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RESEARCH ARTICLE

ACCOUNTING FOR THE FUTURE: INTEGRATED REPORTING, ECONOMIC RESILIENCE, NATIONAL SECURITY AND ENVIRONMENTAL INTEGRITY IN NIGERIA'S OIL AND GAS SECTOR

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ABSTRACT

Nigeria's oil sector is the primary source of revenue, but it also fuels environmental degradation and security challenges. In today's volatile world, marked by economic shocks, climate change, and political instability, Nigeria's heavy reliance on oil and gas leaves it particularly vulnerable. Traditional financial reporting falls short of capturing the true cost of growth, leaving the country at a crossroads. This paper examines Integrated Reporting (IR) as a solution that reconciles economic resilience, national security, and environmental integrity. Despite Nigeria's dependence on extractive industries, environmental degradation and resource-based conflicts have deepened security-sustainability paradox. Using a qualitative analysis, a descriptive and ex-post facto research design, and multiple linear regression, this study demonstrates how IR bridges fiscal discipline and ethical governance. Findings show that Integrated Reporting is a strategic tool for balancing economic, environmental, and security objectives in Nigeria's oil and gas sector, with higher IRDI scores linked to better firm performance and stakeholder trust. The study recommends that companies integrate financial and non-financial disclosures and provide training for management on IR standards. Hence, long-term economic solvency requires recognizing ecological health and social stability as fundamental pillars.

Keywords: Integrated Reporting, ESG, Economic Resilience, Sustainable Development, Natural Capital.

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1.0. INTRODUCTION

The Nigerian oil and gas sector is a keystone of the nation's economy, substantially contributing to foreign exchange earnings and government revenue (OPEC, 2022). However, the sector's ecological footprint and social implications, including oil spills, gas flaring, and community conflicts, have raised concerns about sustainability and accountability (Amnesty International, 2020). Globally, corporate reporting has evolved significantly over the past two decades. Stakeholders now demand more comprehensive information, encompassing environmental, social, governance, and strategic disclosures, in addition to traditional financial statements.

The highlighted shift has led to the emergence of Integrated Reporting (IR) as a broad reporting framework that provides a holistic account of how organizations create value over time. The primary purpose of an integrated report is to explain to the provider of financial capital how an organization creates, preserves, or erodes value over time. An integrated report benefits all stakeholders interested in an organization’s capability to create value, including employees, customers, suppliers, business partners, local communities, legislators, regulators, and policymakers (Integrated Reporting Framework (IRC), 2021).

The Petroleum Industry Act (PIA) is a significant piece of legislation in Nigeria that was signed into law on August 16, 2021. The PIA includes provisions to improve transparency and accountability in the industry, address environmental protection, and require oil and gas operators to take measures to minimize environmental impact, including remediating polluted areas. Major sources of GHG emissions in this sector include gas flaring and methane emissions; however, Nigeria has continued to take progressive steps to reduce its emissions. The country has pledged in its updated NDC to end gas flaring by 2030 and cut down on its fugitive methane emissions by 60% reduction by 2031 from 2018 baseline. With the introduction of the Petroleum Industry Act (PIA) 2021, which highlighted the need for corporate social responsibility and environmentally sustainable governance ward by stakeholder companies to the localities, the sector has undergone major reforms and restructuring (Oil and gas impact assessment report 2024).

In Nigeria, national security considerations are paramount, given the oil and gas sector's role as critical national infrastructure that underpins economic growth, government revenue, energy supply, and national development. Transparent reporting mechanisms, such as Integrated Reporting (IR), can support effective governance, risk management, and accountability, safeguarding national interests. Environmental integrity involves preserving natural resources through responsible corporate behaviour and sustainable practices, minimizing degradation, and contributing to sustainable development goals.

IR facilitates this by encouraging organizations to disclose their environmental impacts, sustainability initiatives, carbon emissions, waste management practices, and resource utilization strategies. Studies like Adegbite et al. (2019) highlight IR's potential in Nigeria. IR connects financial and non-financial performance, promoting transparency and accountability. This paper examines how IR can balance economic resilience, national security, and environmental integrity in Nigeria's oil and gas sector to enhance sustainability.

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Nigeria's oil and gas sector faces persistent challenges, including economic instability, security threats, environmental degradation, and inadequate corporate disclosure. A major concern is the escalating threat to national security from crude oil theft, pipeline vandalism, and sabotage, resulting in revenue losses, reduced production, and heightened operational risks. Limited disclosure on risk management and security strategies hinders stakeholders' ability to assess organizational resilience. Environmental degradation, including oil spills and gas flaring, has devastated host communities and ecosystems, particularly in the Niger Delta.

Traditional financial reporting frameworks fall short, omitting environmental performance, social responsibility, and governance structures. This restricts stakeholders' ability to make informed decisions about long-term viability. And resilience of oil and gas companies. Integrated Reporting (IR) can enhance transparency, accountability, and sustainability. However, its adoption in Nigeria's oil and gas sector remains limited. Hence, this prompts the need to examine the intersection of integrated reporting and economic resilience, national security, and environmental sustainability in Nigeria's oil and gas sector.

1.1. Objectives of the Study

The general objective of this study is to evaluate how Integrated Reporting can be leveraged to balance economic, security, and environmental integrity in Nigeria's oil and gas sector. The specific objectives are

1). To examine the effect of Integrated Reporting Disclosure Index (IRDI) on economic resilience.

2). To assess the impact of IRDI on environmental integrity.

3). To evaluate the relationship between IRDI and national security.

1.4 Research Questions

i). How does IRDI influence economic resilience?

ii). To what extent does IRDI impact on environmental integrity in oil & gas companies?

iii). What is the relationship between IRDI and national security?

1.5 Research Hypotheses

$H0_1$: IRDI has insignificant effect on economic resilience.

$H0_2$: There is no significant effect of IRDI on environmental integrity.

$H0_3$: IRDI has insignificant effect on national security.

2.0. LITERATURE REVIEW

2.1. Conceptual Framework

The Nigerian oil and gas industry is the most significant source of Greenhouse Gas (GHG) emissions in the country, particularly the fugitive methane emissions from the oil and gas industry (Oil and gas impact assessment report 2024 in FGN, 2021). The energy sector was the largest source of GHG emissions with 209 MtCO2e in 2018; 60% of the national total emissions. Fugitive emissions from oil and gas operations constituted the largest source of energy-sector emissions, accounting for 36% of total energy-sector emissions in 2018. (Revised NDC, 2021). The oil and gas sector has been a major contributor to Nigeria's economic growth; however, its operations have also generated substantial environmental costs, particularly in the Niger Delta. These costs include expenditures arising from oil

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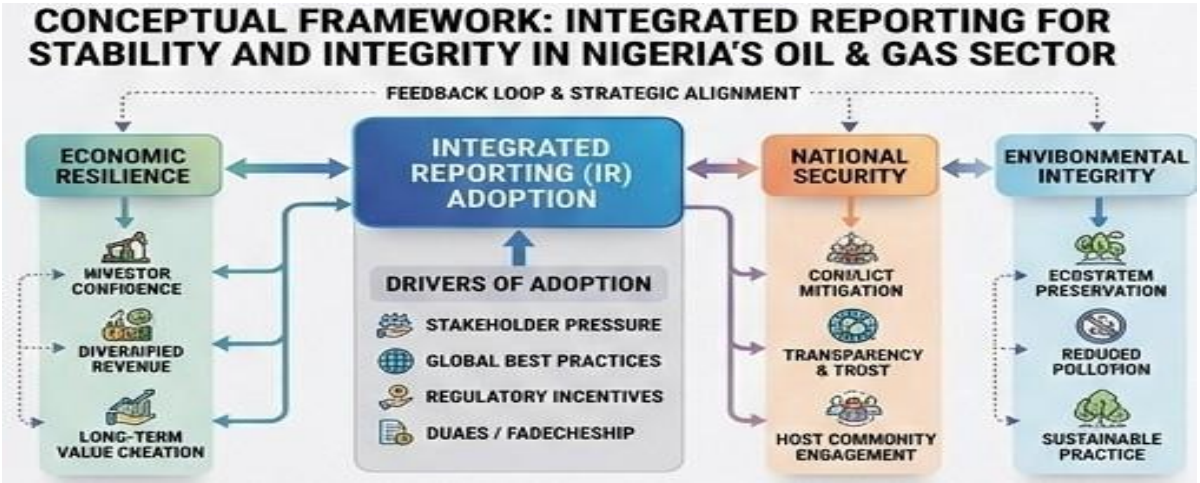
spills and other forms of environmental degradation (Elom, 2024). Integrated Reporting (IR) provides a framework for combining financial and non-financial information, helping organizations balance economic performance with environmental and social accountability (IIRC, 2021).

The growing importance of integrated reporting has been driven by increasing concerns about climate change, environmental degradation, corporate governance failures, energy security, and sustainable development. Consequently, governments, regulators, investors, and international organizations have advocated for enhanced disclosure frameworks capable of addressing these challenges while supporting long-term value creation Integrated Reporting (IR) offers a framework to connect financial and non-financial performance, promoting transparency and accountability. Leveraging Integrated Reporting (IR) suggests using IR framework to connect financial and non-financial performance, promoting transparency and accountability.

It helps organizations like those in Nigeria's oil sector, to report on six capitals: financial, manufactured, intellectual, human, social, and natural, show how they create value over time, engage stakeholders on sustainability and risks and above all improve decision-making and risk management. IRDI reduces conflict risks by improving transparency on revenue and environmental impacts, crucial in Nigeria's oil-producing regions, enhances governance of natural resources, supporting national security and reducing instability and balancing economic and social factors contributes to national stability, reducing security risks.



In the current research Integrated Reporting (IR) framework is used to connect financial and non-financial performance, promoting transparency and accountability with the help of Integrated Reporting Disclosure Index (IRDI). (IRDI) is a tool used to measure the extent of disclosure in Integrated Reporting (IR). The index typically assesses how well organizations report on various aspects like strategy, governance, performance, and outlook across financial and non-financial metrics. The framework proposes that Integrated Reporting serves as the primary explanatory variable influencing sustainable outcomes in Nigeria's oil and gas sector. Through enhanced corporate transparency, accountability, sustainability disclosures, and stakeholder engagement, organizations improve their economic resilience, strengthen national security through better risk governance and operational transparency, and promote environmental integrity through responsible environmental reporting and management. These three strategic outcomes collectively enhance sustainable value

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creation by improving financial sustainability, stakeholder trust, investor confidence, organizational reputation, and long-term competitiveness.

2.1.1. Integrated Reporting Disclosure Index (IRDI) and Environmental Integrity

In recent years, the urgency to address climate change and environmental degradation has grown on both the global and national levels. The Impact of IRDI on Environmental Integrity drives environmental accountability by reporting on natural capital usage, like water and land, reduced environmental risks and encourages proactive management of environmental impacts, like reducing gas flaring in Nigeria's oil fields. Stakeholder engagement enhances dialogue with communities on environmental concerns, building trust.

Agricultural regions suffered detrimental outcomes, resulting in both insufficient access to food and financial difficulties for affected individuals. Toxins associated with petroleum exposed residents to respiratory ailments, skin issues, and other health complications. The lack of safe water availability exacerbated health problems in impacted areas. The ongoing presence of oil spills and perceived lack of attention to restoration efforts intensified dissatisfaction among locals. The occurrence of social unrest, protests, and conflicts between communities and oil firms highlighted the socioeconomic repercussions of oil spills (Bisht et al., 2020 in Elom 2024).

Environmental management costs play a focal role in the financial performance of firms. The role of oil and gas firms in environmental sustainability has necessitated the need for a multidisciplinary approach to issues of environmental protection. Degradation, pollution, accelerated destruction of the ecosystem, and the depletion of non-renewable environmental biodiversity has adversely impacted the financial performance of firms. Investment in environmental research and development has brought about new ideas and innovations that have led to improved performance Jayeola Olabisi, Rotimi Williams Oladiran, Solomon Yinka Aransiola & Damilola Gloria Adenekan (2022).

The Impact of IRDI on Environmental Integrity drives environmental accountability by reporting on natural capital usage, like water and land, reduced environmental risks and encourages proactive management of environmental impacts, like reducing gas flaring in Nigeria's oil fields. Stakeholder engagement enhances dialogue with communities on environmental concerns, and building trust.

2.1.2. Integrated Reporting Disclosure Index and Economic Resilience and National Security

The Integrated Reporting Disclosure Index **(**IRDI) improves transparency, making it easier for investors to assess long-term viability. This can attract FDI and boost Nigeria's economic resilience (Eccles & Krzus, 2010). Integrating non-financial risks helps oil companies manage costs and opportunities better. For example, reporting on environmental risks can prevent costly spills. Stakeholder Trust: Builds trust with communities and regulators, potentially improving access to capital and licences. IRDI reduces conflict risks by improving transparency on revenue and environmental impacts, crucial in Nigeria's oil-producing regions. It enhances natural resource governance, supporting national security and reducing instability. Balancing economic and social factors contributes to national stability, reducing security risks.

The Nigerian oil sector significantly contributes to the economy but faces challenges in balancing economic gains with environmental and security concerns (Okafor and Opute, 2020). Integrated

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Reporting (IR) offers a framework to connect financial and non-financial performance, promoting transparency and accountability. It helps organizations like those in Nigeria's oil sector report on six capitals: financial, manufactured, intellectual, human, social, and natural; show how they create value over time; engage stakeholders on sustainability and risks; and, above all, improve decision-making and risk management.

In Nigeria's oil sector, leveraging Integrated Reporting (IR) involves: disclosing environmental impacts and mitigation strategies; demonstrating commitment to community engagement and security; and enhancing governance and transparency. However, IR adoption in Nigeria's oil sector is limited, hindered by regulatory framework challenges and stakeholder engagement (Adegbite et al., 2019). Research suggests localized approaches are necessary for effective IR implementation in emerging economies like Nigeria (Atkins and Maroun, 2015).

2.2. Theoretical Review

2.2.1. Accountability and Transparency Theory

The Accountability Theory, developed by Tetlock, Lerner, Vance, Lowry, and Eggett (2013), distinguishes between two perspectives on accountability: accountability as a virtue and accountability as a mechanism. As a virtue, accountability reflects an entity's willingness to accept responsibility and is viewed as a desirable trait. As a mechanism, accountability involves a process in which individuals justify their actions to another party who can judge and impose consequences. Transparency Theory holds that institutions should maintain openness by providing accessible information to foster accountability, public trust, and scrutiny. The theory is relevant in that, if accountability mechanisms, such as the disclosure of financial information and performance metrics and regular oversight by the CBN, are enforced in Nigerian commercial banks, they will enhance transparency, reduce corruption, and promote economic growth. This theory supports the idea that strengthening accountability can reposition banks to improve performance and contribute to Nigeria's economic growth.

2.2.2. Stakeholder Theory

Stakeholder theory is an organizational and business ethics framework that holds that a company’s primary goal is to create value for the parties affected by its operations, rather than focusing on maximizing profit for shareholders. Firms don’t exist only for shareholders. They must manage relationships with employees, communities, government, investors, NGOs, and others, because these groups affect the firm’s ability to survive. Stakeholder theory relates to the topic “accounting for the Future: Leveraging Integrated Reporting to Balance Economic Resilience, National Security and Environmental Integrity in Nigeria’s Oil & Gas Sector” for the following reasons.

- Nigeria’s oil & gas sector operates in the Niger Delta where host communities, militias, regulators, and global investors all have power over operations.
- Economic Resilience: If Shell/NNPC ignores community stakeholders, you get pipeline vandalism, shutdowns, and revenue loss. Integrated Reporting (IR discloses how firms invest in social/relationship capital, hence reducing this risk.
- National Security: Integrated Reporting, IR makes visible the firm’s social license to operate. When firms report on community engagement, local content, and security costs, stakeholders can assess if the firm is reducing conflict risk.

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- Environmental Integrity: Key stakeholders, including environmental NGOs and regulators, prioritize environmental integrity. Integrated Reporting (IR) prompts firms to disclose natural capital impacts, increasing transparency and making environmental degradation more visible. Essentially, IR extends accountability beyond financial metrics, empowering stakeholders.

2.2.3. Legitimacy Theory

According to the legitimacy theory, the community in which a business operates grants it the ability to function and access resources. Legitimacy theory is a business concept that examines how organizations, institutions, and their behaviours are perceived within society. Central to this theory is the idea of a social contract, in which the public expects organizations to act properly and desirably, fostering trust and support. Legitimacy is a critical resource for businesses, organizations, and institutions, as it underpins their ability to operate effectively within society.

Organizational legitimacy reflects the extent to which stakeholders perceive an entity's actions as appropriate, desirable, and consistent with prevailing social norms, values, and expectations. Consequently, many organizations regard legitimacy as a strategic asset that must be acquired, maintained, and enhanced through deliberate managerial actions. A high level of legitimacy can strengthen stakeholder support, enhance organizational reputation, facilitate access to resources, improve financial performance, and enable organizations to achieve their strategic objectives.

2.2.4. Legitimacy Theory (The Environmental and National Security Anchor).

Legitimacy Theory asserts that organizations function under an implicit social contract with society, whereby their survival and continued operations depend on meeting societal expectations and adhering to accepted norms and values. To preserve legitimacy, organizations are expected to engage in responsible environmental and social practices and provide transparent disclosures that demonstrate accountability to stakeholders.

They must ensure their operations are perceived as congruent with the values of the community. Nigeria's oil and gas sector faces a legitimacy crisis stemming from environmental degradation and perceived economic marginalization, which manifests as national security threats. Legitimacy Theory suggests adopting Integrated Reporting (IR) as a proactive strategy to regain and maintain organizational legitimacy. Through transparent reporting on environmental remediation, community development, and national security collaborations, oil companies can foster social acceptance, reducing conflict-driven disruptions.

2.3. Empirical Work

Onumoh et al. (2024) examined the effect of Integrated Reporting and various forms of capital on firm value among manufacturing companies listed on the Nigerian Stock Exchange. The study utilized secondary data obtained from the annual reports and financial statements of the sampled firms over the period 2011–2022. Firm value, measured using Tobin's Q, served as the dependent variable, while intellectual capital, human capital, manufacturing capital, social and relationship capital, and leverage were included as explanatory variables. Multiple regression analysis was employed to assess the relationship between integrated reporting capital components and firm value. The findings revealed that manufacturing capital and leverage exert a statistically significant influence on firm

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value. In contrast, intellectual capital, human capital, and social and relationship capital were found to have no significant effect on firm value during the study period.

Jayeola, Rotimi, Solomon and Damilola (2022) investigated on environmental reporting and performance of listed oil and gas firms in Nigeria. The study adopted an ex-post facto research design method using existing data from the financials of selected firms. Secondary data were extracted and the results of the unit-roots test informed the adoption of Auto-Regressive Distributed Lag (ARDL) and Error Correction Techniques. The study revealed a positive and statistically significant relationship between Environmental Management Cost (EMC) and Return on Capital Employed (ROCE), suggesting that investments in environmental management practices enhance corporate financial performance. Conversely, Environmental Research and Development Cost (ERDC) exhibited a negative and statistically significant relationship with ROCE, indicating that expenditures on environmental research and development were associated with a reduction in the firms' return on capital employed during the study period.

Olorunsemi (2025) carried out a research on insecurity threats focusing on sabotage, oil theft, militant violence, and kidnapping activities affecting oil operations in Ondo and Delta States between 2017 and 2022. Drawing upon the State Capacity Theory, the study employed a mixed-methods approach comprising survey questionnaires, in-depth interviews, and secondary data analysis. Findings reveal a high incidence of oil theft, kidnapping and violence against oil workers all significantly linked to diminished foreign direct investment inflows. While the Nigerian government has implemented legal reforms such as the Petroleum Industry Act (2021), weak enforcement and systemic governance failures persist, especially in managing local grievances and protecting oil infrastructure.

Alade and Odugbemi (2022) carried out a study to empirically investigate the effect of corporate characteristics (firm size, board size, share ownership structure and profitability) on the implementation of integrated reporting framework in listed oil and gas firms in Nigeria. Data were drawn from annual reports obtained from the companies' websites from the period of 2011 – 2020. The data was analyzed using descriptive statistics, a serial correlation test, and panel least square regression technique. The findings revealed a positive effect of corporate characteristics on integrated reporting frameworks, which is statistically significant for profitability, firm and board size. It was concluded that size of the firm, board size, and profitability have a positive and momentous statistical influence on implementation of integrated reporting framework, while share ownership structure has an insignificant influence.

3.0. METHODOLOGY

3.1. Research Design

The study adopted a descriptive and ex-post facto research design. It is descriptive because it seeks to categorize the current state of reporting in Nigeria, and ex-post facto because it relies on already existing audited financial and sustainability reports for the 2024 fiscal year

3.2. Population and Sample Size

The population consists of all oil and gas companies listed on the Nigerian Exchange (NGX). A purposive sampling technique was used to select ten (10) companies based on the availability of their 2024 integrated or sustainability reports and their representativeness across upstream and downstream

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sub-sectors. The sampled companies include Seplat Energy, Aradel Holdings, Oando Plc, Total Energies, Total Marketing, Conoil Plc, MRS Oil, 11 Plc, Eterna Plc, and Lekoil

3.3. Sources of Data and Operationalization of Variables

Secondary data were accessed from published online report from 2024 Audited Annual Reports, Corporate Sustainability/ESG Reports. and Nigerian Upstream Petroleum Regulatory Commission (NUPRC) bulletins. Dependent variable: IR Index, a weighted index based on the IIRC's 10 Content Elements. Each element is scored 0–1 (Total = 10). See appendix. Independent Variables: Economic Resilience: Measured by Return on Assets (ROA). National Security: Measured by the volume of Host Community Development Trust (HCDT) investment (₦ Billion). Environmental integrity: Measured by Carbon Intensity (kgCO2 per barrel of oil equivalent).

3.4. Model Specification

Linear relationship was established using Ordinary Least Squares (OLS) Regression Analysis to determine the relationship between Integrated Reporting (IR) and the three independent variables, Economic. Resilience proxied by Return on Assets (ROA), Host Community Spending's proxied by National Security (NSEC) and Carbon Intensity proxied by Environmental. Integrity (ENVI)-

The Model is a Regression Model presented thus: IR = {ROA, NSEC, ENVI}
The model is expressed in the econometric form: $IR = \beta0 + \beta1ROA + \beta2NSEC + \beta3ENVI + Ut$

Where: β0 = Intercept of the model; β1, β2, β3 = Parameter Estimates; IR= Integrated Reporting; ROA = Return on Assets; NSEC = National. Security; ENVI = Environmental. Integrity; Ut= Error term

3.5. Method of Data Analysis

Multiple linear regression analysis was used to analyze the relationship between Integrated Reporting and the three explanatory variables of the study. The following statistical and Econometric techniques were employed in the study: A priori Expectation from the Model

Variables Expected Sign, ROA+, NSEC+ and ENVI+

A priori expectation as indicated in the table 3.1, is that ROA NSEC coefficients will have a positive sigh (+) which denotes positive relationship with the dependent variable RI. Other tests necessary for explaining the long run model include: the coefficient of determination or adjusted R^2. It indicates how well the data fits the model. If it is high (i.e. > 50%), it shows a good fit for the model.

3.6. Test of Hypotheses

T-test: The individual test shows the individual significance of the independent variables on the dependent variable at 5% level. Decision Rule: If the probability of t-statistics > 0.05 we reject the Null hypothesis (H0) and conclude that there is a significant relationship.

F- Test:

F-test in the analysis is used to test the joint impact of the variables. Decision Rule: If the probability of the F-statistics > 0.05 we reject the Null hypothesis (H0) and accept the alternative (H1) and conclude that there is a significant relationship.

Statistical Tool: The statistical tool used is E-view 10

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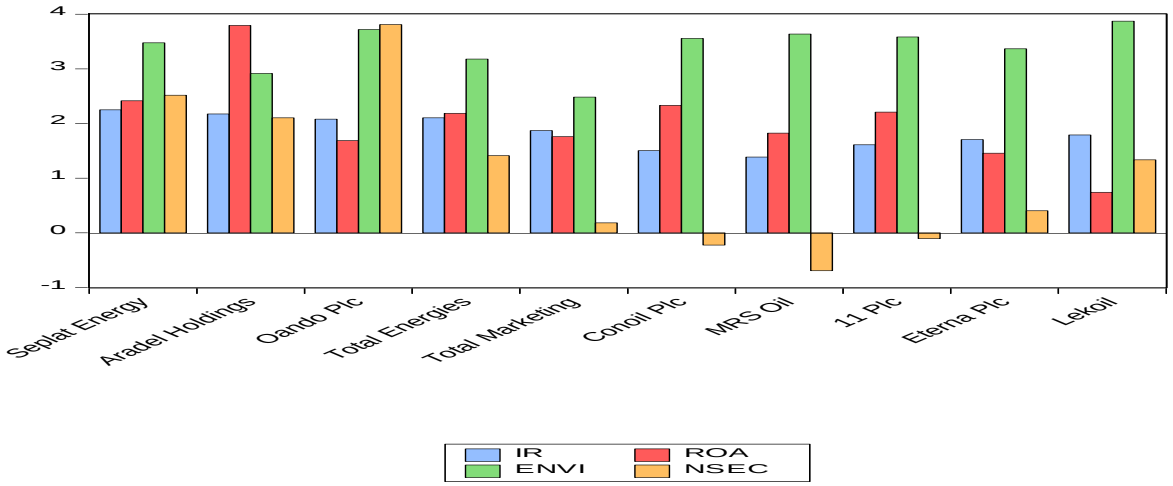
4.0. PRESENTATION OF RESULTS AND DISCUSSION

4.1. Visual Analysis of Chart (Figure 4.1)

Figure 4.1 presents a comparative analysis of the four key variables Integrated Reporting (IR), Return on Assets (ROA), Environmental Integrity (ENVI), and National Security (NSEC) across the ten sampled oil and gas companies for 2024.



The clustered bar chart represents a comparative analysis of your four key variables, Integrated Reporting (IR), Return on Assets (ROA), Environmental Integrity (ENVI), and National Security (NSEC) across the ten sampled oil and gas companies for 2024.

4.2. Overall Interpretation of the Variables

The analysis reveals varying performance across key metrics:

Integrated Reporting: Upstream firms like Seplat Energy and Aradel Holdings demonstrate more comprehensive disclosure frameworks.

Environmental Integrity: Downstream companies (Conoil, MRS Oil, 11 Plc) prioritize environmental compliance and safety standards.

Return on Assets: Significant volatility exists; Aradel Holdings shows high economic resilience, while MRS Oil and Lekoil face challenges.

National Security: Fluctuates; upstream firms with strong community ties (Seplat, Aradel) fare better, while others (MRS Oil, Conoil) face security-related challenges.

Key Findings from the Visual Chart

Two distinct models emerge:

A. **Upstream "Resilience" Model**: Seplat Energy and Aradel Holdings display a balanced profile, with positive performance across Integrated Reporting, Environmental Integrity, Return on Assets, and National Security. This suggests that leveraging Integrated Reporting (IR) helps firms balance economic, security, and environmental goals.

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B. **Downstream "Security Gap**: Firms such as MRS Oil, Conoil, and 11 Plc face "security deficits", with negative National Security outcomes. Despite strong environmental compliance, inadequate investment in social capital leads to security challenges, including supply chain disruptions and localized theft.

4.3. Regression Results Interpretation

Dependent variable: IR; Method: Least Squares; Sample: 1 10 Date: 08/03/26 Time: 00:45

Variable	Coefficient	Std. Error	t-Statistic	Prob.
ROA	0.029110	0.057668	0.504796	0.6317
ENVI	-0.270091	0.108874	-2.480762	0.0478
NSEC	0.183060	0.029080	6.295134	0.0007
C	2.504326	0.430023	5.823700	0.0011
R-squared	0.890961	Mean dependent variable		1.847774
Adjusted R-squared	0.836442	S.D. dependent variable		0.298366
S.E. of regression	0.120666	Akaike info criterion		-1.102406
Sum squared resid	0.087362	Schwarz criterion		-0.981372
Log likelihood	9.512032	Hannan-Quinn criterion.		-1.235180
F-statistic	16.34211	Durbin-Watson statistiics		2.218154
Prob(F-statistic)	0.002717			

An Ordinary Least Squares (OLS) regression analysis examined the impact of Return on Assets (ROA), Environmental Integrity (ENVI), and National Security (NSEC) on Integrated Reporting (IR). The regression output produced the following model:

IRDI = 2.504 + 0.029ROA - 0.270ENVI + 0.183NSEC

This result indicates that changes in ROA, ENVI, and NSEC influence the level of integrated reporting among the sampled firms.

Interpretation of Individual Variables

Return on Assets (ROA): Coefficient = 0.029110 : P-value = 0.6317

The coefficient of ROA is positive, indicating that an increase in profitability slightly increases integrated reporting disclosure. However, the p-value (0.6317) is greater than 0.05, meaning that the relationship is statistically insignificant. This implies that profitability does not significantly influence integrated reporting practices among the sampled companies.

Environmental Integrity (ENVI): Coefficient = -0.270091 P-value = 0.0478

Environmental integrity has a negative coefficient, indicating that an increase in environmental integrity disclosure reduces integrated reporting in the sample. However, the p-value (0.0478) is less than 0.05, indicating that the relationship is statistically significant. The result suggests that environmental integrity significantly influences integrated reporting practices among the firms.

National Security (NSEC) : Coefficient = 0.183060 P-value = 0.0007

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The coefficient of national security is positive and statistically significant. The p-value (0.0007) is less than 0.05, indicating a strong significant relationship between national security considerations and integrated reporting. The result implies that improvements in national security disclosure significantly increase integrated reporting practices.

Model Fitness (Goodness of Fit)

R^2 = 0.890961: This means that 89.1% of the variation in integrated reporting is explained by ROA, environmental integrity, and national security. The remaining 10.9% is explained by other factors not included in the model. Adjusted R^2 = 0.836442. The value confirms that the model remains strong even after adjusting for the number of variables.

F-Statistic (Overall Model Significance) : F-statistic = 16.34211 Prob(F-statistic) = 0.002717. Since the p-value is less than 0.05, the overall regression model is statistically significant. This means the independent variables jointly influence integrated reporting.

Durbin-Watson Test: Durbin-Watson = 2.218. A value close to 2 indicates that there is no autocorrelation problem in the regression model, meaning the model is statistically reliable.

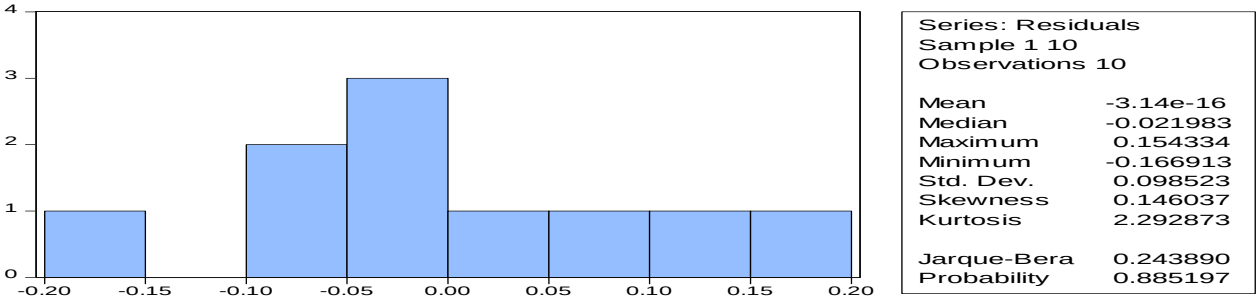
Hypothesis Testing

Hypothesis One: Return on assets has no significant effect on integrated reporting. P-value = 0.6317 > 0.05 Decision: Accept the null hypothesis. Conclusion: Return on assets does not significantly influence integrated reporting among the sampled firms.

Hypothesis Two: Environmental Integrity has no significant effect on Integrated Reporting. P-value = 0.0478 < 0.05. Decision: Reject the null hypothesis Conclusion: Environmental integrity significantly influences integrated reporting practices.

Hypothesis Three: National Security has no significant effect on Integrated Reporting. P-value = 0.0007 < 0.05. Decision: Reject the null hypothesis. Conclusion: National security significantly influences integrated reporting.

Normality test



The picture shows the Normality Test of the regression residuals for your thesis analysis. This test checks whether the error terms (residuals) of your regression model are normally distributed, which is an important assumption in Econometrics and regression analysis. The Jarque–Bera probability value

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of 0.885197 indicates that the residuals are normally distributed. The regression model satisfies the normality assumption, ensuring reliable statistical inference. The relationship between explanatory variables (National Security, Environmental Integrity, and integrated reporting variables) and the dependent variable is estimated without normality assumption violations, supporting the validity of the results.

4.4. Discussion of Findings

As nations confront the consequences of unsustainable development, transitioning to an environmentally sustainable and resilient future has become imperative. Economists recognize the financial benefits of addressing climate change and developing a low-carbon economy. A key aspect of this shift is adopting green financing mechanisms to mobilize resources for environmentally friendly projects. In Nigeria, oil spills have had far-reaching environmental impacts, including pollution of aquatic habitats, degradation of marine ecosystems, and loss of mangrove forests (Ozoemena, Gide, & Akinyebi, 2026).

The study found that national security has the strongest positive influence on integrated reporting, suggesting that firms linked to national economic stability prioritize it (consistent with Adegbite et al., 2019). Environmental integrity also significantly influences integrated reporting, indicating that environmental considerations remain an important driver of corporate disclosure. Integrated Reporting (IR) represents an innovative approach to business reporting, especially for public interest entities. In addition to financial capital, integrated reporting includes material information about manufactured, intellectual, human, social, relational, and natural capital (Velte, 2022). The Upstream "Resilience" Model in the graphical trend shows that Seplat Energy and Aradel Holdings exhibit a "Balanced Profile." All four bars are in the positive quadrant and relatively high.

Leveraging Integrated Reporting (IR) helps balance economic gains (ROA) with security (NSEC) and environmental (ENVI) goals. IR combines financial and non-financial information, providing insights into value-creation drivers such as environmental stewardship and social responsibility. Unlike traditional reporting, IR offers a holistic view of an organization's performance. Notably, profitability (return on assets) didn't significantly influence IR adoption, suggesting that regulatory, environmental, and national concerns drive adoption more than financial performance. The findings support IR's role in balancing economic, environmental, and national development priorities.

5.0. CONCLUSION AND RECOMMENDATIONS

The study concludes that Integrated Reporting (IR) is a strategic tool for balancing economic, environmental, and security objectives in Nigeria's oil and gas sector. Higher IR scores are linked to stronger firm performance and stakeholder trust. Based on the findings of the study, the following recommendations are made:

- Regulators should incentivize IR adoption
- Companies should integrate financial and non-financial disclosures
- Management training programs on IR standards are necessary

Companies should report on ESG initiatives to enhance public trust. Hence, accounting for the future requires a paradigmatic shift in which ecological health and social stability are recognized as fundamental pillars of long-term economic solvency.

Conflict of Interest

The authors declare that no conflict of interest exist in this study.

REFERENCES

Adegbite, E., Guney, Y., & Kwakye, T. (2019). Integrated reporting and corporate governance in Africa: The case of Nigeria. *Journal of Accounting in Emerging Economies*, 9(2), 153-172.

Adams, C. A. (2017). The Sustainable Development Goals, integrated thinking and the integrated report. *Sustainability Accounting, Management and Policy Journal*, 8(5), 518–536.

Ahmed Y. O Mohammed N. A. Suleiman T. Lateef O. M. (2024) Integrated reporting and firm value of listed manufacturing firm in Nigeria 10 (1) IJARIIE-ISSN(O) ijariie.com 1070

Alade, Muyiwa E. and Odugbemi, Olubunmi M. (2022) "Corporate Characteristics and Implementation of Integrated Reporting Framework of Listed Oil and Gas Firms in Nigeria," *International Review of Business and Economics:*6(1)DOI https://doi.org/10.56902/IRBE.2022.6

Amnesty International. (2020). Nigeria: Time for a new approach to the oil sector.

De Villiers, C., Rinaldi, L., & Unerman, J. (2017). Integrated Reporting: Insights, trends and next steps. *Accounting, Auditing & Accountability Journal*, 30(7), 1482-1517.

Eccles, R. G., & Krzus, M. P. (2010). One Report: Integrated Reporting for a Sustainable Strategy.

Elom, L. I. (2024). The effects of environmental cost on oil and gas performance in nigeria (a study of mainland oil) [Doctoral dissertation, Unicaf]. https://cdn.unicaf.org/websites/unicaf/sites/5/wp-

Integrated Reporting Council (IRC). (2021). International Integrated Reporting Framework. IRC. http://www.iasplus.com

Initiative for Climate Action Transparency (ICAT 2024) Oil and Gas Sector Impact Assessment Report.

Jayeola O., Rotimi W. O., Solomon Y. A. & Damilola G. A. (2022) Environmental Reporting and Performance of Nigerian Listed Oil and Gas Firms http://dx.doi.org./10.37355/acta

Lodhia, S., & Stone, G. (2017). Integrated reporting in an emerging economy context: Evidence

Ogunbodede R.O (2025) Sustainability Accounting Reporting and Financial Performance of Listed Oil and Gas Firms in Nigeria, *International Journal of Business Management and Economic Review* 8(4) http://ijbmer.org/ Page 140

Okafor, O. E., & Opute, A. P. (2020). Integrated reporting and corporate social responsibility in Nigeria. *Journal of Accounting and Management*, 10(2), 1-14.

Olorunsemi A. A.(2025) The shadow of sabotage: Unraveling the insecurity threats impacting oil operations in Ondo and Delta States of Nigeria *Kashere Journal Of Politics And International Relations* 3(3)3027-1177

Ozoemena, C. E., Gide, U. M. and Akinyebi, O.D. (2026), "Green finance in Nigeria: Policy frameworks, challenges and global comparisons*", International Journal of Development and Sustainability*, 15 (1) pp. 1-19.

OPEC. (2022). Nigeria facts and figures.

Velte, P. (2022). Archival research on integrated reporting: A systematic review of main drivers and the impact of integrated reporting on firm value. *Journal, Management and Governance* 26, 997-1061 nhttps://doi,org/10.1007/s

PIA (2021). Petroleum Industry Act. Federal Republic of Nigeria Official Gazette. No 142 Lagos 27th August 2021 Vol. 108. Retrieved from: http://www.petroleumindustrybill.com/wp-