Value Relevance of Sustainability Reporting: Evidence from Listed Oil and Gas Firms in Nigeria

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Abstract
This study determined the value relevance of sustainability reporting of listed Oil and Gas firms in Nigeria. The variables under review were environmental, social and corporate governance disclosures(ESG), taken together. Four specific objectives were stated for the study. Four research questions and null hypotheses coined from the specific objectives guided the study. This study adopted the Ex post facto research design. Purposive sampling technique was adopted to select a sample of 12 companies from a population of the fourteen (14) listed oil companies in Nigeria as at 31st December, 2020. This study made use of secondary data precisely. The data were sourced from publications of the Nigerian stock exchange (NSE), fact books and the annual report and accounts of the sampled companies, particularly the comprehensive income statement and statement of financial positions of these firms as well as their respective notes to the accounts. A questionnaire was adopted to measure ESG activities of listed oil firms. Descriptive statistics was used to summarize the mean, median, standard deviation, skewedness, kurtosis, maximum and minimum of the study variables. Pearson Product Moment Correlation and Ordinary Least Square (OLS) Regression Analysis was used for the study. Findings of the study showed that environmental, social and corporate governance disclosures(ESG), taken together and individually are value relevant and have effect on the market value of firms. It was recommended that Oil and gas firms should consider upping their investment in Environmental Pollution and Control (EPC) and corporate social responsibilities. Even though it might increase operating costs, it has long-term benefits.

Keywords: Social Disclosure, ESG Disclosure, Value Relevance, Environmental Disclosure, Sustainable Accounting

Introduction

Within the enlightened shareholder (ES) approach, there is also emerging evidence to suggest that firms could gain financially and in kind from Corporate Social Responsibility (CSR) activities. In this regard, oil and gas multinationals need to consider a wide range of social and environmental matters if they are to maximize long-term financial returns. Although sustainability reporting is by no means a new topic in management and accountability studies, it has attracted particular attention from researchers and company management in recent years, especially in the oil and gas sector in Nigeria. The serious financial and behavioural scandals involving oil companies in Nigeria as well as frequent clashes with oil and gas host communities are some of the reasons for the renewed importance of sustainability reporting. In some cases, while declaring their social commitments in advertising campaigns and community initiatives, companies have actually violated the classic principles of sustainability reporting. The rationale behind sustainability reporting is not just about community-company partnership, but to achieve the goals of sustainable development.

Sustainable development advocates economic and social development while simultaneously avoiding environmental degradation and ensuring the optimal utilization of natural resources.

Corporations play important roles in achieving the objectives of sustainable development by adopting business policies and practices that maximize shareholders' wealth, economic and social well-being of its employees and of the society in general, without adversely affecting the environment (Mensah, 2019). Such activities of firms that contribute to sustainable development constitute corporate sustainability which is the process of balancing economic and social concerns (Do Prado, et al., 2020). It is determined through the corporate social responsibility performance (CSP) of firms which signifies how a firm's business activities impact the environment society and the overall economy that can either be positive or negative.

This phenomenon is investigated empirically by accessing the relevance of sustainability information and the quality of sustainability information for investors. These investors wish to estimate the company value. However, a vital question is, despite the relevance of this reliable sustainability information for decision-making, how is this information received by investors, negatively or positively? An unresolved research issue in the financial literature is the establishment of a business case of CSP of firms. Therefore, scholars study the business case of corporate sustainability performance of firms by examining its value relevance and investigating its relationship with the firm's financial performance as stated by Rivera, et al (2017).

Value relevance is the ability of a performance measure to explain variations in contemporaneous stock returns. It is the estimate of the performance measures usefulness in equity investors decision-making as stated by Barton, et al, (2010). Traditionally, the focus on value relevance has been limited to financial information such as sales, earnings, book values of equity, comprehensive income and operating cash flows. The literature on the value relevance of corporate sustainability mainly focuses on the individual dimensions of corporate sustainability. The stream of literature is based on the theoretical proposition that investors exhibit socially responsible investment behaviour and integrate personal value as well as societal concern into investment related decisions as stated by Waddock (2003). Furthermore, firm's environmental and social engagement increases long-term profit by reducing resource wastages, improving process and product, decreasing conflict causes with external stakeholders, corporate reputation advantage, employees retention and productivity as well as reduction in cost of capital as stated by Heal (2005). All the corporate governance dimensions are concerned with managing, controlling and reporting these activities are largely ignored by studies.

A new trend has also emerged where value relevance of corporate sustainability research is measured through the overall CSP through the Environmental Social and Governance approach (ESG). Theoretically, this line of literature propagates that ESG performance is considered an intangible asset by investors and is reflected in the market value of firms as stated by Heal (2005). ESG includes The corporate governance dimension of corporate sustainability along with the environmental and social dimensions. This corporate governance aspect deals with how firms are managed and controlled to provide transparency in financial reporting, risk management and stakeholder rights. Hence, corporate governance is an important factor in corporate sustainability as it aligns investor interest with the firm's overall objective in the view of the concept shared by Porter and Kramer (2011). It is considered that a firm's sustainability activities have value relevant if they are mutually beneficial for both the firm and society or it can be argued that the economic aspect of firms is equally important along with the ESG approach for sustainable development.

In recent years, there has been increasing use of Environmental, Social, and Governance (ESG) information by participants in capital markets. This supports the argument that traditional financial information has limited usefulness to investors as it provides only historical-oriented information on a narrow financial base that is insufficient to assess a company's ability to generate future profits (Porter & Kramer, 2011). Historically, the increasing demand and supply of ESG information was the result of a growing belief that changes in accounting measurement and corporate reporting

could be a potentially powerful "lever" that could incentivize and assist the private sector in addressing environmental and social problems. Akin to how the development of a robust financial accounting infrastructure catalyzed the advancement of capital markets and allowed for more efficient management of resources, the development of a measurement infrastructure for all types of organizational impacts could reshape what we value and manage in business.

Environmental social and governance (ESG) disclosure, which is also known as corporate social responsibility reporting (CSR) (Deegan, 2007), entails the practice whereby firms willingly accommodate social and environmental issues in their business values and operations and report same (Mohammed & Abubakar, 2014). Environmental disclosure provides valuable information about the firm's activities conducted in an ethical way. Social disclosures reveal information about community engagement and human capital development, while corporate governance disclosures reveal administrative practices that support growth and boost investor confidence. These disclosures are important tools for decision making (Okpala, & Iredele, 2018). CSR disclosures are widely accepted as one of the ways in which businesses can take responsibility for the effects for their social and environmental activity and account for it through the provision of information.

Environmental Social and corporate governance accounting that aims to provide extra-financial information is at present predominantly a voluntary practice. There is still much debate on reporting practices, in particular, on the quantitative characteristics of performance information and independent verification of published sustainability data (Deegan, 2002).

Statement of the Problem

Contemporary debate on sustainable enterprise development has raised awareness of sustainability practices. This poses emerging challenges for companies to do their business in a more ethical and responsible manner. At the same time, successful disclosure of corporate efforts with regard to corporate sustainability practices to stakeholders is another challenge for managers. As the disclosure requires companies to make great efforts and at sometimes high costs, this is accompanied by uncertainty by companies and management as to whether the reports meet the objectives required by the stakeholders and meet their requirements, and provide useful rules for investment decisions, which must have a bearing on the market value and stock returns of the company. Despite the great scientific interest in the issue of value-relevance in various areas of business research, the results are still inconclusive, the empirical literature has not been enough to achieve consensus on the economic consequences of disclosure of sustainability practices. Several studies have indicated that more empirical studies should be conducted on the value of disclosure of sustainability practices, both for the company and for stakeholders. This study, thus, intends to provide empirical evidence on the value relevance of sustainability reporting. A firm's perceived negligence or irresponsible ESG behaviour can lead to 'regulatory' interventions on the part of the stockholders, a long-term negative reputation in the eyes of the customers and the suppliers, and could ultimately result in the firm being less attractive to future employment candidates. These types of implicit costs affect the stock value of companies. Thus, the study investigates the value relevance of sustainability reporting of oil and gas companies.

Objectives of the Study

The main objective of the study is to determine the value relevance of sustainability reporting of listed oil and gas companies in Nigeria. Specifically, the study seeks to:

1. Determine the value relevance of environmental disclosure on the market value of listed oil and gas firms in Nigeria.
2. Determine the value relevance of social disclosure on the market value of listed oil and gas firms in Nigeria.
3. Determine the value relevance of corporate governance disclosure on the market value of listed oil and gas firms in Nigeria.

4. Determine the value relevance of environmental, social and corporate governance (ESG) disclosure on the market value of listed oil and gas firms in Nigeria.

Research Questions

The following research questions are stated to guide the study:

1. What is the value relevance of environmental disclosure on the market value of listed oil and gas firms in Nigeria?
2. What is the value relevance of environmental disclosure on the market value of listed oil and gas firms in Nigeria?
3. What is the value relevance of corporate governance disclosure on the market value of listed oil and gas firms in Nigeria?
4. What is the value relevance of environmental social and corporate governance (ESG) disclosure on the market value of listed oil and gas firms in Nigeria?

Research Hypotheses

The following research hypotheses were tested at .05 alpha level:

1. There is no significant effect of value relevance of environmental disclosure on the market value of listed oil and gas firms in Nigeria.
2. There is no significant effect of value relevance of social disclosure on the market value of listed oil and gas firms in Nigeria.
3. There is no significant effect of value relevance of corporate governance disclosure on the market value of listed oil and gas firms in Nigeria.
4. There is no significant effect of value relevance of environmental, social and corporate governance (ESG) disclosure on the market value of listed oil and gas firms in Nigeria.

Conceptual Framework

Value Relevance

Value relevance refers to the association between disclosed information and company value hence, if a link can be identified between information and movements in firm value or equity, then that information is value relevant. If there is no association between accounting numbers and company value, then that information cannot be termed value relevance (Barth, Beaver, & Landsman, 1998, 2001). Barth, Beaver, and Landsman (2001) aver that value relevance research examines the association between accounting amounts and equity market values. According to Kothari (2001), the value-relevance stream of research is based on the premise that if information is useful, investors will adjust their behavior and the market will respond through changes in stock prices. Therefore, information is considered value-relevant if stock price movements are associated with the release of the information. Bath, et al (2001) opines that value relevance research examines the correlation between stock price which is the endogenous variable and a selected number of exogenous variables which can be accounting or financial related information.

Environmental, Social and Governance (ESG)

Environmental, social, and governance (ESG) criteria are a set of standards for a company's operations that socially conscious investors use to screen potential investments (Scott, 2022). Environmental criteria consider how a company performs as a steward of nature. Social criteria examine how it manages relationships with employees, suppliers, customers, and the communities where it operates. Governance deals with a company's leadership, executive pay, audits, internal controls, and shareholder rights. Investors (notably younger generations) have, in recent years, shown interest in putting their money where their values are. As a result, brokerage firms and mutual fund companies have started offering exchange-traded funds (ETFs) and other financial products that follow ESG criteria (Fargo, 2021).

Theoretical Framework

Resource-Based View (RBV)

The study is anchored on the Resource-Based View (RBV) theory of a firm. The resource-based view **(RBV)** was developed by Barnett in 1991. The theory emphasizes the firm's resources as the fundamental determinants of competitive advantage and performance. It adopts two assumptions in analyzing sources of competitive advantage (Peteraf & Barney, 2003). First, this model assumes that firms within an industry (or within a strategic group) may be heterogeneous with respect to the bundle of resources that they control. Second, it assumes that resource heterogeneity may persist over time because the resources used to implement firms' strategies are not perfectly mobile across firms (i.e., some of the resources cannot be traded in factor markets and are difficult to accumulate and imitate). The theory recognizes that heterogeneity of resources in a firm is a driver of competitive differences within an industry; those companies that foster resources in support of sustainability reporting are likely to gain competitive advantages and hence achieve higher share prices as most investors are becoming more environmentally conscious and tend to be more interested in firms that rate well in their sustainability performance.

Types of Environmental, Social and Governance (ESG) Criteria

There are three key parts to ESG investing - environmental, social, and governance aspects. Environmental criteria may include a company's energy use, waste, pollution, natural resource conservation, and treatment of animals. The criteria can also help evaluate any environmental risks a company might face and how the company is managing those risks (Scott, 2022). For example, there might be issues related to its ownership of contaminated land, its disposal of hazardous waste, its management of toxic emissions, or its compliance with government environmental regulations (Chase, 2021).

Reviewing past researches, the results are mixed as there are different ways of measurement used for the variables. There is a positive influence on the economic performance as recognition on the environmental performance has gradually increased (Nilandri et al, 2008). This is consistent with the study by Saleh, Zulkifli, and Muhamad (2011) that show a positive relationship between Corporate Social Responsibility (CSR) and Corporate Financial Performance. The CSR measurement including environmental disclosure with financial indicators of Return on Assets (ROA), stock market returns and Tobin's Q, while Mahoney et al. (2007) and Al-Tuwaijiri et al. (2004) assert that there is significant relationship between environmental performance and economic performance with more extensive quantifiable environmental disclosure.

Social criteria look at the company's business relationships. Does it work with suppliers that hold the same values as it claims to hold? Does the company donate a percentage of its profits to the local community or encourage employees to perform volunteer work there? Do the company's working conditions show high regard for its employees' health and safety? Are other stakeholders' interests taken into account? (Scott, 2022). There is scarce evidence on the relationship between corporate social performance and market value. According to stakeholder theory, the satisfaction of various stakeholder groups leads to positive relations between social and financial performance (Orlitzky *et al*., 2003). Based on the social categories, such as community involvement, employee relations, diversity, and human rights, Derwall (2007) found an unexpected positive relationship between social index and the cost of equity, but the author does not examine the sub-dimensions of social index separately.

With regard to governance, investors may want to know that a company uses accurate and transparent accounting methods and that stockholders are allowed to vote on important issues. They may also want assurances that companies avoid conflicts of interest in their choice of board members, don't use political contributions to obtain undue favorable treatment and, of course,

don't engage in illegal practices. No single company may pass every test in every category, of course, so investors need to decide what's most important to them and do the research (Chase, 2021).

Zuraida, et al (2015) investigated value relevance of environmental, social, and governance disclosure. They investigated the impact of Environmental, Social, and Governance (ESG) disclosure by companies around the world on market value. Using a large sample of non-financial companies listed in 38 countries during the period 2008–2012. They tested for value relevance by employing the modified version of the Ohlson (1995) model developed by Collins, Maydew, and Weiss (1997). They find support for the value relevance of disclosure of ESG both in aggregate form and for its individual components. These findings support the expectation of disclosure theory that disclosure of relevant information (such as ESG) has a positive impact on value. The results for ESG disclosure are stronger in common-law countries.
Amedu, Iliemena and Umaigba (2019) studied value relevance of sustainability reporting in Nigerian manufacturing companies. The study examines value relevance of sustainability reporting among manufacturing firms in Nigeria. The study adopted a longitudinal research design. The sample comprised thirty companies randomly selected from the floor of the Nigerian Stock Exchange. The study relied on secondary data retrieved from annual reports for the period 2010-2018. The hypotheses were validated using panel data regression technique. The results revealed that economic-sustainability and social sustainability reporting of quoted manufacturing companies were value relevant.

Methodology

The researcher employs the Ex post facto research deign. The population of the study consists of all the fourteen (14) listed oil companies in Nigeria as at 31st December, 2021. Purposive sampling technique was adopted to select the firms with up to date and complete annual reports and accounts for the study period (2016-2020). The sample size of this study consist of the 12 (12) oil and gas firms that were continuously listed and actively trading on the floor of the Nigerian Stock Exchange (NSE) during the period 1st January, 2016 to 31st December, 2020 and whose financial statements are available and have been consistently submitted to NSE for the period under study.

This study made use of secondary data precisely. The data were sourced from publications of the Nigerian stock exchange (NSE), fact books and the annual report and accounts of the sampled companies, particularly the comprehensive income statement and statement of financial positions of these firms as well as their respective notes to the accounts. The dependent variables were computed from the data extracted from publications of the Nigerian stock exchange (NSE), the annual report and accounts of the sampled listed deposit money banks and ratios were computed from the figures as reported in the annual reports. The independent variable of this study are the value relevance of social disclosure, environmental disclosure, corporate governance disclosure and ESG pooled disclosure. The researcher adopted an instrument to determine the extent of ESG practices of listed oil and gas companies.

The dependent variable in this study is market value which was measured with *Book Value per Share*
Book value per share (BVS) (X2) obtained from total equity divided by the number of shares outstanding.

$$BVS = \frac{\text{Total of equity}}{\text{he number of shares outstanding}}$$

Tobin's_Q

The value of the company in this study was measured using Tobins' Q as a proxy for company value for several reasons: First, Tobins'Q is a measure of the future because it is based on stock prices. Second, market-based actions reflect the ideas of external stakeholders and can capture the long-term value of corporate social responsibility activities (Orlitzky et al. 2003). Therefore, in this study, Tobins'Q measurements were as follows:

□□□□□□ □ = $EMV + DEBV$

□□□□□□' □ = $\frac{EMV+DEBV}{EBV}$

where:
EMV = Equity market value (EMV = closing price X number of shares outstanding)
D = Book value of total debt
EBV = Book value of total assets

Environmental, Social and Governance (ESG) Information

The instrument for measuring ESG reports in this study uses the GRI (Global Reporting Initiative) Guidelines index, namely GRI G3.1 - GRI G4. The score of the disclosure was be assessed based on how many indicators are expressed in one aspect, with a score of each aspect scale 0 to 4.
The formula for calculating scores for each aspect is as follows:

ESG Disclosure Aspect Scores (ESGα) =

$\Sigma\ Ii$

ni

With:

Ii: indicators disclosed at i aspect

ni: amount of indicators at i aspect

After obtaining a score on aspects of ESG disclosure, the ESG index is calculated using the following formula.

ESGIj =

Σ ESGα,

αj

With:

ESG : ESG Disclosure Index Scores at company j

ESGα, : ESG Disclosure Aspect Scores at company j

: Number of aspects of GRI disclosure

Variable Definition

Variable Name	*Measure*	*Description*
Env	Environmental disclosure score	Proprietary Bloomberg score based on the extent of a company's environmental disclosure as part of Environmental, Social and Governance (ESG) data. The score ranges from 0.1 for companies that disclo ses minimum amount of ESG data to 100 for those that disclose every data point collected by Bloomberg. Each data point is weighted in terms of importance, with data such as Greenhouse Gas Emissions carrying greater weight than other disclosures. (ENVIRONMENTAL_DISCLOSURE_SCORE)
ESG	Environmental, social and governance disclosure score	Proprietary score based on the extent of a company's Environmental, Social, and Governance (ESG) disclosure. The score ranges from 0.1 for companies that disclose a minimu m amount of ESG data to 4 for those that disclose every data. The sum is a weighted average of the three component scores. However, only cases when there are values on each of the three components are used. (ESG_DISCLOSURE_SCORE)
BV	Book value per share	Total Common Equity / Number of Shares Outstanding. (BOOK_VAL_PER_SH)
Tobin's_Q	Tobin's Q	(Market Cap + Liabilities + Preferred Equity + Minority Interest) / Total Assets. (TOBIN_Q_RATIO)

Descriptive statistics was used to summarize the mean, median, standard deviation, skweness, kurtosis, maximum and minimum of the study variables. Inferential statistics of the stated hypotheses were carried out with the aid of E-view 9.0 statistical software, using:

i. Pearson Coefficient of Correlation which is a good measure of relationship between two variables, tells us about the strength of relationship and the direction of relationship as well.
ii. Due to the panel nature of the data, fixed effect and random effect regressions were run. Ordinary Least Square (OLS) Regression Analysis was used for the study.
Model Specification: In order to ascertain the value relevance of ESG**,** the following econometric models were specified: $Y = f(X) + \mu$ The above model could be re-constructed as thus:

$YEnvít = \beta o + \beta_1 Tobins' Qít + + \beta_2 BVít + \mu$ **(H1)**
$YESGít = \beta o + \beta_1 Tobins' Qít + + \beta_2 BVít + \mu$ **(H4)**

Where: β0 = Intercept of the regression β1 = Coefficients of Tobin's Q, μít = error term capturing other explanatory variables not explicitly included in the model of firm í in period t Y = dependent variable (Envít) = Environmental disclosure, í in period t;

ESGít = Environmental social and corporate governance disclosure in period t (independent variable) í = individual company (1, 2 ….. 12) t = time period (1, 2 ..... 5)

Findings

Table 1: Descriptive Statistics for Dependent and Independent Variables Used in the Valuation Models

	ENV	GOV	SOC	ESG	BV	TOBIN'S Q
N Valid	14	14	14	14	14	14
Mean	3.29	3.57	3.71	3.07	3.21	3.36
Std. Error of Mean	0.29	0.23	0.13	0.32	0.11	0.34
Median	4.00	4.00	4.00	3.50	3.00	4.00
Std. Deviation	1.07	0.85	0.47	1.21	0.43	1.28
Skewness	-1.55	-2.44	-1.07	-1.08	1.57	-1.57
Std. Error of Skewness	.597	.597	.597	.597	.597	.597
Minimum	1.00	1.00	3.00	1.00	3.00	1.00
Maximum	4.00	4.00	4.00	4.00	4.00	4.00

Source: Field Analysis by researcher

Table 1 shows the summary of the descriptive statistics for the panel data. The result shows that the mean for environmental disclosure (ENV) is 3.29, while the mean for corporate governance disclosure is 3.57 and social disclosure is 3.71 as against 3.07 for environmental social and corporate governance report. The result shows that oil and gas companies report more of social disclosures than any other component of sustainability reports. This was followed by corporate governance report with a mean value of 3.57. Environmental disclosures were the least reported. Overall, the rate at which each component of CSR is reported is lower than the combined ESG report. ESG report with a mean value of 3.07 is comparatively lower than the other individual components. The Book value and Tobins' Q have mean values of 3.21 and 3.26 respectively.

Table 2: Pearson Correlation Matrix

		ENV	SOC	GOV	ESG	BV	TOBINS Q
ENV	Pearson Correlation	1					
	Sig. (2-tailed)						
	N	14					
SOC	Pearson Correlation	.652*	1				
	Sig. (2-tailed)	.012					
	N	14	14				
GOV	Pearson Correlation	.175	.248	1			
	Sig. (2-tailed)	.549	.393				
	N	14	14	14			

ESG	Pearson Correlation	.758**	.481	.039	1		
	Sig. (2-tailed)	.002	.081	.895			
	N	14	14	14	14		
BV	Pearson Correlation	.024	.061	-.440	.118	1	
	Sig. (2-tailed)	.935	.837	.115	.689		
	N	14	14	14	14	14	
TOBINS Q	Pearson Correlation	.314	.273	.055	.182	-.152	1
	Sig. (2-tailed)	.275	.345	.852	.534	.605	
	N	14	14	14	14	14	14

Table 2 shows the correlation matrix for the study variables. The result shows that environmental disclosure has a moderate positive relationship with Tobins' Q (.314) and a very low positive relationship with book value (.024). Similarly, social disclosure has a moderate positive relationship with Tobins' Q (.273) and a very low positive relationship with book value (.061). Corporate governance disclosure has a low positive relationship with Tobins' Q (.055) and a negative relationship with book value (-.440). However, ESG disclosure has a low positive relationship with Tobins' Q (.182) and a low positive relationship with book value (.118).

Research Hypotheses

Ho1: there is no significant effect of value relevance of environmental disclosure on the market value of listed oil and gas firms in Nigeria.

Table 3: Summary of Panel Regression Test for Significant Effect of Value Relevance of Environmental Disclosure on the Market Value

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	-7.065	2.970		-2.378	.041	-7.065
	1.242	.187	.826	6.657	.000	1.242
	.883	.413	.266	2.141	.061	.883

R^2 =0.872; Adj. R^2 =0.843; *F*-Statistic 30.567, *P*-Value (*F*-Statistics) .000

Table 3 gives the summary of the regression test for significance. The result shows that every unit rise in environmental disclosure increases book value by .1.242 and Tobin's Q by .883. This shows a positive effect of environmental disclosure on market value. However, the probability value (*F*-Statistics) is .000. Since $P<.05_{(.000)}$, the result is statistically significant. Thus, there is a significant effect of value relevance of environmental disclosure on the market value of listed oil and gas firms in Nigeria.

Ho2: There is no significant effect of value relevance of social disclosure on the market value of listed oil and gas firms in Nigeria.

Table 4: Summary of Panel Regression Test for significant effect of value relevance of social disclosure on the market value

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	.130	5.570		.023	.982
	BV	1.515	.350	.749	4.329	.002
	TOBIN'S Q	1.234	.774	.276	1.595	.145

R^2 =0.75; Adj. R^2 =0.695; *F*-Statistic 13.51, *P*-Value (*F*-Statistics) .002

Table 4 gives the summary of the regression test for significance. The result shows that every unit rise in social disclosure increases book value by .1.515 and Tobin's Q by 1.234. The probability value(*F*-Statistics) is .002. Since P<.05 $_{(.002),}$ the result is statistically significant. Thus, there is a significant effect of value relevance of social disclosure on the market value of listed oil and gas firms in Nigeria.

Ho3: There is no significant effect of value relevance of corporate governance disclosure on the market value of listed oil and gas firms in Nigeria.

Table 5: Summary of Panel Regression Test for significant effect of value relevance of corporate governance disclosure on the market value.

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	1.734	2.735		.634	.542
	BV	.894	.172	.894	5.202	.001
	TOBIN'S Q	-.279	.380	-.126	-.735	.481

R^2 =0.754; Adj. R^2 =0.699; *F*-Statistic 13.776, *P*-Value (*F*-Statistics) .002

Table 5 gives the summary of the regression test for significance. The result shows that every unit rise in corporate governance disclosure, book value increases by .894 and reduces Tobin's Q by .279. The probability value (*F*-Statistics) is .002. Since P<.05 $_{(.002),}$ the result is statistically significant. Thus, there is a significant effect of value relevance of corporate governance disclosure on the market value of listed oil and gas firms in Nigeria.

Ho4: There is no significant effect of value relevance of environmental, social and corporate governance (ESG) disclosure on the market value of listed oil and gas firms in Nigeria.

Table 6: Summary of Panel Regression Test for significant effect of value relevance of ESG disclosure on the market value

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	13.643	1.898		7.186	.000
	BV	-.167	.119	-.329	-1.397	.196
	TOBIN'S Q	-.643	.264	-.573	-2.438	.037

R^2 =0.639; Adj. R^2 =0.437; *F*-Statistic 5.261, *P*-Value (*F*-Statistics) .031

Table 6 gives the summary of the regression test for significance. The result shows that every unit rise in ESG disclosure book value decreases by .167 and reduces Tobin's Q by .643. The probability value (*F*-Statistics) is .031. Since $P<.05_{(.031)}$, the result is statistically significant. Thus, there is a significant effect of value relevance of ESG disclosure on the market value of listed oil and gas firms in Nigeria.

Discussion of Findings

Value Relevance of Environmental Disclosure and Market Value

The result shows that environmental disclosure has a moderate positive relationship with Tobins' Q (.314) and a very low positive relationship with book value (.024). The corresponding hypothesis test shows that there is a significant effect of value relevance of environmental disclosure on the market value of listed oil and gas firms in Nigeria. This finding is consistent with that of Saleh, Zulkifli, and Muhamad (2011) that shows a positive relationship between Corporate Social Responsibility (CSR) and Corporate Financial Performance. The CSR measurement include environmental disclosure with financial indicators of Return on Assets (ROA), stock market returns and Tobin's Q, while Mahoney et al. (2007) and Al-Tuwaijiri et al. (2004) assert that there is significant relationship between environmental performance and economic performance with more extensive quantifiable environmental disclosure.

Value Relevance of Social Disclosure and Market Value

Result of analysis indicates that social disclosure has a moderate positive relationship with Tobins' Q (.273) and a very low positive relationship with book value (.061). The related hypothesis test confirms that there is a significant effect of value relevance of social disclosure on the market value of listed oil and gas firms in Nigeria. Corporate social responsibility disclosure is information that strengthens perceptions of external parties on the company's financial statements, for example for investors to be taken into consideration in decision making. This finding is corroborated by Derwall (2007) who found an unexpected positive relationship between social index and the cost of equity, though the author does not examine the sub-dimensions of social index separately. Scholtens and Zhou (2008) found that, in general, the association between the composite measures of stakeholder relations and stock returns does not provide consistent results.

Value Relevance of Corporate Governance Disclosure and Market Value

Result of analysis shows that corporate governance disclosure has a low positive relationship with Tobins' Q (.055) and a negative relationship with book value (-.440). The hypothesis test confirms that there is a significant effect of value relevance of corporate governance disclosure on the market value of listed oil and gas firms in Nigeria. This finding is supported by Amedu, et al. (2019) who studied value relevance of sustainability reporting in Nigerian manufacturing companies. They found that economic-sustainability and social sustainability reporting of quoted manufacturing companies were value relevant. The finding is in variance with Murdayanti, et al (2020) who researched on corporate Governance and Value Relevance in Indonesia

Manufacturing Companies. They found that corporate governance moderation variable has an insignificant effect on earnings.

Value Relevance of Environmental, Social and Corporate Governance (ESG) Disclosure and Market Value

Findings from the research questions shows that ESG disclosure has a low positive relationship with Tobins' Q (.182) and a low positive relationship with book value (.118). The hypothesis test indicates that there is a significant effect of value relevance of environmental disclosure on the market value of listed oil and gas firms in Nigeria. This finding is in line with Zuraida, et al (2015) who investigated value relevance of environmental, social, and governance disclosure. The evidence shows that globally, investors benefit from the disclosure of both aggregate ESG and the individual factors and this supports regulators in pushing companies to provide additional ESG information.

Conclusion

This study measured ESG disclosure by using market value- Tobin's Q and book value. Four hypotheses are tested using the Collins et al. (1997) version of the Ohlson (1995) model on aggregate ESG. Based on the findings of the study, it is concluded that there is a significant positive relationship between the variables of interest and market value. Thus ESG disclosure, both as the aggregate and the individual level, is value relevant.

Recommendations

Based on the results of the empirical analysis, the following set of recommendations related to the value relevance of ESG data are made:

1. Since ESG reporting is value relevant, oil and gas companies are requested to be transparent about their ESG activities and increase reporting of such ESG activities.

2. Environmental reporting by oil and gas companies should be consistent and reflected in annual financial statements.

3. Oil and gas firms should consider upping their investment in Environmental Pollution and Control (EPC) and corporate social responsibilities. Even though it might increase operating costs, it has long-term benefits.

4. Oil companies in Nigeria should adopt and disclose environmental friendly policies as this portrays their commitment towards achieving the goal of sustainable development.

5. Corporate governance mechanisms of firms should be disclosed in the annual report since it affects how investors evaluate the firm's capability to create profits in future.

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