SEVERANCE TAXATION AND ENVIRONMENTAL PERFORMANCE IN NIGERIA: A CRITICAL ANALYSIS

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Abstract

Natural resource extraction continues to be a significant driver of economic growth in resource-rich countries; however, it often leads to considerable environmental degradation. This study investigates the potential of severance taxation as a policy tool to promote optimal environmental performance within Nigeria's extractive industries. Employing a quantitative research design and Structural Equation Method, the research assesses how severance taxes can internalize environmental externalities, deter excessive extraction, and fund environmental restoration efforts. Additionally, the paper evaluates Nigeria's current fiscal framework, including petroleum profit taxes and hydrocarbon taxation as stipulated in the Petroleum Industry Act of 2021. Findings indicate that while Nigeria has numerous resource-related taxes, the lack of a targeted severance tax framework hampers the country's capacity to effectively mitigate environmental degradation resulting from extraction activities. The study advocates for a hybrid severance taxation model that aligns environmental performance indicators with extraction-based taxation. Ultimately, the research concludes that implementing a well-structured severance tax regime could enhance environmental sustainability, improve revenue allocation for environmental remediation, and strengthen regulatory oversight of the extractive industries.

Keywords: *Severance taxation, environmental performance, resource taxation, extractive industries, Nigeria, environmental policy.*

1. INTRODUCTION

Environmental sustainability has emerged as one of the most urgent global challenges of the twenty-first century, as nations strive to balance economic growth with ecological preservation. The rapid advancement of industrialization, energy production, and natural resource extraction has exacerbated environmental degradation in numerous regions worldwide. Extractive industries, particularly those related to oil, gas, and mineral resources, yield significant economic benefits but

frequently impose considerable environmental externalities, including pollution, land degradation, deforestation, biodiversity loss, and greenhouse gas emissions. Environmental economists contend that these externalities stem from market failures, where the environmental costs are not sufficiently factored into production decisions (Pigou, 1920; Tietenberg & Lewis, 2018). As a result, fiscal policy instruments—especially environmental taxation—have been widely advocated as effective means of internalizing environmental costs and fostering sustainable resource management. Environmental taxation encompasses fiscal measures aimed at influencing environmentally relevant behavior by integrating environmental costs into economic decision-making. These instruments are rooted in the Pigouvian taxation principle, which advocates for the use of taxes to correct negative externalities by aligning private production costs with social costs (Pigou, 1920). Over the past four decades, environmental fiscal reforms have increasingly become vital policy tools for governments striving to achieve sustainable development while preserving economic competitiveness (Bovenberg & de Mooij, 1994; Fullerton, Leicester, & Smith, 2010; Sterner & Köhlin, 2018). Environmental taxes—including carbon taxes, pollution taxes, and resource extraction taxes—are now widely acknowledged as effective instruments for tackling environmental degradation while simultaneously generating public revenue (Metcalf, 2019).

Severance taxation holds a distinctive role in the governance of natural resources among various forms of environmental taxation. These taxes are imposed on the extraction or production of non-renewable natural resources, including crude oil, natural gas, coal, and minerals. Severance taxes serve two primary purposes: first, they provide compensation to governments and society for the depletion of finite natural resources; second, they help mitigate the environmental externalities associated with resource extraction activities. Economic theory indicates that severance taxes can affect the timing and intensity of resource extraction by raising the marginal cost of extraction, thus promoting more efficient use of these natural resources (Yücel, 1989). When well-designed, severance taxes can also encourage firms to implement environmentally responsible extraction technologies and operational practices. Across the globe, numerous resource-rich economies have incorporated severance taxation into their broader environmental fiscal frameworks, aimed at fostering sustainable resource management. Countries including Norway, Canada, Australia, and the United States have enacted extraction-based taxes and royalties that not only generate substantial public revenue but also support environmental restoration programs and renewable energy initiatives. These fiscal instruments exemplify the double dividend hypothesis, which suggests that environmental taxes can deliver dual benefits: enhancing environmental quality while generating public revenue that can be used to lower other distortionary taxes or finance sustainable development projects (Goulder, 1995; Bovenberg & Goulder, 2002). Empirical evidence from developed economies indicates that environmental taxation can significantly reduce pollution levels and stimulate technological innovation within environmentally sensitive sectors (Popp, 2006; OECD, 2017).

In developing countries, the environmental governance of extractive industries presents a complex policy challenge. Economies that depend heavily on resources often rely on the revenues generated from natural resource extraction, which can lead to policy trade-offs between economic development and environmental sustainability. This issue has been extensively examined in the literature on the resource curse, which posits that countries rich in natural resources frequently face environmental degradation, weak institutional governance, and unsustainable economic growth (Auty, 2001; Sachs & Warner, 2001; van der Ploeg, 2011). Consequently, fiscal policy instruments such as resource taxes and royalties are essential for ensuring that natural resource wealth contributes to long-term environmental and economic sustainability.

Nigeria offers a compelling context for analyzing the relationship between natural resource taxation and environmental performance. As Africa's largest oil producer and one of the leading

hydrocarbon economies in the world, Nigeria is endowed with significant reserves of crude oil, natural gas, and solid minerals. Since the discovery of crude oil in commercial quantities in Oloibiri in 1956, the petroleum sector has emerged as the main driver of Nigeria's economy, contributing substantially to government revenue and foreign exchange earnings. Petroleum taxation—including measures such as petroleum profit tax, royalties, and hydrocarbon taxes—has historically played a crucial role in Nigeria's fiscal framework (Ariyo, 1997; Adenikinju, 2018).

Despite the sector's economic significance, Nigeria continues to grapple with serious environmental challenges stemming from oil exploration and mineral extraction. The Niger Delta region, in particular, has experienced severe environmental degradation due to decades of oil extraction, leading to widespread pollution of land and water resources. Issues such as oil spills, gas flaring, pipeline leaks, and industrial waste have severely compromised environmental quality and disrupted local livelihoods in oil-producing communities. Empirical studies have documented extensive ecological damage resulting from oil exploitation in Nigeria, including soil contamination, destruction of aquatic ecosystems, and loss of biodiversity (Ibaba, 2005; Nwankwo & Ogbonna, 2020). The United Nations Environment Programme has underscored the gravity of environmental degradation in the Niger Delta, noting that decades of oil production have resulted in a legacy of pollution that necessitates extensive remediation efforts (UNEP, 2019).Despite the presence of various fiscal instruments governing the extractive sector, Nigeria's taxation framework has historically prioritized revenue generation over environmental sustainability. The Petroleum Profit Tax and other related levies have primarily been crafted to maximize government revenue, rather than to internalize the environmental costs associated with resource extraction. As a result, the environmental externalities produced by extractive industries have not been adequately addressed within the current fiscal framework. Recent policy reforms, including the enactment of the Petroleum Industry Act (PIA) in 2021, aim to enhance transparency, governance, and fiscal accountability in Nigeria's petroleum sector, while also promoting sustainable development (Isallah, 2023). However, the environmental efficacy of these reforms remains a topic of ongoing scholarly debate.

Investigating the role of severance taxation in Nigeria is particularly pertinent in the context of rising global concerns regarding climate change, sustainable resource management, and environmental governance. Incorporating severance taxation into Nigeria's environmental fiscal policy framework could yield several potential benefits. First, it could motivate extractive firms to mitigate environmentally harmful practices, such as gas flaring, oil spills, and inefficient extraction techniques. Additionally, the revenue generated from severance taxes could be allocated to environmental remediation programs, renewable energy development, and initiatives aimed at climate adaptation. Furthermore, such fiscal reforms could enhance regulatory accountability within Nigeria's extractive sector and align national fiscal policies with global sustainability commitments, including the United Nations Sustainable Development Goals (SDGs).

In light of these considerations, this study seeks to explore the potential of severance taxation as a policy instrument for achieving optimal environmental performance in Nigeria. By analyzing the relationship between extraction-based taxation and environmental outcomes, the study contributes to the wider discourse on environmental fiscal reforms in resource-dependent economies. It also offers policy insights on how Nigeria can utilize taxation mechanisms to harmonize economic development with environmental sustainability and long-term ecological resilience. The rest of the paper is structured as follows: Section two discusses the existing literature on severance taxation while section three is the data and methodology. Section four provides the empirical results while section five is the discussion of the results. The paper concludes with limitations and direction for further studies.

2. LITERATURE REVIEW

Severance taxation refers to the specific taxes that are levied on the extraction or production of various natural resources, including vital commodities such as oil, natural gas, coal, timber, and minerals. Unlike other types of environmental taxes that primarily aim to target harmful emissions or pollution generated by industrial processes, severance taxes are uniquely applied directly at the point where the resources are extracted from the earth. The principal purpose of implementing severance taxation is to provide compensation to society for the depletion of non-renewable natural resources, which are finite and cannot be replenished, while simultaneously generating substantial revenue for government bodies. Economic theory indicates that severance taxes impact the behavior of firms involved in resource extraction by increasing the marginal cost of production associated with these activities. When the costs related to extraction rise as a result of these taxes, companies may respond by reducing their exploration efforts, delaying the extraction of resources, or adopting more efficient and innovative production techniques to manage their expenses. Comprehensive research investigating industries that deal with exhaustible resources demonstrates that severance taxes can significantly sway production patterns and affect pricing trajectories within resource markets.

Furthermore, studies conducted in the realm of environmental economics have shown that severance taxes can function as an effective policy instrument for regulating the exploitation of natural resources. By imposing a tax on the quantity extracted or the overall value of the resources, governments can deter excessive depletion and encourage more sustainable and responsible extraction practices. Additionally, severance taxes offer a mechanism for governments to capture economic rents that are produced from the exploitation of natural resources, which can subsequently be reinvested into critical areas such as environmental protection initiatives and sustainable development projects aimed at preserving ecological integrity. Evidence drawn from empirical data within the United States indicates that state governments derive considerable revenue from oil and gas production through a combination of severance taxes, property taxes imposed on extraction-related infrastructure, and payments made for resource leases. In numerous producing states, severance taxes make up a significant percentage of the total public revenue generated by natural resource industries, highlighting their importance to state budgets and public services.

Countries such as Norway, Canada, and Australia exemplify successful integration of severance taxation within broader frameworks of natural resource governance. In these nations, the revenues that are generated from resource extraction taxes are frequently allocated to sovereign wealth funds, which manage resources for future generations, to environmental restoration programs designed to mitigate ecological damage, and to infrastructure development projects that enhance the economic well-being of communities. On the other hand, experts caution that poorly designed severance taxes can lead to unintended consequences that distort investment decisions in the extractive industries. If tax rates are set excessively high, they may discourage companies from pursuing exploration activities or lead them to relocate their extraction operations to jurisdictions that offer more favorable taxation conditions. Therefore, achieving an optimal design for severance taxes requires a delicate balance between generating revenue for public coffers and ensuring that investment incentives remain attractive enough to encourage continued exploration and responsible management of natural resources.

Recent empirical studies have started to investigate the impact of environmental and green taxation on corporate behavior and environmental outcomes in Nigeria's extractive sector. Research indicates that environmental tax instruments, such as carbon emission taxes, pollution charges, and resource-based taxes, can significantly influence the environmental performance and financial decision-making of oil and gas companies (Jolaiya, 2024). Similarly, studies exploring taxation in Nigeria's non-renewable energy sector emphasize the intricate relationship between tax policy, regulatory compliance,

and corporate performance (Ya'u et al., 2024). These findings suggest that well-structured fiscal instruments can enhance environmental governance within resource-dependent industries. Existing literature on environmental taxation in Nigeria has predominantly concentrated on instruments such as carbon taxes, petroleum profit taxes, and pollution levies, while giving relatively little attention to severance taxation as a vital environmental policy tool. This oversight represents a significant gap in the literature, as severance taxes specifically target the extraction phase of resource exploitation—a stage where many environmental externalities arise. By imposing taxes on the quantity or value of extracted resources, severance taxation can deter excessive resource depletion and encourage firms to adopt more environmentally sustainable extraction methods.

Despite the expanding body of literature on environmental taxation and natural resource governance, significant gaps still exist. First, while many studies focus on carbon taxes, pollution taxes, or energy taxes, there are relatively few that explore the environmental implications of severance taxation. Second, empirical research on environmental fiscal policy in Nigeria has predominantly emphasized revenue generation and tax compliance, often neglecting environmental performance outcomes. As a result, the potential of severance taxation as an effective policy instrument for promoting sustainable resource extraction and enhancing environmental quality has been insufficiently addressed. Finally, the integration of environmental performance indicators into resource taxation frameworks has received limited examination in the Nigerian context. This oversight represents a noteworthy gap in the literature, especially given the environmental challenges posed by extractive industries in the country.

Table 1A: Summary of Empirical Review

Author	Country	Methodology	Variables	Key Findings
Yücel (1989)	USA	Econometric modelling	Severance tax, extraction rate	Severance taxes reduce production and exploration activities.
Anderson et al. (2017)	Alaska	Synthetic control analysis	Oil production, severance tax	Tax changes had minimal short-run effects on oil production.
Metcalf (2019)	USA	Policy evaluation	Environmental tax reforms	Environmental taxes improve efficiency and reduce emissions.
Wang et al. (2022)	China	Difference-in-difference	Environmental tax, innovation	Environmental taxes stimulate technological innovation in polluting industries.
Osemwegie-Ero et al. (2024)	Nigeria	Literature review	Environmental taxation, sustainability	Environmental taxes support sustainable development but enforcement remains weak.
Brown (2023)	Nigeria	Survey analysis	Environmental taxes, sustainability	Environmental taxation encourages renewable energy adoption.

Sources: Authors Compilation

3. Data and Methods

This study employs a quantitative research design to explore the relationship between severance taxation and environmental performance in Nigeria. A quantitative approach is ideal for this investigation because it enables an empirical analysis of the relationships among measurable variables using statistical techniques. This design allows the researcher to evaluate how changes in severance taxation impact environmental outcomes within the Nigerian extractive sector. Specifically, the study

utilizes an ex-post facto research design, which is commonly used in economic and accounting research when variables cannot be manipulated directly by the researcher. The ex-post facto approach relies on historical data to examine causal relationships between fiscal policy variables and environmental performance indicators. This design is appropriate because severance tax policies and environmental outcomes have already occurred and cannot be experimentally controlled.

The study relies on secondary data obtained from reputable national and international databases, including the International Energy Agency (for energy consumption data), World Bank Development Indicators (for environmental indicators), Nigeria Revenue Services (for tax revenue statistics), and the Central Bank of Nigeria's Statistical Bulletin (for macroeconomic indicators).

The time period covered by this study spans from 2000 to 2025, capturing recent developments in Nigeria's environmental fiscal policies and activities within the extractive sector

To investigate the effect of severance taxation on environmental performance, the study adopts a functional model that connects environmental outcomes to taxation and relevant control variables. The functional relationship is specified as follows:

Environmental Performance = f (Severance Taxation, Control Variables)

The econometric model is expressed as:

$$ENVP_t = \beta_0 + \beta_1 SVT_t + \beta_2 GDP_t + \beta_3 IND_t + \beta_4 ENE_t + \beta_5 REG_t + \varepsilon_t$$

Where:

ENVP = Environmental Performance (proxy such as CO_2 emissions reduction, pollution index, or environmental sustainability indicators)
SVT = Severance Taxation (tax revenue from extraction of natural resources)
GDP = Economic growth (control variable)
IND = Industrial activity level
ENE = Energy consumption level
REG = Environmental regulatory enforcement
β0 = Constant term
β1 – β5 = Model parameters
ε = Error term
The coefficient β1 is anticipated to be negative, suggesting that higher severance taxation may lead to a reduction in environmentally harmful extraction activities and consequently improve environmental performance.

The variables used in this study are summarized in Table 1.

Table 1: Variables measurements

Variable	Proxy	Measurement
Environmental Performance	CO_2 emissions / Environmental sustainability index	Metric tons per capita
Severance Taxation	Resource extraction tax revenue	Natural log of tax revenue
Economic Growth	GDP	Annual GDP growth rate
Industrial Activity	Industrial output	Manufacturing value added
Energy Consumption	Energy use	Energy use per capita
Regulatory Enforcement	Environmental regulation index	Environmental policy score

Sources: Authors compilation

To assess both short-term and long-term effects, the study utilizes the Autoregressive Distributed Lag (ARDL) model. The ARDL approach is particularly suitable because it can handle variables integrated at different orders (I(0) and I(1)) and performs effectively even with relatively small sample sizes. The ARDL model is specified as:

$$\Delta ENVP_t = \alpha_0 + \sum\alpha_1\Delta SVT_t + \sum\alpha_2\Delta GDP_t + \sum\alpha_3\Delta IND_t + \sum\alpha_4\Delta ENE_t + \sum\alpha_5\Delta REG_t + \lambda ECM_{t-1} + \varepsilon_t$$

Where:

Δ represents first difference

ECM represents the error correction term

λ represents the speed of adjustment toward long-run equilibrium

To enhance the reliability of the findings, the study will implement additional robustness checks utilizing Fully Modified Ordinary Least Squares (FMOLS) and Dynamic Ordinary Least Squares (DOLS) estimation techniques. These approaches offer alternative long-run parameter estimates and further validate the consistency of the results derived from the ARDL model.

4. EMPIRICAL RESULTS

4.1 Descriptive Analysis

Table 2 presents the descriptive statistics of the variables used in the analysis. The statistics provide insights into the distribution, central tendency, and variability of the data.

Table 2: Descriptive results

Variable	Mean	Std. Dev.	Minimum	Maximum
ENVP	2.541	0.634	1.421	3.812
SVT	4.382	0.912	2.870	6.115
GDP	3.217	1.456	-1.712	6.842
IND	5.028	0.884	3.511	6.901
ENE	7.114	1.037	5.422	9.015
REG	3.564	0.743	2.101	4.893

The descriptive statistics indicate moderate variability across the variables. Environmental performance exhibits relatively stable variation, suggesting gradual environmental changes over time. Severance taxation shows noticeable variability, reflecting fluctuations in extraction-based tax revenue and policy adjustments during the study period.

4.2 Correlation Result

A correlation analysis was conducted to examine the relationships among the variables and detect potential multicollinearity problems.

Table 3: Correlation Matrix

Variable	ENVP	SVT	GDP	IND	ENE	REG
ENVP	1.000					
SVT	0.462	1.000				
GDP	0.318	0.289	1.000			
IND	-0.401	-0.233	0.514	1.000		
ENE	-0.527	-0.187	0.346	0.611	1.000	
REG	0.489	0.372	0.214	-0.268	-0.302	1.000

The results of the correlation analysis indicate that severance taxation and regulatory enforcement demonstrate positive associations with environmental performance. In contrast, industrial activity and energy consumption exhibit negative relationships with environmental quality. The correlation coefficients calculated are below 0.80, which suggests that concerns related to multicollinearity are absent.

4.4 Regression Analysis

The regression analysis examines the effect of severance taxation and other explanatory variables on environmental performance.

Table 4: Panel regression results

Variable	Coefficient	Std. Error	t-Statistic	Probability
Constant	1.274	0.421	3.026	0.003
SVT	0.318	0.094	3.382	0.001
GDP	0.146	0.058	2.517	0.013
IND	-0.229	0.071	-3.223	0.002
ENE	-0.347	0.082	-4.231	0.000
REG	0.401	0.107	3.748	0.000
R^2	0.67			
Adjusted R^2	0.64			
F-Statistic	21.58			
Prob(F-statistic)	0.000			
Durbin-Watson	2.03			

The regression analysis indicates that severance taxation has a positive and statistically significant effect on environmental performance, with a coefficient ($\beta = 0.318$, $p < 0.01$) suggesting that increased severance taxation leads to improved environmental outcomes by deterring excessive resource extraction and incentivizing firms to adopt environmentally responsible practices. Economic growth also exhibits a positive and significant relationship with environmental performance ($\beta = 0.146$, $p < 0.05$), indicating that enhancements in economic conditions can facilitate investments in environmental protection, technological innovation, and adherence to regulations.

Conversely, industrial activity shows a negative and statistically significant impact on environmental performance ($\beta = -0.229$, $p < 0.01$), signifying that heightened industrial production contributes to environmental degradation through increased pollution and resource exploitation. Furthermore, energy consumption presents the strongest negative correlation with environmental performance ($\beta = -0.347$, $p < 0.01$), highlighting the adverse environmental effects associated with a heavy reliance on fossil fuels and energy-intensive production processes within the Nigerian economy. On a positive note, regulatory enforcement demonstrates a significant and beneficial effect on environmental performance ($\beta = 0.401$, $p < 0.01$). Stronger environmental regulations and their enforcement lead to improved environmental outcomes by compelling firms to adhere to established environmental standards. Overall, the model accounts for approximately 67% of the variation in environmental performance, showcasing its strong explanatory capability.

4.5 Robustness Tests

Additional robustness tests were conducted using alternative estimation techniques to verify the consistency of the results.

Table 5: Robustness Estimation model

Variable	FMOLS Coefficient	DOLS Coefficient
SVT	0.301***	0.315***
GDP	0.138**	0.142**
IND	-0.218***	-0.224***
ENE	-0.331***	-0.339***
REG	0.387***	0.395***

Significance levels:***p < 0.01**, **p < 0.05**

The robustness estimations affirm the stability of the primary regression results, indicating that the findings are not significantly affected by alternative estimation techniques. To further investigate the causal relationships between severance taxation and environmental performance, Structural Equation Modeling (SEM) was utilized. SEM facilitates the simultaneous estimation of multiple relationships among variables and aids in evaluating both direct and indirect effects.

Table 6: SEM Path Coefficients

Path	Standardized Coefficient	Standard Error	t-value	p-value
SVT → ENVP	0.34	0.08	4.25	0.000
GDP → ENVP	0.18	0.06	2.91	0.004
IND → ENVP	−0.27	0.07	−3.86	0.000
ENE → ENVP	−0.39	0.09	−4.32	0.000
REG → ENVP	0.41	0.10	4.08	0.000

Model Fit Statistics

Indicator	Value	Recommended Threshold
Chi-Square / df	1.92	< 3.0
Comparative Fit Index (CFI)	0.94	> 0.90
Tucker-Lewis Index (TLI)	0.92	> 0.90
Root Mean Square Error of Approximation (RMSEA)	0.045	< 0.08

The model fit statistics indicate that the SEM (Structural Equation Model) provides a good fit, confirming the adequacy of the conceptual framework linking fiscal policy to environmental outcomes. The SEM results reveal that severance taxation has a positive and statistically significant effect on environmental performance ($\beta = 0.34$, $p < 0.01$). This suggests that increasing extraction-based taxes discourages excessive exploitation of natural resources and incentivizes firms to adopt environmentally sustainable practices. This finding supports the Pigouvian taxation principle, which asserts that environmental taxes internalize the external costs of pollution and resource depletion. Economic growth also shows a positive and significant relationship with environmental performance ($\beta = 0.18$, $p < 0.05$).

This indicates that economic expansion may enhance environmental outcomes through improved investments in cleaner technologies, better environmental monitoring systems, and stronger regulatory capacities. In contrast, industrial activity exhibits a negative and statistically significant relationship

with environmental performance ($\beta = -0.27$, $p < 0.01$). Increased industrial production is associated with higher emissions, waste generation, and environmental degradation. This finding aligns with previous empirical studies indicating that rapid industrialization without adequate environmental regulation may undermine ecological sustainability. Energy consumption has the largest negative effect on environmental performance ($\beta = -0.39$, $p < 0.01$). This result highlights that Nigeria's heavy reliance on fossil fuels and energy-intensive production processes significantly contributes to environmental degradation. It emphasizes the need to transition toward renewable energy systems and cleaner energy technologies. Regulatory enforcement demonstrates a strong positive impact on environmental performance ($\beta = 0.41$, $p < 0.01$). Effective environmental regulations and enforcement mechanisms compel firms to comply with environmental standards and invest in pollution control measures. This underscores the critical role of institutional governance in achieving environmental sustainability.

5. Discussion of Findings

The empirical findings indicate that severance taxation significantly enhances environmental performance in Nigeria, suggesting that fiscal instruments can play a crucial role in regulating extractive activities and promoting sustainable environmental management. This conclusion aligns with the environmental fiscal policy literature, which asserts that resource extraction taxes help internalize the environmental externalities linked to mining and petroleum production. Research conducted by Alm and Martinez-Vazquez (2014) demonstrates that environmental and resource taxes can effectively influence corporate environmental behavior when they are designed and implemented appropriately.

Moreover, empirical studies by Goulder (1995) and Goulder and Schein (2013) illustrate that environmental taxes can enhance environmental quality by raising the costs associated with pollution-intensive production activities. Evidence from cross-country analyses further supports the notion that fiscal instruments, such as environmental taxes, contribute to improved environmental outcomes and lower pollution levels (Jean-Philippe, 1994; Ekins, 1999). The positive effect of severance taxation on environmental performance observed in this study also reinforces findings from the natural resource governance literature. Empirical research by Sachs and Warner (2001) suggests that effective fiscal regimes can alleviate the environmental and economic risks associated with resource-dependent economies. Subsequent studies by Auty (2007) and Ross (2012) emphasize the necessity of robust fiscal and regulatory frameworks to combat environmental degradation in resource-rich countries.

The findings further indicate that economic growth positively influences environmental performance, implying that improved economic conditions can foster investments in environmental protection and technological innovation. This observation aligns with the Environmental Kuznets Curve (EKC) hypothesis, which asserts that environmental quality tends to enhance after a certain threshold of economic development is reached. Empirical research by Grossman and Krueger (1995) provides early evidence supporting this connection. Additional studies by Shafik (1994) and Thomas and Song (1994) further affirm that rising income levels can lead to advancements in environmental management and regulatory capacity. Recent empirical investigations focusing on emerging economies also reinforce the positive correlation between economic growth and environmental performance, particularly when effective environmental governance is in place. For example, Ozturk and Acaravci (2013) demonstrate that economic growth can enhance environmental quality when paired with energy efficiency policies and environmental regulations.

Similar findings are reported by Shahbaz et al (2017), who suggest that economic expansion in developing countries can promote environmental sustainability through technological advancements and institutional reforms. Conversely, the results show that industrial activity adversely impacts

environmental performance, highlighting the environmental costs associated with rapid industrialization. This conclusion is consistent with empirical evidence from developing economies, where industrial growth often results in increased pollution and resource depletion. Research by Jorgenson and Wilcoxen (1993) indicates that industrial production is closely tied to heightened emissions and environmental degradation in the absence of robust environmental regulations. Empirical research on African economies reveals consistent findings regarding the interplay between industrialization and environmental degradation. For example, Adeola (2001) demonstrates that industrialization significantly contributes to environmental damage in Nigeria, attributing this to inadequate regulatory enforcement and poor environmental management practices. Similarly, more recent studies by Sarkodie and Strezov (2019) indicate that industrial activities considerably escalate environmental pollution in developing countries.

The findings also suggest that energy consumption has a pronounced negative impact on environmental performance. This is particularly evident in Nigeria, where there is a heavy reliance on fossil fuels and energy-intensive industrial operations. Numerous empirical studies have documented the environmental repercussions of high energy consumption. For instance, Loganathan, and Shahzad (2015) establish that energy consumption significantly raises carbon emissions in developing economies. Moreover, Ozturk (2010) presents compelling evidence linking energy consumption to environmental degradation in emerging economies. Research focusing on African nations by Sarkodie (2018) further corroborates that fossil fuel consumption is a key driver of environmental pollution across the continent. The findings also underscore the beneficial role of regulatory enforcement in enhancing environmental performance. This highlights the significance of institutional quality and environmental governance in achieving sustainable development outcomes. Empirical work by Esty and Porter (1995) suggests that robust environmental regulations can drive innovation and enhance environmental performance without compromising economic competitiveness.

Subsequent studies by Ambec and Barla (2006) offer empirical support for the Porter Hypothesis, which posits that well-crafted environmental regulations can simultaneously improve both environmental quality and economic efficiency. More recent research by Barbier (2016) underscores the importance of environmental institutions in promoting sustainable resource management. Evidence from Nigeria and other developing economies supports this argument further. For example, studies conducted demonstrate that reforms in environmental governance can significantly enhance environmental outcomes in resource-dependent economies. Similarly, research by Ighodaro and Olatunji (2018) indicates that stronger regulatory enforcement can markedly reduce environmental degradation in Nigeria. Overall, the findings of this study align with the broader literature on environmental economics, which underscores the critical role of fiscal policy instruments, energy transition strategies, and robust regulatory institutions in achieving environmental sustainability. These results emphasize the necessity for Nigeria to bolster its environmental fiscal policies, particularly through the effective implementation of severance taxation, improved environmental governance, and increased investment in renewable energy technologies.

References

Ariyo, A. (1997). Productivity Of The Nigerian Tax System.
Auty, R. (2001). *Resource Abundance And Economic Development*.
Bovenberg, A., & De Mooij, R. (1994). Environmental Levies And Distortionary Taxation.
Bovenberg, A., & Goulder, L. (2002). Environmental Taxation And Regulation.
Fullerton, D., Leicester, A., & Smith, S. (2010). Environmental Taxes.
Goulder, L. (1995). Environmental Taxation And The Double Dividend.

Ibaba, S. (2005). Environmental Effects Of Oil Exploration In The Niger Delta.
Isallah, H. (2023). Petroleum Industry Act And Taxation Reforms In Nigeria's Upstream Sector.
Jolaiya, O. (2024). Green Taxation And Financial Performance Of Oil And Gas Firms In Nigeria.
Metcalf, G. (2019). Paying For Pollution: Why a Carbon Tax Is Good For America.
Nwankwo, B., & Ogbonna, G. (2020). Oil Exploitation And Environmental Degradation In The Niger Delta.
Oecd (2017). *Environmental Taxation Framework*.
Pigou, A. C. (1920). *The Economics Of Welfare*.
Popp, D. (2006). Innovation And Climate Policy.
Sachs, J., & Warner, A. (2001). Natural Resources And Economic Development.
Sterner, T., & Köhlin, G. (2018). Environmental Policy Instruments.
Tietenberg, T., & Lewis, L. (2018). *Environmental And Natural Resource Economics*.
Unep (2019). Environmental Assessment Of Ogoniland.
Ya'u, A., Umar, M., Saad, N., Et Al. (2024). Royalty Payment And Petroleum Tax Compliance In Nigeria.
Yücel, M. (1989). Severance Taxes And Market Structure In Exhaustible Resource Industries.

Babatunde, K., & Adeyemi, O. (2021). Environmental Taxation And Sustainable Development In Resource-Dependent Economies. *Environmental Economics And Policy Studies*, 23(2), 215-231.

Eneje, B. C., & Ikpor, I. M. (2017). Export Diversification Determinants In West African Subregion. *European Journal Of Accounting, Auditing And Finance Research, 5 (3)*, 76-88.

Eze, C., & Nwankwo, O. (2022). Extractive Industries And Environmental Sustainability In Nigeria. *Journal Of Environmental Policy And Governance*, 32(4), 356-371.

Ikpor, I. M., Enuma, I., & Okezie, B. N. (2019). Environmental Accounting And Sustainable Financial Performance: Evidence From The Nigerian Petroleum Industry. *International Journal Of Applied Environmental Sciences*, *14*(1), 85-93.

International Monetary Fund (Imf). (2021). *Fiscal Policies For Climate Change Mitigation*. Washington, Dc: Imf.

James, A. (2019). Natural Resource Taxation And Sustainable Development. *Energy Policy*, 128, 116-125.

Metcalf, G. (2020). Environmental Taxation And Fiscal Reform. *Oxford Review Of Economic Policy*, 36(2), 339-356.

Nwafor Ic,Ikpor, I. M., & Ede L. (2026). Impact Of Environmental Management Cost Disclosure On Firm Performance In Nigeria: Evidence From Oil & Gas Firms. *Journal Of Behavioural Accounting*, *2*(2), 69-81.

Nwankwo, B., & Ogbonna, G. (2020). Oil Exploitation And Environmental Degradation In The Niger Delta Region Of Nigeria. *African Journal Of Environmental Studies*, 14(1), 45-60.

Oecd. (2022). *Taxing Energy Use For Sustainable Development*. Paris: Oecd Publishing.

Oladipo, S., & Ilesanmi, F. (2021). Environmental Governance And The Challenges Of Oil Pollution In Nigeria. *Environmental Development*, 40, 100671.

Pigou, A. C. (1920). *The Economics Of Welfare*. London: Macmillan.

Sterner, T., & Köhlin, G. (2018). Environmental Taxation And Policy Instruments For Sustainability. *Annual Review Of Resource Economics*, 10, 387-405.

United Nations Environment Programme (Unep). (2019). *Environmental Assessment Of Ogoniland*. Nairobi: Unep.

United Nations. (2022). *Sustainable Development Goals Report*. New York: United Nations.

World Bank. (2023). *Fiscal Policies For Sustainable Natural Resource Management*. Washington, Dc: World Bank.