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IFRS 6 Accounting Options and the Value Relevance of Oil & Gas Firms in Nigeria

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Abstract. The oil and gas industry plays a pivotal role in Nigeria's economy, contributing significantly to the country's economy. However, challenges such as oil price volatility, operational inefficiencies, environmental risks, and corruption undermine its potential. This study examines the relationship between IFRS 6 accounting options and the value relevance of Nigerian oil and gas firms, focusing on key financial metrics such as Tobin's Q, enterprise value, earnings per share, and price-to-book value. Using an ex post facto research design and inferential statistical techniques, data from listed oil and gas firms spanning 2012 to 2022 were analyzed. The findings reveal inefficiencies in translating exploration investments into firm value, with fixed asset intensity, cash investments, and intangible assets showing insignificant negative impacts on market valuation and equity returns. It was concluded that the accounting flexibility under IFRS 6 contributes to inconsistencies in financial reporting and investor skepticism. Recommendations include refining IFRS 6 guidelines to standardize the reporting of exploration and evaluation expenditures, enhancing transparency, and reducing managerial discretion. Additionally, professional accountants are enjoined to ensure faithful representation of financial information to bridge the gap between accounting data and market perceptions.

Keywords: Enterprise value, Fixed asset intensity, IFRS 6 accounting options, Price-to-book value, Value relevance.
JEL Classification: D21; M41.

1. INTRODUCTION

The oil and gas industry plays a crucial role in the Nigerian economy, contributing significantly to the country's GDP and foreign exchange earnings (Chukwuma-Ekwueme, 2023). The economic prosperity of the country is closely linked to its substantial crude oil reserves and exports. These exports not only contribute significantly to foreign exchange earnings and government revenue but also help strengthen the value of the local currency. As a major player in the global energy market, Nigeria's oil and gas firms face intense scrutiny from investors, regulators, and other stakeholders. This scrutiny is driven by numerous challenges facing the sector, including the volatility of oil prices, the complexity of operations and assets, and environmental and social risks (Efe, 2024; Coker *et al.*, 2024).

The oil and gas industry has been significantly affected by corruption, mismanagement, and a lack of transparency. These issues have raised concerns regarding the quality of financial reporting and the relevance of accounting information for Nigerian oil and gas companies. Transparent and reliable financial reporting is essential for these firms to attract investment, maintain their reputation, and ensure long-term operational sustainability (Ibrahim, 2017; Musa & Tanimu, 2017). Effectively addressing these challenges is critical for maintaining investor confidence and ensuring sustainable and responsible business practices.

Financial statements provide the essential information needed to evaluate a business's viability and profitability to various stakeholders. To fulfill this communicative function effectively, financial statements must possess certain qualitative characteristics that ensure their relevance for investor decision-making (Yekini *et al.*, 2022). These characteristics are defined by rules, principles, and standards established for the preparation, presentation, and disclosure of financial statements. However, the choice of accounting rules, standards, and options adopted by various organizations has been a subject of study for decades.

IFRS 6 specifically addresses the accounting treatment of exploration and evaluation (E&E) expenditures in the oil and gas sector. This standard outlines how to recognize, measure, and disclose these expenditures, which are characterized by inherent uncertainty and significant risk (Dolson *et al.*, 2011). The accounting choices permitted under IFRS 6 can substantially affect the financial statements of oil and gas companies, influencing their profitability, asset values, and overall financial performance. Consequently, this can shape investor perceptions and impact their investment decisions. The concept of value relevance—referring to how well accounting information helps investors anticipate future performance—is a critical element of financial reporting (Nwaogwugwu, 2020; Tunji *et al.*, 2023). Understanding the relationship between IFRS 6 accounting options and value relevance for oil and gas firms, particularly in Nigeria, is therefore essential.

This study aims to explore how IFRS 6 accounting options affect the value relevance of oil and gas companies listed on the Nigerian Stock Exchange (NSE). By analyzing the connection between accounting practices under IFRS 6 and measures of value relevance, the research will provide important insights into how IFRS 6 influences financial reporting for oil and gas firms in Nigeria. Additionally, it will highlight the role of accounting standards in promoting transparency, accountability, and effective capital allocation within the Nigerian energy sector.

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2. LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

2.1. Conceptual Review

2.1.1. Value Relevance

Value relevance is a term commonly used to describe the extent to which investors rely on accounting figures in financial statements when making equity investment decisions. It reflects the degree to which changes in accounting figures explain fluctuations in stock prices (Outa *et al.*, 2017). This concept measures how effectively accounting figures convey a company's value and influence stock prices. As noted by Outa *et al.* (2017), it examines how changes in accounting data align with stock price movements, offering insights into the effectiveness of financial reporting in reflecting a company's intrinsic value. This understanding aids both investors and regulators in making informed decisions and improving financial reporting practices.

This study conceptualizes value relevance in accounting as the extent to which financial information disclosed in a company's financial statements is associated with and predicts its market value. In other words, it evaluates whether the disclosed information is useful and influential in determining the company's stock price or overall market valuation. Specifically, it assesses the extent to which accounting data can explain or forecast stock prices, enterprise value, or other market-related indicators. Key metrics in this context include Tobin's Q, Enterprise Value (EV), Earnings Per Share (EPS), and the Price-to-Book Value Ratio (P/BV), each serving a distinct analytical role.

Tobin's Q (TQ) represents the ratio of a firm's market value to the replacement cost of its assets (Butt *et al.*, 2021). It connects market-based measures with the firm's book value, making it a valuable proxy for evaluating how well accounting measures predict future performance and market value (Lim & Mali, 2024). A higher TQ indicates that the market values the firm's assets above their replacement cost, reflecting intangible factors such as growth potential and market expectations (Ishaq *et al.*, 2021). By linking accounting measures like book value with market dynamics, TQ emphasizes the critical role of high-quality accounting information in modern financial analysis.

Enterprise Value (EV), as described by Ammirati (2022), measures a firm's total value, including debt and equity, but excludes cash. Platt *et al.* (2010) emphasized that EV is often used in valuation models to assess whether financial statement variables, like earnings, provide meaningful insights into a firm's market value. EV accounts for both equity market performance and financial leverage, offering a comprehensive metric that reflects the economic reality of a firm. The integration of debt structures into EV makes it a more inclusive measure for analyzing how financial statements represent market perceptions, ensuring value relevance for both equity and debt stakeholders.

Earnings Per Share (EPS) is a central measure in financial analysis, linking accounting performance with investor outcomes, which is fundamental to value relevance. EPS represents the portion of a company's profit allocated to each outstanding share (Idham & Nabila, 2023). It provides a concise, interpretable indicator of profitability and directly connects accounting performance with stock prices. Odoemelam *et al.* (2019) highlighted EPS as a cornerstone of financial analysis and a key driver of stock price movements. Empirical studies, such as those by Ogonda and Okiakpe (2022), confirm EPS's influence on share prices, solidifying its role as a vital metric in understanding the relevance of accounting data in equity markets.

The Price-to-Book Value (P/BV) ratio compares a firm's market value to its book value, reflecting how well book value captures the economic reality perceived by market participants (Irawan *et al.*, 2023). Consistency between the P/BV ratio and market expectations suggests high value relevance of accounting figures. Conversely, significant deviations may indicate that accounting figures fail to fully account for intangible assets, future growth, or risks. The P/BV ratio serves as a bridge between accounting measures and market perceptions, providing insights into intrinsic value (Doblas *et al.*, 2020). Ifada *et al.* (2019) noted that a higher P/BV ratio reflects the market's valuation of a firm's intangible assets or growth potential above its book assets, underscoring its role as a robust indicator of value relevance.

2.1.2. IFRS 6 Accounting Options

IFRS 6 – Accounting for Exploration and Evaluation of Mineral Resources is a specific standard issued by the International Accounting Standards Board (IASB) to address the accounting for exploration and evaluation (E&E) activities in the oil, gas, and mining industries. It provides companies involved in such activities greater flexibility in accounting for costs, recognizing the unique nature of exploration activities and the uncertainties involved (IFRS, 2023). IFRS 6 offers a framework that reflects the inherent uncertainty and unique circumstances of exploring and evaluating mineral resources. This flexibility allows firms to continue using existing practices for certain aspects of their accounting while ensuring consistency with other IFRS standards where applicable (Abdulrahman & Abdal, 2019).This implies that the standard gives companies in the oil, gas, and mining industries the opportunity to either expense or capitalize exploration costs, with the option to continue using their previous accounting policies under local GAAP. This flexibility allows companies to spread costs over time, aligning with the long-term nature of exploration activities and potentially smoothing earnings.

IFRS 6 provides various accounting options for entities engaged in E&E activities, focusing on the treatment of exploration and evaluation expenditures. These options accommodate the unique characteristics of the extractive industries, offering flexibility while improving the comparability of financial statements within the sector (IFRS, 2023). The selected accounting method can significantly impact a company's financial statements, particularly its assets and profitability (Giner & Pardo, 2015). While the flexibility of IFRS 6 enables companies

in the oil, gas, and mining industries to better reflect the uncertainties of their activities, it also introduces potential issues related to comparability, transparency, and the risk of earnings manipulation.

Ramanna and Watts (2012) argue that the lack of standardization in accounting for exploration activities can result in inconsistent financial reporting, reducing the reliability of financial statements. Although the flexibility of IFRS 6 is valuable for firms dealing with high levels of uncertainty in their exploration activities, it is crucial for users of financial statements to carefully consider the impact of these accounting choices.

2.2. Theoretical Framework

2.2.1. Positive Accounting Theory

This study is premised on Positive Accounting Theory (PAT), developed in 1986 by Watts and Zimmerman. PAT is based on the core economic assumption that individuals are motivated by self-interest and will act opportunistically to enhance their personal wealth. It focuses on real-world scenarios, aiming to analyze and predict how businesses account for specific transactions (Watts & Zimmerman, 1986). Essentially, it examines actual transactions and events, evaluates how companies record them, and seeks to understand the economic implications of these accounting choices. Drawing on these insights, the theory attempts to forecast how firms will manage similar transactions and events in the future.

PAT provides a framework to explain and predict accounting practices by considering the economic, regulatory, and contractual incentives of managers and firms (Watts & Zimmerman, 1990). It suggests that managers select accounting methods based on their utility, which is influenced by various factors. This theoretical approach offers a lens through which the application of International Financial Reporting Standard (IFRS) 6 and its implications for oil and gas firms can be analyzed.

PAT explains how managerial incentives and economic factors shape accounting choices under IFRS 6, particularly in the oil and gas sector. Managers often utilize the flexibility provided by IFRS 6 to capitalize exploration costs, manage earnings, and align reporting with their objectives, such as meeting benchmarks or minimizing political and regulatory costs (Ogiriki & Atagboro, 2022). While IFRS aims to enhance the value relevance of financial information, PAT posits that these choices frequently prioritize managerial utility over a faithful representation of economic reality. This behavior highlights the significant role of discretion in shaping financial reporting and its implications for the transparency, comparability, and value relevance of financial reports (Osho & Ayorinde, 2018).

Despite advancing the understanding of accounting choices, PAT has faced significant criticisms. It is often critiqued for its narrow focus on managerial self-interest, neglecting ethical considerations and broader accountability (Saragih *et al.*, 2021). Boland and Gordon (2010) pointed out its lack of normative guidance, which limits its ability to address societal needs or improve standards. Additionally, PAT's assumptions of market-driven efficiency and rational behavior are considered overly simplistic, ignoring power dynamics, social influences, and emerging issues like sustainability. Furthermore, it fails to provide guidance on how accounting standards could evolve to support sustainability reporting or enhance corporate governance.

2.3. Empirical Review

2.3.1. Exploration Fixed Asset Intensity and Value Relevance

In a study on fixed asset revaluation decision-making, Jefriyanto and Hadri (2019) described fixed asset intensity as the percentage of fixed assets in a company's total assets. This metric highlights the extent to which a company relies on physical, long-term assets for its operations and indicates the capital intensity of its business model. The study aimed to determine the effect of leverage, liquidity, fixed asset intensity, and company size on the decision to revalue fixed assets. It found that fixed asset intensity positively and significantly influences asset revaluation. This means that companies with a large proportion of their assets tied up in fixed assets are more proactive in revaluing their assets.

Abama *et al.* (2024) assessed the impact of asset intensity and other energy-associated CO2 emission drivers in the Nigerian manufacturing sector using a firm-level decomposition Logarithmic Mean Divisia Index (LMDI) analysis. The study revealed that asset intensity significantly affects emission growth in the Nigerian manufacturing sector. This finding indicates that higher asset intensity is linked to increased emissions. As manufacturing companies expand their physical asset base, their emissions tend to grow, highlighting a potential area for environmental improvement and policy intervention.

In the study by Nurtiyas and Nengzih (2023) on the effect of fixed asset intensity, debt level, sales growth, and profitability on tax management (focusing on consumer non-cyclical sector companies on the Indonesia Stock Exchange for the period 2019–2021), it was found that fixed asset intensity has no significant effect on tax management. This suggests that the proportion of fixed assets relative to total assets does not significantly influence how a company manages its taxes. While fixed assets may impact tax-related issues (such as depreciation), their relative proportion in the asset base is not a major determinant of tax management practices.

An examination of recent research reveals a dearth of studies on exploration and evaluation fixed asset intensity, particularly the influence of IFRS 6 accounting options on the value relevance of oil and gas companies listed on the Nigerian Exchange Group (NGX) . Therefore, this study aims to address this gap by defining exploration fixed asset intensity as the ratio of fixed assets procured, acquired, or built for exploration and evaluation to total assets or total revenue. This metric measures the extent to which a company's operations rely on exploration and evaluation fixed assets. The study, therefore, hypothesizes that:

H_{01}: *Exploration fixed asset intensity has no significant effect on price to book value ratio of listed oil and gas companies in Nigeria.*

2.3.2. Exploration Cash Investment and Value Relevance

González-Barros and José (2019) explored the returns on mining exploration investments in Australia, and found that exploration investments have fluctuating returns over the years. The study described exploration cash investment as funds allocated specifically for the exploration phase of a project, typically in industries such as mining, oil and gas, and renewable energy. These investments cover costs for seismic surveys, drilling operations, and analysis. If successful, such investments can lead to the discovery of new oil reserves, significantly enhancing the company's value and future revenue streams. However, if the exploration does not yield viable resources, the investment may be lost, underscoring the high-risk nature of exploration cash investments.

Researching the inherent risks related to exploration investments, Kustra *et al.* (2021) studied junior mining companies engaged in exploration activities in Canada, Britain, and Australia to evaluate financing sources for these projects in light of their associated risks. The study highlighted that exploration investments are typically funded through equity capital, a suitable option for high-risk investors. This approach allows companies to raise the necessary funds by offering shares to investors willing to take on the substantial risks associated with exploration in exchange for potential high returns.

The study by González-Barros and José (2019) focused on the returns of exploration investments and the risks associated with potential losses or gains from such investments. In contrast, Kustra *et al.* (2021) emphasized financing strategies, particularly equity financing, and the risks involved in raising funds for exploration projects. There is a need for research that integrates an understanding of exploration cash investments with the value relevance of oil and gas businesses. This study aims to address this gap by evaluating the influence of IFRS 6 accounting options on the value relevance of oil and gas companies listed on the Nigerian exchange Group (NGX). Therefore, the study hypothesizes that:

H_{02}: *Exploration cash investment has no significant effect on price to book value ratio of listed oil and gas companies in Nigeria.*

2.3.3. Exploration Intangible Asset Intensity and Value Relevance

Owiredu *et al.* (2014) described intangible asset intensity as a measure of the proportion of a company's total assets that are comprised of intangible assets. It directly relates to the definition of intangible assets by quantifying their significance within the company's overall asset portfolio. Higher intangible asset intensity indicates greater reliance on non-physical assets, such as intellectual property and brand recognition, which are critical for the company's operations and competitive positioning. Understanding this ratio helps evaluate the value and impact of intangible assets on the company's financial health and strategic direction.

Owiredu *et al.* (2014) explored the effects of intangible asset intensity on the volatility of stock prices using secondary data from 40 publicly traded companies in Ghana, categorized into four industry groups: basic pharmaceuticals, food products and beverages, information technology, and basic metals. The findings indicated that higher intangible asset intensity correlates with lower stock price volatility. However, this relationship varies by industry, with basic pharmaceuticals showing a positive correlation. This suggests that companies with higher intangible asset intensity generally experience less stock price volatility, though this trend is not consistent across all industries.

Chun and Nadiri (2016) analyzed how investments in intangible assets affect growth sources within the Korean economy. By creating a new industry-level dataset on intangible assets, the study assessed the impact of intangible-intensive industries on overall productivity growth from 1981 to 2008. The findings revealed that the role of intangible-intensive industries in boosting aggregate labor productivity has significantly increased, while the contribution from other industries has declined. This rise in the impact of intangible-intensive industries is primarily attributed to growth in total factor productivity rather than merely an increase in inputs. This indicates that innovations driven by intangible investments in these industries have become a major driver of productivity growth in Korea.

A review of the studies by Owiredu *et al.* (2014) and Chun and Nadiri (2016) highlight the need for research that examines the effects of intangible asset intensity on the price-to-book value of shares and its impact on the oil and gas sector in Nigeria. Consequently, this study aims to address this gap by investigating how IFRS 6 accounting options affect the value relevance of oil and gas companies listed on the Nigerian Stock Exchange (NSE). The study, therefore, hypothesizes that:

H_{03}: *Exploration intangible asset intensity has no significant effect on price to book value ratio of listed oil and gas companies in Nigeria.*

2.4. Conceptual Framework

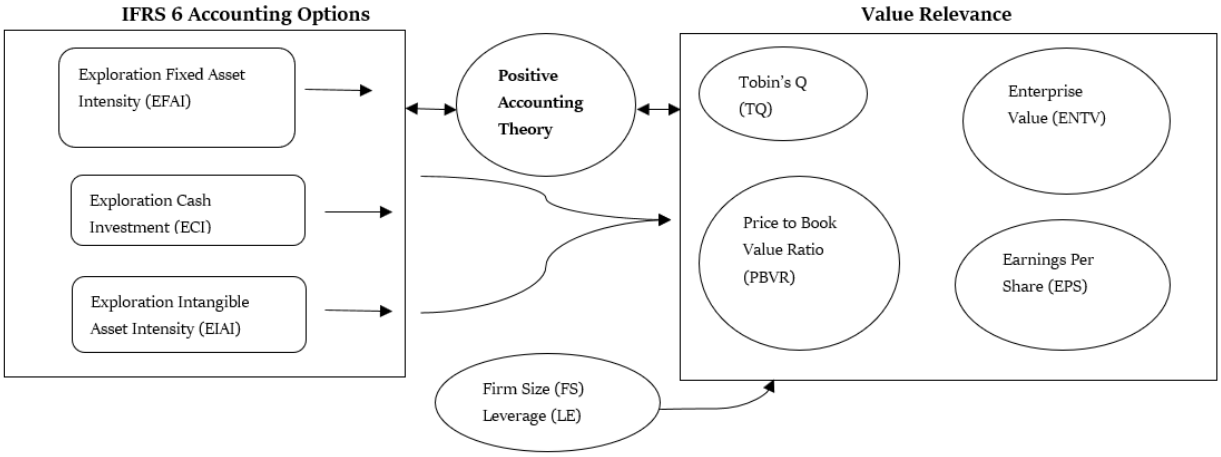

Figure 1.

3. METHODOLOGY

The study utilized an ex-post facto research design to gather data from oil and gas companies listed on the Nigerian Exchange Group as of December 31, 2022. The research period span 11 years, from 2012 to 2022. The study employed census sampling, resulting in 124 observations. Inferential statistical techniques, specifically ordered logistic regression analysis, were used to analyze the collected data. Descriptive statistics such as mean, median, mode, and standard deviation were employed to summarize and characterize the data. Data for this study were sourced from MachameRatios Data Collection, ensuring statistical validity and reliability. The study adhered to ethical research practices by maintaining data confidentiality and anonymity. All data used in the study are publicly accessible and do not contain personal or sensitive information.

3.1. Model Specification

The econometric function for the study was developed to explore the relationship between value relevance of Nigeria oil and gas firms and IFRS 6 accounting options. The model was stated as follows:

$$VR = f(EFAI, ECI, EIAI) \quad (1)$$

Based on the above functional relationship the models were as stated below:

Model 1

$$Log_{it}(TQ) = \beta_0 + \beta_1 EFAI_t + \beta_2 ECI_t + \beta_3 EIAI_t + \beta_4 FS_t + \beta_5 LE_t + \varepsilon_t \quad (2)$$

Model 2

$$Log_{it}(ENTV) = \beta_0 + \beta_1 EFAI_t + \beta_2 ECI_t + \beta_3 EIAI_t + \beta_4 FS_t + \beta_5 LE_t + \varepsilon_t \quad (3)$$

Model 3

$$Log_{it}(EPS) = \beta_0 + \beta_1 EFAI_t + \beta_2 ECI_t + \beta_3 EIAI_t + \beta_4 FS_t + \beta_5 LE_t + \varepsilon_t \quad (4)$$

Model 4

$$Log_{it}(PBVR) = \beta_0 + \beta_1 EFAI_t + \beta_2 ECI_t + \beta_3 EIAI_t + \beta_4 FS_t + \beta_5 LE_t + \varepsilon_t \quad (5)$$

3.2. Dependent Variable

Tobin's Q (TQ), Enterprise Value (ENTV), Earnings Per Share (EPS), and the Price-to-Book Value Ratio (PBVR).

3.3. Independent Variable

Exploration Fixed Asset Intensity (EFAI), Exploration Cash Investment (ECI), Exploration Intangible Asset Intensity (EIAI)

Control variable

Firm Size (FS) and Leverage (LE)

β_0 = Intercept, β_1- - - - - β_4 = variable coefficients, i = cross-sectional variable, t = time-series variable, ε - Error term.

The explanatory variables and the explained variable are predicted to have a positive connection, as shown by the a-priori expectation = β_1 β_2 β_3 $\beta_4 > 0$.

Table 1: Operationalization of Variables.

Variable	Type	Source	Description and Measurements of Variables	References
Tobin's Q (TQ)	Dependent	Audited Annual Financial Reports (MachameRatios)	Measured as the ratio of a firm's market value to the replacement cost of its assets	Butt, *et al.* (2021)
Enterprise Value (ENTV)	Dependent	Audited Annual Financial Reports (MachameRatios)	Measured total market capitalization including debt and equity, less cash.	Ammirati (2022)
Earnings Per Share (EPS)	Dependent	Audited Annual Financial Reports (MachameRatios)	Measured as earnings (net income)/ market value of equity	Odoemelam, *et al.* (2019)
Price to Book Value Ratio (PBVR)	Dependent	Audited Annual Financial Reports (MachameRatios)	Measured as year-end closing share price divided by net book value per share	Irawan *et al.* (2023), Meilin (2022)
Exploration Fixed Asset Intensity (EFAI)	Independent	Audited Annual Financial Reports (MachameRatios)	Measured as (PPE Exploration Asset/Total Asset)*100	M. Ak & Mulya, (2019), Cao *et al.*, (2020)
Exploration Cash Investment (ECI)	Independent	Audited Annual Financial Reports (MachameRatios)	Measured as Exploration Investing Cash/Total Asset	Kustra *et al.* (2021)
Exploration Intangible Asset Intensity (EIAI)	Independent	Audited Annual Financial Reports (MachameRatios)	Measured as (Intangible Exploration Asset/Total Asset)*100	Owiredu *et al.* (2014). Antonelli *et al.* (2023)

4. DATA ANALYSIS AND DISCUSSION OF FINDINGS

This section assesses the degree and significance of the relationship between IFRS 6 accounting options and the value relevance of listed oil and gas businesses in Nigeria.

4.1. Descriptive Analysis

Table 2 provides descriptive statistics for the study variables. The results show that TQ has an average value of 2727.375, indicating a high market valuation relative to the firms' asset replacement cost. A large standard deviation of 16633.95 implies significant variation in firm valuations, with some firms being highly valued in the market compared to their assets, while others have relatively lower valuations. The minimum (0.008) and maximum (157656.2) values indicate that the firms in this sample exhibit highly varied valuations, possibly reflecting differences in profitability, risk profile, or market perception. ENTV of 3717 reflects the average market valuation plus debt, providing a sense of the total firm value. A high ENTV standard deviation of 23398 suggests significant disparity in firm size across the sample, likely including both small and large firms. The minimum ENTV of 0.034 and maximum of 212814 show that some firms have limited market capitalization, while others are highly valuable.

The findings also indicate that the EPS mean value of 8.4 reflects average profitability per share among firms, while its standard deviation of 26 reveals substantial variability, meaning some firms are quite profitable per share, while others may be unprofitable. The minimum EPS of -89 and maximum of 144 highlight that while some firms experience negative earnings per share (losses), others are highly profitable. The Book Value per Share (BVPS) has an average of 83 units, suggesting that, on average, equity per share has a substantial book value, representing the accounting-based worth of the firm. A high standard deviation of 217 indicates that some firms have much higher or lower book values per share, often due to differences in accumulated earnings, debt levels, or asset quality. BVPS minimum of -5.7 and maximum of 1337 demonstrate that some firms may face financial distress (negative equity), while others have substantial book values, which can affect the firm's stability.

EFAI has an average of 24.7794, indicating a relatively high investment in fixed assets related to exploration. A standard deviation of 19.20854 suggests that investment levels vary significantly across firms. The minimum of 0 and maximum of 75.59 imply that some firms made no investment in exploration fixed assets, while the highest investment recorded is 75.59 units. The ECI is 12.43, which is lower than EFAI. A standard deviation of 13.97 suggests that investment levels, though less pronounced than EFAI, vary significantly across firms. The smallest non-zero investment recorded is 0.0446 units, indicating some level of minimal investment by firms, while the highest investment of 86.36 is significantly larger than the mean, showing the presence of outliers or firms with very high investments. EIAI has a mean of 1.7323, and a standard deviation of 4.9139 suggests that while most firms invest minimally, a few invest substantially. EIAI's minimum value of 0 and maximum of 34.1 show that some firms made no investment in intangible assets, while a few firms invest heavily in intangible exploration assets.

In Table 2, the average FS value of 11.3327 suggests that these firms span a range of sizes, likely measured on a log scale. A moderate standard deviation value of 3.1399 indicates some variance in size, capturing differences in firm scale and reach. A negative minimum firm size value of -1.9499 and a maximum of 15.1752 suggest that there are both very small and larger firms within this sample. LEV has an average of 9808.185, reflecting high debt levels relative to assets, which implies that many firms are heavily leveraged. A very high standard deviation of 82376.86 points to wide dispersion in debt carriage, while the range of 2.2934 to 847932.8 suggests that some firms have minimal debt, and others rely heavily on borrowed funds, which could imply varying risk profiles.

The findings present a complex financial landscape characterized by high variability in firm valuations, profitability, investment levels, and leverage. Policymakers can use these insights to promote sustainable growth, ensure financial stability, and improve market efficiency. Practitioners can engage in strategic asset allocation by considering the variability in exploration investments. Firms with low exploration investment levels may consider reallocating resources to enhance long-term growth potential, especially in fixed and intangible assets, which are critical for innovation and competitive advantage. Regulators should ensure that firms adhere to stringent financial disclosure requirements to provide stakeholders with transparent and comparable data. Additionally, policies should be considered to protect minority shareholders in distressed firms and ensure that capital markets function efficiently to reflect the true value of equity. The findings of BVPS (with values ranging from -5.7 to 1337) suggest that some firms face financial distress while others possess significant equity value, which could influence firm stability.

Table 2: Descriptive statistics.

Variable	Mean	Sd.	Min.	Max.	Obs.
TQ	2727.357	16633.95	0.0083523	157656.2	123
ENTV	3717	23398	0.034	212814	120
EPS	8.4	26	-89	144	124
BVPS	83	217	-5.7	1337	124
EFAI	24.7794	19.20854	0	75.58796	124
ECI	12.42864	13.97275	0.0445781	86.35944	124
EIAI	1.732297	4.913909	0	34.09848	124
FS	11.33274	3.139946	-1.949958	15.17518	124
LEV	9808.185	82376.86	2.293379	847932.8	124

Note: Results of mean, median, minimum and maximum of each variable from analysis of study data are shown above table.

4.2. Correlative Statistics

The results in Table 3 show that Tobin's Q, ENTV, EPS, and BVPS exhibit a weak negative correlation with EFAI (-0.1799, p=0.0490). This suggests that as EFAI increases, these performance indicators tend to decline slightly, and the relationship is statistically significant. This may indicate that investments in fixed assets could be perceived as reducing immediate financial performance or market valuation. The weak negative correlation (-0.0585, p=0.0585) with EIAI is also significant, suggesting that intangible investments may not directly enhance financial performance metrics in the short term. A weak positive correlation (0.1266, p=0.1628) exists but is statistically insignificant, implying that capital investment does not have a strong or consistent impact on these metrics. TQ, ENTV, EPS, and BVPS show a strong negative correlation of -0.6556 with firm size, which implies that larger firms tend to have lower TQ. This could suggest that larger firms have less growth potential or face market value constraints. A low positive correlation (0.3757, p=0.0000) exists between leverage and TQ, ENTV, EPS, and BVPS, and this relationship is statistically significant. This suggests that firms with higher leverage might experience slight improvements in these metrics, potentially due to leverage enhancing returns on equity.

EFAI has a negative and significant correlation value (-0.3498, p=0.0001) with ECI. This implies that higher investments in fixed assets might reduce capital investments, possibly due to resource allocation constraints. There is a weak positive but insignificant correlation (0.1307, p=0.1479) between EFAI and EIAI, suggesting that EFAI do not strongly align with exploration intangible asset intensity. A weak positive and significant correlation (0.3599, p=0.0000) between EFAI and FS suggests that larger firms tend to invest more in exploration fixed assets. A weak and insignificant negative correlation (-0.1337, p=0.1388) between EFAI and leverage shows no strong relationship between EFAI and LEV levels.

ECI has a weak negative but significant correlation (-0.1752, p=0.0517) with EIAI, indicating a slight trade-off between cash and intangible asset intensity. A weak negative but significant correlation (-0.2129, p=0.0176) between ECI and FS suggests that larger firms tend to invest less in liquid projects, possibly focusing more on other investment areas. A moderate positive and significant correlation (0.5467, p=0.0000) between ECI and LEV indicates that firms with higher leverage are likely to engage more in ECI, possibly as part of growth or expansion strategies. EIAI has a weak and insignificant positive correlation with FS (0.0517, p=0.5682), which suggests that intangible asset investment is not strongly related to FS. A weak negative and insignificant correlation (-0.0420, p=0.6431) between EIAI and LEV indicates that LEV does not have a notable impact on intangible investments. A negative and significant correlation (-0.4440, p=0.0000) between FS and LEV suggests that larger firms tend to rely less on LEV, possibly due to stronger internal financing capabilities or more conservative financial strategies.

The implications of these correlations emphasize the need for a nuanced approach to investment and financial strategy. For African exploratory firms, balancing fixed and intangible investments while leveraging financial resources strategically can enhance long-term growth and competitiveness. Policymakers, managers, and regulators must work collaboratively to create an enabling environment that supports these objectives.

Table 3: Correlation Statistics: IFRS 6 Accounting Options and Value Relevance.

	TQ ENTV EPS BVPS	EFAI	ECI	EIAI	FS	LEV
TQ, ENTV, EPS, BVPS	1.0000					
EFAI	-0.1779	1.0000				
	0.0490					
ECI	0.1266	-0.3498	1.0000			
	0.1628	0.0001				
EIAI	-0.0585	0.1307	-0.1752	1.0000		
	-0.0585	0.1479	0.0517			
FS	-0.6556	0.3599	-0.2129	0.0517	1.0000	
	0.0000	0.0000	0.0176	0.5682		
LEV	0.3757	-0.1337	0.5467	-0.0420	-0.4440	1.0000
	0.0000	0.1388	0.0000	0.6431	0.0000	

Note: Results of a pairwise correlation coefficient test of relationships amongst variables of the study are shown in above table.

4.3. Post Estimation Tests

4.3.1. Test for Multicollinearity

Table 4 shows that the VIF values for all variables are well below 10. Therefore, multicollinearity is minimal, implying that each independent variable contributes unique information to the model. This strengthens the model's reliability and suggests that the parameter estimates for these variables are unlikely to be distorted due to collinearity.

Table 4: Test for Variance Inflation Factor (VIF).

Variable	VIF	1/VIF
EFAI	1.34	0.7479
ECI	1.70	0.5898
EIAI	1.04	0.9602
FS	1.45	0.6904
LEV	1.80	0.5557
Mean VIF	1.46	

Note: Results of a test of multicollinearity relationships amongst variables of the study are shown in above table.

4.3.2. Regression Analysis

The regression analysis in the study employed four different regression models (pooled, fixed effects, random effects, and robust) to examine the relationship between IFRS 6 accounting options and the value relevance of Nigerian oil and gas firms.

4.3.2.1. Model 1: IFRS 6 Accounting Options and Tobin's Q among Oil and Gas Firms

This model analyzes the relationship between IFRS 6 accounting options and TQ for Nigerian oil and gas firms, using various regression models to assess the influence of independent variables such as EFAI, ECI, EIAI, with FS and LEV as control variables.

The regression results in Table 5 show that all models are based on 123 observations, ensuring consistency across estimations. The F-statistic for the Pooled Model is 19, indicating moderate model significance. The F-statistic for the Fixed Effects Model is 8.8, suggesting lower model strength, while the Robust model has a high F-statistic of 1,396,823, reflecting significant variation. The R-squared (R^2) for the Pooled model is 0.45 and for the Fixed Effects model is 0.3, showing that the models explain 45% and 30% of the variation in TQ, respectively. The Adjusted R^2 values drop to 0.42 for the Pooled model and 0.18 for the Fixed Effects model, indicating reduced explanatory power when accounting for model complexity. The Root Mean Squared Error (RMSE) ranges from 10,584 to 12,634, indicating the typical deviation of observed TQ from the model's predictions.

EFAI coefficients range from 36 to 63 across all four models but have no significant effect on TQ. The positive coefficient values suggest that higher investment in fixed assets for exploration may be associated with a slight increase in TQ. The coefficients for ECI are -94 and -31 across models but have no statistical significance on TQ. The negative values imply that increased cash investments in exploration may reduce TQ. The coefficients for EIAI range from -131 to -144, indicating a negative relationship with TQ, suggesting that higher investment in intangible assets for exploration reduces firm value as measured by TQ. However, EIAI has no statistical significance on TQ.

FS has coefficients of -3,272* and -11,862*, showing a consistently negative and statistically significant ($p < 0.001$) influence on TQ. This suggests that larger firms in the Nigerian oil and gas sector tend to have lower TQ, indicating a diminishing market valuation relative to assets for bigger firms. The coefficients for LEV are 0.03 and 0.004, indicating a very weak positive relationship between LEV and TQ. These coefficients are not statistically significant, suggesting that LEV does not meaningfully influence TQ in Nigerian oil and gas firms.

Table 5: Model 1: IFRS 6 Accounting Options and Tobin's q among Nigeria Oil and Gas Firms.

Variable	Pooled1	Fixed1	Random1	Robust1
EFAI	36	63	36	63
ECI	-94	-31	-94	-31
EIAI	-131	-144	-131	-144
FS	-3272***	-11862***	-3272***	-11862
LEV	0.03	.004	.03	.004
_cons	39994***	136073***	39994***	136073
Obs	123	123	123	123
F	19	8.8	0	1396823
R2	0.45	0.3	0	0.3
R2_a	0.42	0.18	0	0.27
rmse	12634	11173	12634	10584

Note: * p<.05; ** p<.01; *** p<.001.

Table 4 shows the estimated pooled, fixed, random and robust coefficients for the effects of IFRS 6 accounting options and other control variables on Tobin's q.

4.3.2.2. Model 2: IFRS 6 Accounting Options and Enterprise Value among Oil and Gas Firms

The model examines the relationship between IFRS 6 accounting options and ENTV among oil and gas firms in Nigeria, considering different model specifications: pooled, fixed, random, and robust effects. Findings from Table 6 show that the number of observations is consistent across all models, with 120 data points, providing a solid sample size. The F-statistic is 46 for the pooled model, indicating overall significance. However, the fixed and random models show F-statistics of 19 and 0, respectively, suggesting a reduced fit in these models. The pooled model has an R-squared (R^2) of 0.67 and an adjusted R-squared (R^2) of 0.65, indicating that 67% of the variance in ENTV is explained by the independent variables. The fixed effects model explains 48% of the variance ($R^2 = 0.48$) but drops in explanatory power after adjusting for model complexity (adjusted $R^2 = 0.40$). The Root Mean Square Error (RMSE) is lowest for the pooled and robust models (13,754), suggesting they might be better at predicting enterprise value.

EFAI coefficients were negative across all models (-3.8 for pooled, random, and robust; 20 for fixed). This suggests that higher investment in fixed assets is associated with a decrease in enterprise value. However, this effect is not statistically significant. Additionally, the coefficients for ECI are negative in all models (-106 for pooled, random, and robust; -165 for fixed), implying that increased cash investments in exploration reduce firm valuation. ECI does not have a statistically significant influence on enterprise value. EIAI maintained consistently negative coefficients in all models (-108 for pooled, random, and robust; -36 for fixed), showing that investment in intangible assets correlates with a reduction in enterprise value, which may reflect inefficient use of intangible resources or market skepticism toward such investments. No statistically significant effect exists between EIAI and enterprise value.

The coefficients for FS were strongly negative and highly significant across all models (-2,210 for pooled, random, and robust; -2,836 for fixed at *p < 0.001). This implies that larger FS is associated with lower ENTV, possibly suggesting that larger firms face diminishing returns or market penalties (e.g., inefficiencies). LEV coefficients were positive and highly significant across all models (0.19 for pooled, random, and robust; 0.18 for fixed at *p < 0.001), indicating that debt financing is viewed favorably by the market, potentially due to its tax shield benefits or as a signal of growth opportunities.

Table 6: Model 2: IFRS 6 Accounting Options and Enterprise Value among Nigeria Oil and Gas Firms.

Variable	Pooled1	Fixed1	Random1	Robust1
EFAI	-3.8	20	-3.8	-3.8
ECI	-106	-165	-106	-106
EIAI	-108	-36	-108	-108
FS	-2210***	-2836***	-2210***	- 2210***
LEV	0. 19***	0.18***	0.19***	0. 19***
_cons	28444***	35598	28444***	28444***
Obs	120	120	120	120
F	46	19	0	0
R2	0.67	0.48	0	0
R2_a	0.65	0.4	0	0
rmse	13754	13971	13754	13754

Note: * p<.05; ** p<.01; *** p<.001

Table 4 shows the estimated pooled, fixed, random and robust coefficients for the effects of IFRS 6 accounting options and other control on the enterprise value.

4.3.2.3. Model 3: IFRS 6 Accounting Options and Earnings Per Share Among Oil and Gas Firms

The model presents the results of four different statistical regression models (Pooled, Fixed Effects, Random Effects, and Robust) analyzing the relationship between IFRS 6 accounting options and EPS for Nigerian oil and gas firms. The regression analysis results in Table 4 indicate that R-squared values are low across the models, with the highest being 0.084 in the Pooled model. This suggests that the independent variables explain only a small portion of the variance in EPS, while negative Adjusted R^2 values in the fixed effects model suggest that the

addition of variables does not improve the model's explanatory power. Additionally, the F-statistic in all models is low, indicating that the models as a whole lack significance. The consistent root mean square error (RMSE) values, ranging from 23 to 25, suggest stable but limited predictive accuracy of the models.

In all models, the coefficient for EFAI is relatively low, ranging from -0.016 to 0.048. The negative coefficient in the Pooled model suggests a very slight inverse relationship between EFAI and EPS, but the small size of these coefficients indicates a minimal practical effect. This implies that investment in fixed assets has an insignificant influence on EPS, suggesting that fixed asset utilization may not be a major driver of profitability in Nigerian oil and gas firms. Coefficients for ECI across models are positive, ranging from 0.14 to 0.24, implying that as exploration cash investments increase, EPS also increases, though these effects remain statistically insignificant. This suggests that while ECI may not be a significant factor in enhancing shareholder value through EPS in these firms, it does show a positive but insignificant trend. EIAI shows a negative relationship with EPS in the Pooled and Random models (-0.42 and -0.14), while the Fixed Effects model shows a very slight positive relationship (0.061). These results indicate that higher investment in intangible assets may be associated with lower EPS, possibly due to challenges in deriving immediate financial returns from intangibles within the sector. This implies that oil and gas firms may not derive substantial short-term gains from intangibles, likely due to the industry's asset-intensive nature and limited emphasis on intangible investments.

FS is significant in the Pooled model (2.5**) at the 1% level, indicating a strong positive relationship with EPS. This shows that larger firms are generally associated with higher EPS, as larger firms tend to have better resources and revenue-generating capacities. However, FS becomes insignificant in the Fixed Effects model (-0.000023), indicating that firm size does not have the same consistent effect across all models. The positive impact of FS on EPS suggests economies of scale in the industry, though this effect may vary depending on the model applied. LEV coefficients are very close to zero across models, with small positive and negative values. These results imply that leverage has a negligible effect on EPS, suggesting that high debt levels do not necessarily translate into profitability for these firms. Simply put, in the oil and gas sector, debt financing may neither contribute to nor hinder earnings on a per-share basis.

Table 7: Model 3: IFRS 6 Accounting Options and Earnings per Share among Nigeria Oil and Gas Firms.

Variable	Pooled1	Fixed1	Random1	Robust1
EFAI	-0.016	0.048	0.017	0.017
ECI	0.14	0.24	0.21	0.21
EIAI	-0.42	0.061	-0.14	-0.14
FS	2.5**	-0.000023	1.9	1.9
LEV	0.000015	-0.026	-0.000011	-0.000011
_cons	-21*	-0.026	-16	-16
Obs	124	124	124	124
F	2.2	0.28	0	0
R2	0.084	0.013	0	0
R2_a	0.046	-0.15	0	0
rmse	25	23	23	23

Note: * p<.05; ** p<.01; *** p<.001.

Table 4 shows the estimated pooled, fixed, random and robust coefficients for the effects of IFRS 6 accounting options and other control on earnings per share.

4.3.2.4. Model 4: IFRS 6 Accounting Options and Book Value Per Share among Oil and Gas Firms

In the analysis for this model, various financial variables were tested for their effect on book value per share across different regression models (Pooled OLS, Fixed Effects, Random Effects, and Robust) among Nigerian oil and gas firms. The regression results in Table 6 indicate that the F-statistic is significant in the Pooled (4.6) and Fixed Effects (7.6) models but insignificant for the Random Effects and Robust models, suggesting that the predictors in the Pooled and Fixed Effects models jointly explain some of the variance in book value per share. The Pooled model has an R-squared (R^2) of 0.16, indicating that 16% of the variation in book value per share is explained by the model. The adjusted R^2 (0.13) suggests modest explanatory power after adjusting for the number of predictors. The Fixed Effects model shows a higher R^2 of 0.26, meaning it explains more variance (26%) than the Pooled model, likely due to controlling for individual differences across firms. However, the Random Effects and Robust models yield an R^2 of 0, suggesting that they explain virtually no variance in book value per share. This could be due to model assumptions or insufficient explanatory power in the selected variables. The Root Mean Square Error (RMSE) values of 203 in the Pooled model and 84 in the Random Effects model indicate variability in prediction accuracy across models. A lower RMSE, as seen in the Random Effects model, suggests a better fit to the observed data for book value per share.

In the Fixed Effects and Random Effects models, as shown in Table 6, EFAI has a statistically significant negative effect on book value per share, with a coefficient of -4.3, significant at the *** level ($p < 0.001$). This indicates that higher intensity in exploration fixed assets correlates with a reduction in book value per share. This could suggest that higher investments in fixed assets may not necessarily translate into a positive impact on the book value of equity per share, possibly due to high capital expenditures or depreciation costs in the oil and gas sector. ECI has no statistically significant effect on book value per share across any models (Pooled, Fixed, Random, or Robust), as indicated by the low coefficients, which range from -1.4 to -0.56. This suggests that

variations in cash investments for exploration are not strong predictors of book value changes. EIAI does not have a statistically significant relationship with BVPS, implying that intangible assets tied to exploration do not translate directly into shareholder value, at least in the short term.

FS has a strong, significant positive effect in the Pooled OLS model (33***, $p < 0.001$) and in the Random Effects model (25*, $p < 0.05$), but an insignificant effect on book value per share in the Fixed Effects model (20). These results highlight that larger firms tend to have a higher book value per share, possibly due to their ability to leverage scale, resources, and market presence to improve equity book value. The significance in the Pooled and Random Effects models suggests that firm size contributes positively to the equity book value per share. Coefficients of LEV across all models are small (ranging from 0.000074 to 0.0005) and insignificant. This indicates that LEV has no meaningful effect on the book value per share of oil and gas firms, suggesting that debt levels in the oil and gas sector are often substantial and do not significantly alter the equity book value of these firms.

Table 8: Model 4: IFRS 6 Accounting Options and Book Value Per Share among Nigeria Oil and Gas Firms.

Variable	Pooled1	Fixed1	Random1	Robust1
EFAI	-2	-4.3***	-4.3***	-4.2
ECI	-1.4	-0.47	-0.56	-0.56
EIAI	-2.5	0.4	0.47	0.47
FS	33***	20	25*	25
LEV	0.0005	0.000074	0.000092	0.000092
_cons	-226**	-33	-86	-86
Obs	124	124	124	124
F	4.6	7.6	0	0
R2	0.16	0.26	0	0
R2_a	0.13	0.15	0	0
rmse	203	85	84	84

Note: * p<.05; ** p<.01; *** p<.001

Table 4 shows the estimated pooled, fixed, random and robust coefficients for the effects of IFRS 6 accounting options and other control on the book value per share.

4.4. Discussion of Findings

The findings of this study are closely linked to positive accounting theory. The managerial use of IFRS 6 to capitalize exploration costs aligns with the premise of positive accounting theory, which highlights opportunistic behavior. Managers may capitalize these costs to present a stronger balance sheet or smooth earnings, even if such practices reduce transparency and comparability. For example, the lack of significant relationships between exploration investments and performance metrics like Tobin's Q or EPS could suggest that these accounting choices prioritize managerial utility over reflecting economic reality. Positive accounting theory (PAT) underscores how managers may manipulate financial reports to meet benchmarks or minimize costs, such as taxation or regulatory scrutiny. For instance, the significant negative relationship between firm size and Tobin's Q or enterprise value may result from managerial choices to understate market-facing metrics to avoid external pressures.

The mixed findings on exploration intangible asset intensity (EIAI) across models align with the studies of Jefriyanto and Hadri (2019), Abama *et al.* (2024), and Nurtiyas and Nengzih (2023), showing that companies with high fixed asset intensity are proactive in revaluation, possibly to reflect fair value in financial statements. This implies that fixed asset intensity reflects a capital-intensive business model, commonly seen in industries like oil and gas. While it signals operational scale, its limited or negative significance in financial outcomes suggests inefficiencies, high maintenance costs, or regulatory challenges.

The negative and insignificant effect of Exploration Cash Investments (ECI) on Tobin's Q and enterprise value aligns with González-Barros and José (2019), indicating that exploration cash investments are inherently risky, with fluctuating returns depending on the success of resource discovery. Conversely, its positive but insignificant influence on earnings per share supports Kustra *et al.* (2021), which suggests that reliance on equity financing for exploration underscores its speculative nature and potential to dilute shareholder value. These results indicate that while exploration cash investments hold the promise of high returns, their lack of immediate positive impact on firm value metrics highlights the high-risk, long-term nature of such activities.

The findings on Intangible Asset Intensity (EIAI) consistently show negative and insignificant results across all models, aligning with the conclusions of Chun and Nadiri (2016) and Owiredu *et al.* (2014). Owiredu *et al.* (2014) found that higher intangible asset intensity is associated with reduced stock price volatility, though this effect varies across industries. These findings suggest that in industries like oil and gas, which rely heavily on physical assets, intangible investments may not yield immediate financial returns. This contrasts with sectors such as technology, where intangible assets are central to innovation and value creation.

The regression results reveal a consistent negative and statistically significant relationship between firm size and Tobin's Q, indicating that larger firms in the oil and gas sector tend to experience declining market valuations relative to their asset base. This trend may be driven by challenges such as operational inefficiencies, high fixed costs, and market skepticism, exacerbated by the sector's exposure to oil price fluctuations and

regulatory pressures. For Nigerian oil and gas firms, these findings align with insights from Efe (2024) and Coker *et al.* (2024), who highlight governance issues and operational complexities as persistent challenges.

Firm size positively impacts EPS, suggesting that larger firms benefit from economies of scale in generating earnings. However, the variability in results across models suggests that operational inefficiencies and transparency issues in financial reporting could weaken this relationship. The negative effect of fixed asset investments on BVPS underscores the burden of high depreciation and operating costs in the sector, which can diminish equity values. These findings highlight the critical need for enhanced capital efficiency and more strategic asset utilization to improve financial outcomes.

Leverage showed a positive and significant relationship with enterprise value, likely due to the perception of debt as a financing tool that signals growth potential or benefits from a tax shield. However, in the broader Nigerian context, financial mismanagement and corruption may temper the benefits of leverage, as firms face challenges in utilizing debt efficiently for value creation (Ibrahim, 2017).

Investments in fixed assets, cash, and intangibles related to exploration showed generally negative but statistically insignificant relationships with Tobin's Q and enterprise value. This suggests inefficiencies in converting these investments into firm value, potentially due to the capital-intensive nature of the industry, environmental risks, and oil price volatility. IFRS 6, which governs exploration and evaluation (E&E) expenditures, permits diverse accounting treatments that can influence how these investments are presented in financial statements. Such variability may fuel investor skepticism about the value relevance of these expenditures (Dolson *et al.*, 2011). The regression findings, combined with industry-specific challenges, reveal shortcomings in the value relevance of accounting information. Indicators like Tobin's Q and BVPS demonstrate a weak correlation between accounting metrics and market perceptions, raising concerns about the reliability of financial reporting. Transparent and accurate reporting, as highlighted by Musa and Tanimu (2017), is crucial for attracting investors, especially in a sector grappling with corruption and regulatory challenges.

The study's findings hold important implications for policymakers, professionals, and stakeholders in Nigeria and Africa, particularly within the oil and gas sector. The findings highlight the inefficiencies and inconsistencies in how exploration and evaluation (E&E) expenditures are accounted for under IFRS 6. Policymakers should mandate clearer guidelines to standardize reporting, enhance transparency, and reduce managerial opportunism. Given the inefficiency in translating exploration and fixed-asset investments into firm value, policies that incentivize capital efficiency and innovation could support long-term industry growth. Accountants and auditors must adopt more faithful and transparent reporting methods to bridge the gap between accounting metrics (e.g., Tobin's Q, BVPS) and market perceptions. This aligns with professional ethics and boosts investor confidence. Managers should prioritize efficient asset utilization to counteract the high depreciation and operating costs that diminish equity values. This includes re-evaluating capital-intensive projects for their economic feasibility.

The weak correlation between accounting information and market valuation metrics points to the need for more reliable reporting systems to attract foreign and domestic investors. This is particularly vital for countries like Nigeria, where the oil and gas sector is a major economic contributor. Governments and institutions across Africa should invest in capacity building to enhance the skills of professionals managing the capital-intensive oil and gas sector. Training on international best practices in accounting and financial management can be transformative. The findings indicate the limited immediate financial returns from intangible investments in the oil and gas sector, unlike technology or innovation-driven industries. African economies should diversify investments into sectors where intangible assets can drive growth and value creation.

For the Nigerian oil and gas sector, the negative relationship between firm size and Tobin's Q highlights the need for improved operational efficiency to enhance market valuation. Addressing high fixed costs and inefficiencies should be a priority for firms and regulators alike. Industry stakeholders must collaborate to tackle sector-specific challenges such as regulatory pressures and environmental risks. This requires a collective effort to foster innovation, enhance reporting standards, and promote sustainable practices.

5. CONCLUSION AND RECOMMENDATIONS

The study examined the relationship between IFRS 6 accounting options and the value relevance of oil and gas firms in Nigeria. An ex post facto design and inferential statistical techniques, such as ordinal logistic regression analysis, were employed to collect data from the annual financial reports of Nigerian-listed oil and gas firms. The findings provide crucial insights into the performance, financial reporting, and valuation metrics of Nigeria's oil and gas sector under the IFRS 6 framework. While the industry is a significant economic driver, its value relevance metrics—such as Tobin's Q, enterprise value, and earnings per share (EPS)—reveal inefficiencies in translating investments into firm value. Fixed asset intensity and cash investments in exploration, while essential, often have insignificant or negative impacts on market valuation and equity returns. The accounting flexibility under IFRS 6 allows managerial discretion, which may lead to inconsistencies in financial reporting and investor skepticism. Furthermore, the negative correlation between firm size and market valuation highlights the challenges posed by operational inefficiencies, high fixed costs, and governance issues in larger firms.

Despite these challenges, the positive relationships observed between leverage, firm size, and specific metrics suggest opportunities for better capital efficiency and economies of scale. However, the lack of significant impact from intangible asset investments underscores the need for strategic alignment of exploration activities with long-term value creation goals.

It is recommended that policymakers refine IFRS 6 guidelines to ensure uniformity in the accounting treatment of exploration and evaluation (E&E) expenditures. This would enhance transparency, reduce managerial opportunism, and boost investor confidence. Oil and gas firms should adopt strategies to improve asset utilization and reduce high depreciation and operating costs, including conducting thorough feasibility studies for capital-intensive projects and re-evaluating asset portfolios for economic sustainability. Professional accountants and auditors must ensure the faithful representation of financial information, bridging the gap between accounting data and market valuation. Enhanced training in international best practices is critical. Professionals should focus on optimizing asset use and reducing capital intensity to improve profitability and market valuation. By implementing these recommendations, Nigerian oil and gas firms can address sector inefficiencies, improve transparency, align operations with global best practices, and ultimately enhance investor confidence and foster long-term growth.

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