirms that governance practices in the management of oil resources play a crucial role in determining the level of development experienced in the study area.

However, despite the significance of this relationship, the study also revealed that socio-economic development in many oil-producing communities remains poor. Issues such as corruption, weak institutional capacity, poor accountability, and inadequate community participation have limited the effective utilization of oil revenues. As a result, many communities still suffer from poor healthcare delivery, inadequate road networks, and insufficient educational facilities despite the enormous natural resource wealth of Akwa Ibom State. Therefore, this research reached the conclusion that effective natural resource governance remains a serious pathway to achieving sustainable socio-economic development in Akwa Ibom State specifically and the wider Niger Delta region. The study further concludes that while natural resource governance is a key determinant of socio-economic development, its effectiveness in Akwa Ibom State is still constrained by structural and administrative challenges that should be addressed in order to ensure sustainable development in the state and region at large.

Based on the findings of the study, the following recommendations are made:

- i. Government at both state and local levels, in collaboration with oil companies operating in Akwa Ibom State, should increase investment in healthcare delivery systems in oil-producing communities. This should include the construction and equipping of hospitals, provision of modern medical facilities, and recruitment of qualified healthcare professionals. In addition, special healthcare intervention funds

should be transparently managed with proper accountability to ensure that oil revenues directly improve access to quality and affordable healthcare services in rural and urban communities.

- ii. There is a need for deliberate prioritization of road infrastructure development in oil-producing areas of Akwa Ibom State. Government should ensure that a significant portion of oil derivation funds is allocated to the construction, rehabilitation, and maintenance of rural and urban roads. Furthermore, contracts for road projects should be properly monitored to prevent abandonment and substandard execution. Effective maintenance culture should also be introduced to ensure the sustainability of existing road networks, thereby improving transportation, trade, and access to essential services.
- iii. Government should enhance funding for the education sector in oil-producing communities to improve the quality and availability of educational facilities. This includes the construction of modern classroom blocks, provision of learning materials, laboratory equipment, and upgrading of existing school infrastructure. Additionally, the recruitment and training of qualified teachers should be prioritized to improve teaching quality. Oil revenue allocation should be transparently channeled into education development to ensure equitable access to quality education for children in affected communities.
- iv. There should be paradigm shift from top-down regulation to participatory bottom-up approach entailing a tripartite co-management framework involving the state, multinational corporations and local community representatives to advance the cause of effective natural resource governance. A people centered bottom-up strategy underlining popular participation in the development process is imperative for sustainability and social inclusion as well as stability in the Niger Delta with special reference to Akwa Ibom State.

REFERENCES

1. Adebayo, T. A. (2021). Natural resource management and socio-economic development in the Niger Delta region of Nigeria. *Journal of Public Administration and Development Studies*, 8(2), 45–59.
2. Akpan, E. O., and Chukwurah, D. C. (2022). Oil wealth and community development in the Niger Delta region. *African Journal of Political Economy and Development*, 6(1), 72–89.
3. Akpan, E. O., and George, I. N. (2020). Oil resource management and rural development in Akwa Ibom State. *International Journal of Public Administration and Management Research*, 5(3), 45–58.
4. Alakwe, K.O.(2024). The paradox of the Niger Delta: Examining the principal Determinants of poverty and underdevelopment. *Journal of Developing Societies*, 40 (1), 94-115.
5. Amadi, S., and Ekekwe, E. (2014). *Corruption and development in Nigeria's Niger Delta*. Centre for Advanced Social Science.
6. Auty, R. M. (1993). *Sustaining development in mineral economies: The resource curse thesis*. Routledge.
7. Babalola, D. (2014). The underdevelopment of Nigeria's Niger Delta Region: Who is to blame? *Journal of Sustainable Development*, 7 (3), 118-128.
8. Central Bank of Nigeria (CBN). (2023). *Annual statistical bulletin*. Central Bank of Nigeria.
9. Dibia, O. (2024). Resource Curse, elitism and the development of the oil rich Niger Delta Region of Nigeria. *Journal of Global Economics and Business*, 5 (16), 91-112.
10. Ekanem, S. A., and Ibok, E. A. (2024). Oil revenue management and socio-economic development in the Niger Delta region. *Journal of Development Policy and Governance*, 11(2), 88–104.
11. Eke, G. J., and Augustine, P. U. (2022). Natural resource governance and sustainable development in the Niger Delta region of Nigeria. *Journal of Environmental Policy and Development*, 14(2), 88–101.
12. Essien, M. E. (2021). Revenue allocation and infrastructural development in Akwa Ibom State. *Nigerian Journal of Public Sector Management*, 9(1), 60–75.
13. Ibaba, S. I. (2020). *Environmental governance and development challenges in the Niger Delta*. University of Port Harcourt Press.
14. Ibok, E. A. (2021). Resource governance and poverty reduction in Akwa Ibom State. *International Journal of Social Sciences and Economic Studies*, 7(4), 112–126.
15. Ikelegbe, A. (2020). The economy of conflict in the oil rich Niger Delta region of Nigeria. *Nordic Journal of African Studies*, 15(2), 208–234.

16. OECD. (2020). *OECD framework for policy action on inclusive growth*. Organisation for Economic Co-operation and Development.
17. Okon, E. E., and Udo, J. A. (2021). Governance and sustainable resource management in Nigeria. *Journal of African Governance and Public Policy*, 10(3), 33–49.
18. Olaifa, T. A., and Adewumi, S. A. (2023). Transparency and accountability in oil revenue management in Nigeria. *African Journal of Governance and Development*, 12(1), 33–49.
19. Olawale, Y. A., and Sun, M. (2020). Resource management and infrastructure development in oil-producing regions. *International Journal of Sustainable Development*, 15(4), 76–91.
20. Omotola, J. S. (2009). Nigerian oil wealth and the oil curse. *African Research Review*, 3(2), 1–29.
21. Sachs, J. D., and Warner, A. M. (2001). The curse of natural resources. *European Economic Review*, 45(4–6), 827–838.
22. Sala-i-Martin, X., and Subramanian, A. (2013). Addressing the natural resource curse: An illustration from Nigeria. *Journal of African Economies*, 22(4), 570–615.
23. Tanne, Y. A., Rivana, D., Ramadan, R., and Farhani, S. (2025). Natural resource utilization and economic sustainability in developing economies. *Journal of Sustainable Development Studies*, 18(1), 1–18.
24. Tom, E.J. and Edet, E.k. (2021). The Niger-Delta Environment and its Implications for Basic Education. In Umoette, G.T., Tom, E.J. & Ataide, O.H. (Eds.). *Contemporary Issues in Public Administration and Governance* (pp.267-279), University of Calabar Press.
25. UNEP. (2011). *Environmental assessment of Ogoniland*. United Nations Environment Programme.
26. United Nations Development Programme (UNDP). (2021). *Niger Delta human development report*. UNDP Publications.
27. World Bank. (2019). *Governance and development in extractive resource economies*. World Bank Publications.