

Impact of Environment, Social, and Governance Pillars on Firm Value in Oil and Gas Sector

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ABSTRACT

This research was carried out to investigate environment, social, and governance (ESG) impact on firm value in oil and gas sector using good management theory. The research uses 105 unbalanced panel data obtained from oil and gas sector between 2018 and 2022. Bloomberg ESG disclosure scores and audited annual reports are obtained and analyzed applying the pooled ordinary least square (OLS) framework, with heteroscedasticity strong standard errors. Country and year-fixed effects are considered to mitigate systematic variances in firm value across each pillar of ESG. A positive relation exists on aggregate ESG and firm value. The results show that higher quality of ESG reporting increases firm value in oil and gas sector. A robustness test is also performed to analyze each pillar in ESG score. There is a positive correlation between social and governance pillars as well as firm value. In contrast, environment pillar is not individually related to firm value. According to good management theory, increased investment in firm social responsibility signifies a superior standard of management and improved financial performance. Differences in ESG practices across countries present an interesting opportunity to obtain the ESG correlation by Bloomberg Score and firm value.

Keywords: Firm Value, Environment, Social, Governance, Oil, Gas

JEL Classifications: G32, Q56, M14, L71

1. INTRODUCTION

Oil and gas sector is subjected to a transformative shift in perception and operation. In this context, there is a growing demand of implementing sustainability strategies to reduce greenhouse gas emissions and environmental damage (Menéndez-Sánchez et al., 2023). Meanwhile, the system of transformation is closely associated with sustainable development. Achieving sustainable improvement in enterprise includes addressing economic elements associated with profitability and social aspects regarding humans. Environmental concerns related to the planet (Boiral et al., 2019) are also supported through the adoption of green firm governance practices (Jaimes-Valdez and Jacobo-Hernandez, 2016).

Investors and stakeholders are emphasizing sustainability practices as a key criterion for assessing long-term viability since

organizations recognize the importance of sustainable practices. The examination analyzes commitment to social responsibility, strong governance, and environmental protection, showing the consistency with ethical principles and impact on firm value. The objective of the establishment and practice is to maximize wealth (Salvatore, 2005). Firm value represents a specific state attained by firm, serving as an indication of the public's confidence.

The sustainability of a business takes place when the operations do not damage natural resources and environment (Sharma and Henriques, 2005). In today's environment, business development incorporates economic, social, and environmental dimensions by increasing performance in governance (Shakil, 2021). The global firm landscape is subjected to a profound transformation as businesses increasingly recognize the critical importance of ESG principles. Evaluation of firm's progress in sustainability, as

well as the implementation of ethical business practices through effective monitoring, is reflected in environment around and social governance industry (Kim and Li, 2021).

Oil and gas play an important role in the country's economy but face unique challenges and opportunities in the integration of ESG into firm strategies. Firms in the category are concerned with the ethics of potentially risky activities (Ramírez-Orellana et al., 2023). The country's resources are critical for growth, but also present environmental and social risks. Given these dynamics, oil and gas sector should be explored to effectively implement ESG principles within human resource departments. The rapid growth has raised the public's expectations to conduct the "right thing" for workers. This enhances the perspective that pressure compelled firms to transition focus from value to the interests of all stakeholders.

A clear recent trend is the increased demand and attention of firms in sectors including renewable energy, technology, and biotech. The effective integration of ESG practices provides firms with several benefits to enhance performance. Therefore, increasing public awareness regarding sustainability issues has stimulated investment in ESG standards. The significance of showing ESG lies in the capacity to provide stakeholders with important insights into the opportunities and risks confronting firm (Almeida and Darmansyah, 2019). Furthermore, ESG enhances organizational learning, assisting firms to identify risks and innovate. The integration enhances firm reputation, exploits business opportunities, and raises the quality of management through increased insight.

The ESG effects on firm value has been reported but the results show inconsistencies. Several research suggest a positive connection of ESG and firm value. Giannopoulos et al. (2022) reported a strong and meaningful correlation of ESG and firm value. Velte (2017) stated ESG practices positively impacted Germany's firm value (measured by Tobin's Q) and profitability. Furthermore, this research shows the significant impact of governance on economic growth. CSR initiatives have significant benefits and impact on firm value even though the extent differ based on the characteristics (Yoon et al., 2018). Previous analysis (Zhao et al., 2018) suggested that increased ESG performance had affect positively on economic growth. Similarly, Fatemi et al. (2018) conducted research on US firms in 2006-2011 and found that improved ESG practices as well as showing increased value. The ESG impact on 4887 firms' finance was examined by Bhaskaran et al. (2020) between 2014 and 2018, using firm value (Tobin's Q), return on assets (ROA), and return on equity (ROE) as dependent variables. Therefore, firms having good ability in environmental, social dimensions and governance, improve better market value. Additionally, there are sector-specific investigations, such as Abdi et al. (2022), which analyzed ESG impact on firm value and profitability within the aviation industry, applying 38 airlines data between 2009 and 2019. Investments in governance enhance firm's market-to-book ratio, while social and environmental engagement causes improves financial efficiency.

Several research shows that ESG investment could potentially have an adverse effect on profitability or firm value. Barnett (2007) stated investing in CSR negatively impact financial performance,

including the reallocation of funds. Brammer and Pavelin (2008) examined the influence of firm social performance among UK firms using market returns. Landi and Sciarelli (2019) focused on 54 Italian firms spanning in 2007-2015 as well as observing a negative relation of ESG and financial performance. Mulpiani's (2019) research shows a negative correlation of social exposure and financial performance. Almeida and Darmansyah (2019) produced two results, showing no ESG disclosure correlation with financial performance. The recognition of ESG's significance in oil and gas sector is growing but a substantial gap exists in understanding the incorporation of the principles into sustainability practices. The research examines the the principles implementation and firm value impact.

2. LITERATURE REVIEW

Waadok and Graves (1997) elaborated on effective measures to clarify the correlation of firm social with financial performance appropriate to the stakeholder principles (Donaldson and Preston, 1995). According to the good management theory principles, firm should prioritize the satisfaction of stakeholders without considering financial position. In the framework, attributes are considered important elements of firm's intangible assets, which is important in increasing competitive advantage (Barney, 1991).

As suggested by Miles and Covin (2000), environmental performance offers an alternative method of fulfilling stakeholder needs and represents a distinctive dimension of advantage to enhance competitive strength. Proponents of efficiency theory also suggest that effective business practices are closely related to firm social performance (CSP). This is because the variable enhances firm's relationships with the stakeholders (Donaldson and Preston, 1995; Freeman, 1994; Waadok and Graves, 1997) and competitive advantage (Prahalad and Hamel, 1994; (Waadok and Graves, 1997). According to good management theory, increased investment in firm social responsibility reflects a higher standard of management, which leads to financial performance (Freeman, 1983; Prahalad and Hamel, 1994). This concept was presented as the trade-off hypothesis, where firms made prudent financial investments. The benefits could be seen as a type of positive externality since firms would gain from favorable brand associations and social capital derived from being perceived as good firm citizens.

According to Brooks and Oikonomou (2018), there was a direct correlation of ESG disclosures with firm value. An automated firms analysis in S&P/TSX Composite Index was also performed by Schiehl and Kolahgar (2020), where ESG information affected stock price variability. Grewal et al. (2017) reported firms disclosing SASB-identified sustainability information possessed increased stock price informativeness level, namely stock return synchronicity, liquidity risk, stocks illiquidity, bid-ask spread, and zero-return days. Meanwhile, a stronger relationship existed on sustainability performance and firms stock price informativeness with higher disclosure reducing economic performance as stated by Ng and Rezaee (2020).

Even though information asymmetry and capital cost are reduced by ESG, firm value is increased (Dhaliwal et al., 2011). According to Matsumura and Prakash (2022), firms disclosing climate-

change risk possessed reduced risk. The quality of voluntary environmental disclosure gives information for determining firm value as measured by estimated future cash flows and the equity capital cost (Plumlee et al., 2015). In a research conducted by Bachoo et al. (2013), a negative correlation was reported in sustainability quality and equity capital cost. A positive correlation also reported on estimated future performance.

According to Eccles et al. (2014), high-sustainability firms outperform the counterparts in terms of accounting and market-based performance using 180 American firms. The correlation of ESG scores and financial performance was examined (Velte, 2017) for firms in the German Prime Standard in 2010-2014. A positive relationship was reported on ESG and accounting-based financial performance. Friede et al. (2015) presented empirical results of more 2000 research stating the impacts on financial performance. Meanwhile, a positive correlation is reported on market-based financial performance with ESG factors. Similar result was presented by another meta-research compiling over 200 previous analyses. From the research, 80% of the results stated ESG affect positively on market-based financial performance (Clark et al., 2015).

ESG considered the variable of firm environment, governance efficiency and social responsibility. In this context, the disclosure is important for reducing information asymmetry in firms and stakeholders. Firms that disclosed ESG information are more transparent which can decrease investment risks, satisfying investors' risk-averse preferences (Frydman and Wang, 2020;

Joliet and Titova, 2018). Then, Hypothesis 1 is proposed:

H₁: ESG positively affects firm value

This research developed another test for each pillar in ESG score. Derwall (2007) determined ESG a better-integrated measure to analyze its internal and external activities. Several studies have reported the crucial importance of differentiating between Environmental, Social, and Governance (ESG) issues to identify the specific factors that drive firm value, as each pillar may have varying degrees of influence (Buallay, 2019, El Khoury et al., 2021).
H_{2a}: Environment pillar positively affects firm value
H_{2b}: Social pillar positively affects firm value
H_{2c}: Governance pillar positively affects firm value.

3. RESEARCH METHODOLOGY

The population of this research comprised firms in oil and gas sector. To test the hypothesis from a global perspective, the sample frame was selected based on Bloomberg ESG disclosure score constituent list "oil and gas" sector, which included 1924 firms. The samples were obtained using a purposive sampling method with predetermined criteria and the skimming defined the final result which includes 105 firms. Consequently, this research analyzed panel of 223 observations from 2018 to 2022 (Tables 1 and 2).

The Bloomberg database offers the global firms' financial and ESG information. ESG ratings are conducted on 11,500 firms in 83 countries where the findings beneficial for international comparisons. The ESG data contains a composite, firm-year measure, and individual disclosure scores for the parts. The score is customized to be industry-specific, ensuring that each firm is assessed based on data related to the respective sector.

This result is based on OLS regression model with fixed-year effects and clustered standard errors to mitigate heteroskedasticity (Petersen, 2009). The pairwise correlations show the multicollinearity assumptions and normality were ignored because the sample was quite large, as reported by Wooldridge (2020) and Gujarati (2017).

Table 1: Calculation of research sample

Criteria	Data
Data of firms in oil and gas sector on the Stock Exchange in 2018-2022	1.858
Data of firms in oil and gas that do not include complete information used to calculate variables related to this research in Bloomberg, financial and annual reports	734
Firms in oil and gas Data that are outliers in this research	511
Total sample	223

Source: Data Processed, 2023

Table 2: Summary of variable measurements

Variable	Definition	Source
Dependent variable		
Market-based financial performance	Market capitalization ratio plus liabilities to total assets	Chen and Xie, 2022
Independent variable		
ESG	The extent of ESG disclosure serves as a basis for Bloomberg's proprietary score, ranging from 1 to 100.	Buallay, 2019; El Khoury et al., 2021; Gurol and Lagasio, 2022
Environment	Environmental disclosure serves as the basis for Bloomberg's proprietary score. In this context, increased environmental disclosure is reflected by higher value.	Buallay, 2019; El Khoury et al., 2021; Gurol and Lagasio, 2022
Social	The extent of social disclosure serves as the basis for Bloomberg's proprietary score. Increased social disclosure is reflected by higher value.	Buallay, 2019; El Khoury et al., 2021; Gurol and Lagasio, 2022
Governance	The extent of governance disclosure serves as the basis for Bloomberg's proprietary score. Higher values reflect increased governance disclosure.	Buallay, 2019, El Khoury et al., 2021; Gurol and Lagasio, 2022
Control variable		
Firm size	Natural total asset logarithm	Nirino et al., 2021; Wang and Sarkis, 2017; Bernardi and Stark, 2018
Financial leverage	Total debt to total assets of firm	Hamdan, 2020; Alareeni and Hamdan, 2021.

Source: Data Processed, 2023

Regression statistics were applied in STATA 13 and model (1) tested the direct correlation of ESG disclosure and market-based financial performance. Model (3) is shown as follows:

$$\text{Tobin's } Q = \alpha + \beta_1 \text{ ESG} + \beta_2 \text{ CR} + \beta_3 \text{ DAR} + \beta_4 \text{ SIZE} + \varepsilon$$

Model (2) tests the direct relationship between each pillar in ESG disclosure score and market-based financial performance. Model (2) is presented as follows:

$$\text{Tobin's } Q = \alpha + \beta_1 \text{ Environment} + \beta_2 \text{ Social} + \beta_3 \text{ Governance} + \beta_5 \text{ CR} + \beta_6 \text{ DAR} + \beta_7 \text{ SIZE} + \varepsilon$$

4. RESULTS

4.1. Descriptive Statistics

Based on Table 3, the mean Tobin's Q is calculated to be 0.570 with a total sample of 223 firm-years. With a ratio below 1, the market perceives firm value to be less than the assets replacement cost and the Tobin's Q median is 0.515. The market value is

greater than the recorded assets when Tobin's Q > 1.0. For each pillar, the average values of ESG pillars are 34.736, 36.052, and 79.214, respectively.

The average score for environment and social are classified as poor, and the score for governance is excellent. On average, the highest and lowest scores are disclosed on pillars of governance and environment. Therefore, the activities reported by oil and gas sector tend to be governance. In this context, sector's readiness, as reported in firm's information source, shows the scoring provided by Bloomberg.

4.2. Normality and Multicollinearity Test

The significance level is $\alpha = 0.05$ and the decision-making in the normality test are appropriate to the Jarque-Bera probability figures. Figures 1 and 2 show that the probability value is 3.594 and 4.613, respectively. Since the probability values in models 1 and 2 are 0.165 and 0.099 greater than 0.05, the normality assumption is fulfilled.

Table 4, indicates the relation of all the variables used in the research. The relationship did not exceed value of 0.80, hence

Table 3: Descriptive statistics

Variables	Mean	Median	Max	Min	Standard deviation	Obs
Tobins Q	0.570	0.515	1.925	0.047	0.325	223
ESG	50.016	50.630	81.190	11.210	15.530	223
Environment	34.736	33.980	84.720	0.330	22.195	223
Social	36.052	36.250	74.790	2.570	16.067	223
Governance	79.214	83.590	150.300	25.530	17.735	223
CR	252.180	123.158	14594.140	33.862	1020.234	223
DAR	50.236	53.504	152.132	1.101	21.816	223
Size	15.193	15.059	18.905	9.406	1.652	223

Tobin's Q=Market capitalization ratio plus liabilities to total assets; ESG=Environment social governance disclosure; Total observations=223

Figure 1: Normality test in Model 1

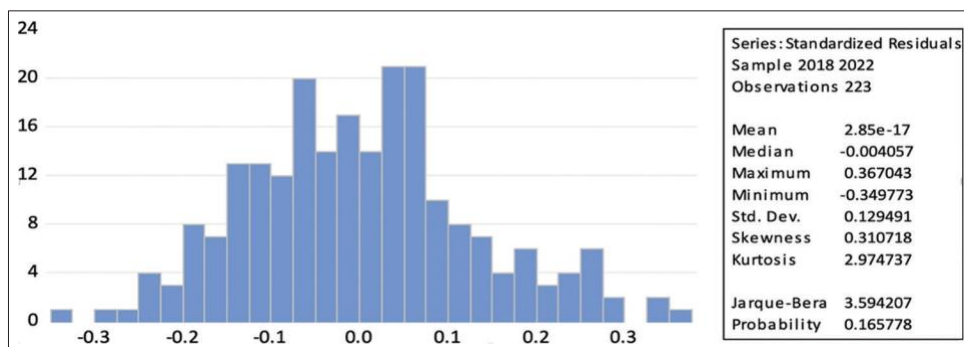


Figure 2: Normality test in Model 2

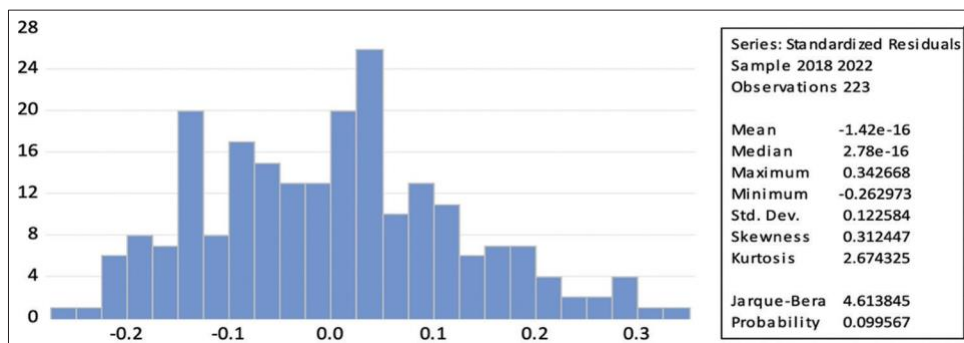


Table 4: Multicollinearity test

	Correlation							
	t-Statistic							
Probability	Tobins Q	ESG	E	S	G	CR	DAR	Size
Tobins Q	1.000							
ESG	0.114	1.000						
	1.707							
	0.089							
E	-0.047	0.887	1.000					
	-0.701	28.592						
	0.484	0.000						
S	0.077	0.902	0.820	1.000				
	1.145	31.102	21.262					
	0.253	0.000	0.000					
G	0.287	0.693	0.334	0.435	1.000			
	4.456	14.272	5.265	7.176				
	0.000	0.000	0.000	0.000				
CR	0.089	0.092	0.064	0.131	0.041	1.000		
	1.321	1.367	0.960	1.970	0.603			
	0.188	0.173	0.338	0.050	0.547			
DAR	-0.520	-0.111	-0.050	-0.091	-0.145	-0.225	1.000	
	-9.046	-1.655	-0.751	-1.361	-2.178	-3.426		
	0.000	0.099	0.454	0.175	0.030	0.001		
Size	-0.321	0.524	0.564	0.533	0.183	-0.303	0.173	1.000
	-5.044	9.142	10.157	9.367	2.766	-4.719	2.610	
	0.000	0.000	0.000	0.000	0.006	0.000	0.010	

Tobin’s Q=Market capitalization ratio plus liabilities to total assets; ESG=Environment social governance disclosure; Total observations=223

the model did not experience multicollinearity problems (Gujarati et al., 2012).

4.3. Hypothesis Testing

Based on regression test in Table 5, ESG has a positive effect on Tobin’s Q appropriate to the coefficient and probability values (0.0067 and 0.000) or below 5% significant level. Based on model 2, environment pillar of ESG does not affect Tobin’s Q. This result is because the coefficient and probability values of 0.001 and 0.413 or below 1% significant level. The difference between social and governance pillars shows coefficient and probability values of 0.004 and 0.018 or below 5% significant level. Meanwhile, governance pillar shows the coefficient and probability values of 0.002 and 0.021 or below a 5% significant level.

5. DISCUSSION

5.1. ESG and Firm Value

From the results, ESG score is directly proportional to firm value. Li et al., 2018 stated that facilitating trust and generating superior performance are important in the competitive market. According to Jasni et al. (2020), ESG disclosures in Malaysian telecommunications industry provide competitive advantage. Porter et al., 2019 reported that businesses were effectively conducted to provide solutions to societal issues, and a strong relation was obtained in the ESG reporting and firm value.

Siegrist et al. (2020) argued, sustainability firm reporting efforts facilitated the efficient resources management. In another research by Porter et al., (2019), ESG reporting enhanced firm value and reputation amongst investors. Furthermore, Kumar, 2021 reported that ESG-compliant firms showed superior governance, prioritized environmental care and sustainable development,

Table 5: Regression test result

Variable	Model (1)		Model (2)	
	Coef	Prob	Coef	Prob
ESG	0.007	0.000***		
Environment			0.001	0.272**
Social			0.003	0.044***
Governance			0.002	0.043***
CR	0.000	0.018***	0.000	0.016***
DAR	-0.006	0.000***	-0.006	0.000***
Size	-0.090	0.000**	-0.089	0.000**
C	1.843	0.000	1.826	0.000
Year effect	Yes	Yes	Yes	Yes
Country effect	Yes	Yes	Yes	Yes
R ²		0.779		0.776
Adjusted R ²		0.724		0.718
S.E. of regression		0.115		0.115
F-statistic		14.227		13.280
Prob (F-statistic)		0.000		0.000

Tobin’s Q=Market capitalization ratio plus liabilities to total assets; ESG=Environment social governance disclosure; Total observations=223

***Significant at 1%, **Significant at 5%, *Significant at 10%

Source: Data Processed, 2023

obtained lower earnings volatility, and accessed funds at lower costs (Kumar, 2021).

ESG transparency was regarded as additional nonfinancial information providing insight to investors. Firms benefitted from the practice by enhancing reputations and promoting sustainable actions, which are valued by a broader network of stakeholders. Qureshi et al. (2019) stated that dynamic and extensive growth is valued by stock market actors, resulting in higher prices. Hahn and Kühnen (2013) stated firms with sustainability information will gain potential business benefits, such as increased transparency, reputation, brand value, employee motivation, and control processes. By actively practicing ESG principles, firms can comply

with green development objectives. Luo et al., 2024 stated that stakeholders developed a strong recognition of the enterprise, leading to a positive image, reputation, as well as economic and social benefits.

5.2. Environment Pillar and Firm Value

Aydođmuş et al., 2022 argued that environment pillar did not affect firm value because related actions required longer duration to give results. The high investment costs correlated with environment action is another reason. Jibril et al. (2022) reported the non-renewable energy transition as a environmental barriers in developing economies because of high cost and enormous capital investment.

In descriptive statistics, the average environmental disclosure is lower than social and governance counterparts. Furthermore, firms working in environmentally sensitive industries (ESI) including oil, chemicals and mining comply with increasing stakeholder scrutiny based on performance on environmental issues (Pisani et al., 2017). In disclosures, to support stakeholder view of the response to environmental issues, a more optimistic tone is also used. Negative information must be avoided, and there are few incentives to disclose in poor track record areas (Cormier and Gordon, 2001; Aerts et al., 2008; Bani-Khalid, 2019). This causes a low average of environmental disclosure compared to social and governance counterparts.

Resources are allocated to disclose environmental commitment to external stakeholders by increasing numbers of ESI firms but are not financially appreciated by market actors (Clarkson et al., 2004; Aerts et al., 2008; Cormier and Magnan, 2015). Cho and Patten, 2007 reported that environmental information were considered with skepticism. Furthermore, market participants perceived information disclosed by ESI firms as less reliable (Aerts et al., 2008; Cormier and Magnan, 2015).

5.3. Social Pillar and Firm Value

Melinda and Wardhani (2020) and Alareeni and Hamdan (2021) argued that social pillar positively affected firm value. A strong positive correlation was reported on social revelation with business market success as in Tobin's Q. Social responsibility is regarded as the primary factor influencing market performance by businesses in oil and gas sector.

Firm performance has components including human rights, labor, product responsibility, and community are reflected by social score. Furthermore, firm acts as business entities must be able to succeed financially and expand responsibilities in social aspects (Melinda and Wardhani, 2020).

Cormier et al. (2009) argued that objective and precise voluntary disclosures are assessed by investors because social and human capital are firm value keys. Social disclosures are value-relevant for several reasons. First, quality employees are attracted and retained through solid reputation as shown by broad and objective reporting, improve morale and productivity (Donald, 2009), goodwill and trust to key stakeholders, decreasing firm's transaction costs and distributional conflicts.

5.4. Governance Pillar and Firm Value

Governance pillar positively affects firm value appropriate to previous analysis (Melinda and Wardhani, 2020; Aydođmuş et al., 2022; Alareeni and Hamdan, 2021; Buallay, 2019) where disclosure affect positively on firm value. Shareholder conflicts and transaction abuse by interested parties are reduced by implementing good governance to increase profitability and firm value.

Direct relationship is reported in good governance and firm value due to a positive assessment of better structure. Meanwhile, business transparency is a good signal to investors as well as stakeholders. Good firm governance minimizes effective operations in increasing profits. Practices can improve financial performance for the greatest benefit to stakeholders, reduce unnecessary costs, and help businesses in the long run. In addition, governance disclosure scores can be cheaper and faster to reach (Aydođmuş et al., 2022).

6. CONCLUSION

In conclusion, this research was carried out to examine ESG impact on firm value in oil and gas sector. Sample covered 105 firms in 2018-2022 and the result reported a positive connection on aggregate ESG score and firm value. The findings reported higher quality of ESG increased firm value in oil and gas sector. A robustness test was also conducted to analyze each pillar in ESG score. Social and governance pillars had highly significant positive correlation with firm value. However, environment pillar showed no individual relationship due to several reasons. First, average score of the disclosure was lower than social and governance counterparts. Environmental disclosure also avoided negative information. However only few incentives firms can obtain to disclose in poor track record areas. Second, oil and gas was classified as environmentally sensitive sector with a high impact, and the transition from non-renewable energy covered high investment costs.

This research had limitations that could lead to future analyses. First, the quantity of ESG disclosure data was only examined, but the quality of performance remained of interest. Second, only oil and gas sector was considered and future research could focus on ESG in other industrial areas with high levels of pollution. Structured data collection from operational firms: public data from ESG annual reports, case research, metadata and real-time variables, as well as operational business questionnaires must be considered in the future.

REFERENCES

- Abdi, Y., Li, X., Càmara-Turull, X. (2022), Exploring the impact of sustainability (ESG) disclosure on firm value and financial performance (FP) in airline industry: The moderating role of size and age. *Environment, Development and Sustainability*, 24(4), 5052-5079.
- Aerts, W., Cormier, D., Magnan, M. (2008), Corporate environmental disclosure, financial markets and the media: An international perspective. *Ecological Economics*, 64(3), 643-659.
- Alareeni, B.A., Hamdan, A. (2021), ESG impact on performance of

- US S and P 500-listed firms. *Corporate Governance*, 20, 1409-1428.
- Almeyda, R., Darmansyah, A. (2019), The influence of environmental, social, and governance (ESG) disclosure on firm financial performance. *IPTEK Journal of Proceedings Series*, 5, 278.
- Aydoğmuş, M., Gulay, G., Ergun, K. (2022), Impact of ESG performance on firm value and profitability. *Borsa Istanbul Review*, 22, S119-S127.
- Bachoo, K., Tan, R., Wilson, M. (2013), Firm value and the quality of sustainability reporting in Australia. *Australian Accounting Review*, 23(1), 67-87.
- Bani-Khalid, T. (2019), Examining the quantity and quality of online sustainability disclosure within the Jordanian industrial sector: A test of GRI guidelines. *Problems and Perspectives in Management*, 17(4), 141-152.
- Barnett, M.L. (2007), Stakeholder influence capacity and the variability of financial returns to corporate social responsibility. *Academy of Management Review*, 32, 794-816.
- Barney, J. (1991), Corporate reputation and social performance: The importance of fit. *Journal of Management Studies*, 17(1), 99-120.
- Bernardi, C., Stark, A.W. (2018), Environmental, social and governance disclosure, integrated reporting, and the accuracy of analyst forecasts. *The British accounting review*, 50(1), 16-31.
- Bhaskaran, R.K., Ting, I.W.K., Sukumaran, S.K., Sumod, S.D. (2020), Environmental, social and governance initiatives and wealth creation for firms: An empirical examination. *Managerial and Decision Economics*, 41(5), 710-729.
- Boiral, O., Heras-Saizarbitoria, I., Brotherton, M.C. (2019), Assessing and improving the quality of sustainability reports: The auditors' perspective. *Journal of Business Ethics*, 155(3), 703-721.
- Brammer, S., Pavelin, S. (2008), Factors influencing the quality of corporate environmental disclosure. *Business Strategy and the Environment*, 17, 120-136.
- Brooks, C., Oikonomou, I. (2018), The effects of environmental, social and governance disclosures and performance on firm value: A review of the literature in accounting and finance. *The British Accounting Review*, 50, 1-15.
- Buallay, A. (2019), Is sustainability reporting (ESG) associated with performance? Evidence from the European banking sector. *Management of Environmental Quality: An International Journal*, 30(1), 98-115.
- Chen, Z., Xie, G. (2022), ESG disclosure and financial performance: Moderating role of ESG investors. *International Review of Financial Analysis*, 83, 102291.
- Cho, C.H., Patten, D.M. (2007), The role of environmental disclosures as tools of legitimacy: A research note. *Accounting, Organizations and Society*, 32(7-8), 639-647.
- Clark, G.L., Feiner, A., Viehs, M. (2015), From the Stockholder to the Stakeholder: How Sustainability can Drive Financial Outperformance. Available from: <https://www.ssrn.com/abstract=2508281>
- Clarkson, P.M., Li, Y., Richardson, G.D. (2004), The market valuation of environmental capital expenditures by pulp and paper companies. *The Accounting Review*, 79(2), 329-353.
- Cormier, D., Aerts, W., Ledoux, M.J., Magnan, M. (2009), Attributes of social and human capital disclosure and information asymmetry between managers and investors. *Canadian Journal of Administrative Sciences/Revue Canadienne Des Sciences de l'Administration*, 26(1), 71-88.
- Cormier, D., Gordon, I.M. (2001), An examination of social and environmental reporting strategies. *Accounting, Auditing and Accountability Journal*, 14(5), 587-617.
- Cormier, D., Magnan, M. (2015), The economic relevance of environmental disclosure and its impact on corporate legitimacy: An empirical investigation. *Business Strategy and the Environment*, 24(6), 431-450.
- Derwall, J. (2007), *The Economic Virtues of SRI and CSR* [Doctoral Dissertation, Erasmus Research Institute of Management, Erasmus University Rotterdam]. Retrieved from Erasmus University Repository.
- Dhaliwal, D.S., Li, O.Z., Tsang, A., Yang, Y.G. (2011), Voluntary nonfinancial disclosure and the cost of equity capital: The initiation of corporate social responsibility reporting. *The Accounting Review*, 86(1), 59-100.
- Donaldson, T., Preston, L.E. (1995), The stakeholder theory of the corporation: Concept, Evidence, and implications. *Academy of Management Review*, 20(1), 65-91.
- Donald, S.S. (2009), Green management matters only if it yields more green: An economic/strategic perspective. *Academy of Management Perspectives*, 23(3), 5-16.
- Eccles, R.G., Ioannou, I., Serafeim, G. (2014), The impact of corporate sustainability on organizational processes and performance. *Management Science*, 60(11), 2835-2857.
- Fatemi, A., Glaum, M., Kaiser, S. (2018), ESG performance and firm value: The moderating role of disclosure. *Global Finance Journal*, 38, 45-64.
- Freeman, R.E. (1994), The politics of stakeholder theory: Some future directions. *Business Ethics Quarterly*, 4(4), 409-421.
- Friede, G., Busch, T., Bassen, A. (2015), ESG and financial performance: Aggregated evidence from more than 2000 empirical studies. *Journal of Sustainable Finance and Investment*, 5(4), 210-233.
- Frydman, C., Wang, B. (2020), The impact of salience on investor behavior: Evidence from a natural experiment. *The Journal of Finance*, 75(1), 229-276.
- Giannopoulos, G., Fagemes, R.V.K., Elmarzouky, M., Hossain, K.A.B.M.A. (2022), The ESG disclosure and the financial performance of norwegian listed firms. *Journal of Risk and Financial Management*, 15(6), 15060237.
- Grewal, J., Hauptmann, C., Serafeim, G. (2020), Material Sustainability Information and Stock Price Informativeness. Available from: <https://ssrn.com/abstract=2966144>
- Gujarati. (2017), *Econometrics by Example*. 2nd ed. London: Palgrave Macmillan.
- Gujarati, D.N. (2012), *Basic Econometrics*. 5th ed. United States: McGraw-Hill Education.
- Gurol, B., Lagasio, V. (2022), Women board members' impact on ESG disclosure with environment and social dimensions: Evidence from the European banking sector. *Social Responsibility Journal*, 19(1), 211-228.
- Hahn, R., Kühnen, M. (2013), Determinants of sustainability reporting: A review of results, trends, theory, and opportunities in an expanding field of research. *Journal of Cleaner Production*, 59, 5-21.
- Jaimes-Valdez, M.A., Jacobo-Hernandez, C.A. (2016), Sustainability and corporate governance: Theoretical development and perspectives. *Journal of Management and Sustainability*, 6(3), 44.
- Jasni, N.S., Yusoff, H., Zain, M.M., Md Yusoff, N., Shaffee, N.S. (2020), Business strategy for environmental social governance practices: Evidence from telecommunication companies in Malaysia. *Social Responsibility Journal*, 16(2), 271-289.
- Jibril, R.S., Isa, M.A., Maigoshi, Z.S. (2022), Corporate board gender, institutional strength and energy disclosure in Nigeria. *Journal of Chinese Economic and Foreign Trade Studies*, 15(3), 316-331.
- Joliet, R., Titova, Y. (2018), Equity SRI funds vacillate between ethics and money: An analysis of the funds' stock holding decisions. *Journal of Banking and Finance*, 97, 70-86.
- Kim, S., Li, Z. (2021), Understanding the impact of esg practices in corporate finance. *Sustainability*, 13(7), 3746.
- Kumar, P.C. (2021), *ESG Compliant Companies Provide Superior Returns*. Dublin: The Corporate Governance Institute.

- Landi, G., Sciarelli, M. (2019), Towards a more ethical market: The impact of ESG rating on corporate financial performance. *Social Responsibility Journal*, 15(1), 11-27.
- Li, Y., Gong, M., Zhang, X.Y., Koh, L. (2018), The impact of environmental, social, and governance disclosure on firm value: The role of CEO power. *The British Accounting Review*, 50(1), 60-75.
- Luo, W., Tian, Z., Fang, X., Deng, M. (2024), Can good ESG performance reduce stock price crash risk? Evidence from Chinese listed companies. *Corporate Social Responsibility and Environmental Management*, 31(3), 1469-1492.
- Matsumura, E.M., Prakash, R. (2022), Climate-risk materiality and firm risk. *Review of Accounting Studies*, 29, 33-74.
- Melinda, A., Wardhani, R. (2020), The effect of environmental, social, governance, and controversies on firms' value: Evidence from Asia. In *Advanced Issues in the Economics of Emerging Markets*, 27, 147-173.
- Menéndez-Sánchez, J., Fernández-Gómez, J., Araujo-de-la-Mata, A. (2023), Sustainability strategies by oil and gas companies, contribution to the SDGs and local innovation ecosystems. *Energies*, 16(6), 2552.
- Miles, M.P., Covin, J.G. (2000), Environmental marketing: A source of reputational, competitive, and financial advantage. *Journal of Business Ethics*, 23(3), 299-311.
- Mulpiani, W. (2019), Pengaruh pengungkapan sustainability report terhadap kinerja perusahaan publik di Indonesia. *Akurasi : Jurnal Studi Akuntansi Dan Keuangan*, 2(2), 77-90.
- Nirino, N., Santoro, G., Miglietta, N., Quaglia, R. (2021), Corporate controversies and company's financial performance: Exploring the moderating role of ESG practices. *Technological Forecasting and Social Change*, 162, 120341.
- Ng, A.C., Rezaee, Z. (2020), Business sustainability factors and stock price informativeness. *Journal of Corporate Finance*, 64, 101688.
- Petersen, H.L., Vredenburg, H. (2009), Morals or economics? Institutional investor preferences for corporate social responsibility. *Journal of Business Ethics*, 90(1), 1-14.
- Pisani, N., Kourula, A., Kolk, A., Meijer, R. (2017), How global is international CSR research? Insights and recommendations from a systematic review. *Journal of World Business*, 52(5), 591-614.
- Plumlee, M., Brown, D., Hayes, R.M., Marshall, R.S. (2015), Voluntary environmental disclosure quality and firm value : Further evidence. *Journal of Accounting and Public Policy*, 34(4), 336-361.
- Porter, M., Serafeim, G., Kramer, M. (2019), Where ESG Fails. Vol. 16. India: Institutional Investor.
- Prahalad, C.K., Hamel, G. (1994), Strategy as a field of study: Why search for a new paradigm? *Strategic Management Journal*, 15, 5-16.
- Qureshi, M.A., Kirkerud, S., Theresa, K., Ahsan, T. (2019), The impact of sustainability (environmental, social, and governance) disclosure and board diversity on firm value: The moderating role of industry sensitivity. *Business Strategy and the Environment*, 29, 1199-1214.
- Ramírez-Orellana, A., Martínez-Victoria, M.C., García-Amate, A., Rojo-Ramírez, A.A. (2023), Is the corporate financial strategy in the oil and gas sector affected by ESG dimensions? *Resources Policy*, 81, 103303.
- Salvatore, D. (2005), In: Empat, S, editor. *Ekonomi Manajerial*. 2nd ed. Indonesia: Gramedia.
- Schiehll, E., Kolahgar, S. (2020), Financial materiality in the informativeness of sustainability reporting. *Business Strategy and Development*, 30, 840-855.
- Shakil, M.H. (2021), Environmental, social and governance performance and financial risk: Moderating role of ESG controversies and board gender diversity. *Resources Policy*, 72, 102144.
- Sharma, S., Henriques, I. (2005), Stakeholder influences on sustainability practices in the Canadian forest products industry. *Strategic Management Journal*, 26(2), 159-180.
- Siegrist, M., Bowman, G., Mervine, E., Southam, C. (2020), Embedding environment and sustainability into corporate financial decision-making. *Accounting and Finance*, 60(1), 129-147.
- Velte, P. (2017), Does ESG performance have an impact on financial performance? Evidence from Germany. *Journal of Global Responsibility*, 8(2), 169-178.
- Waadok, S.A., Graves, S.M. (1997), The corporate social performance-financial performance link. *Strategic Management Journal*, 18(4), 303-319.
- Wang, Z., Sarkis, J. (2017), Corporate social responsibility governance, outcomes, and financial performance. *Journal of Cleaner Production*, 162, 1607-1616.
- Wooldridge, J.M. (2020), *Introductory Econometrics*. 7th ed. United States: Cengage.
- Yoon, B., Lee, J.H., Byun, R. (2018), Does ESG performance enhance firm value? Evidence from Korea. *Sustainability*, 10(10), 3635.
- Zhao, C., Guo, Y., Yuan, J., Wu, M., Li, D., Zhou, Y., Kang, J. (2018), ESG and corporate financial performance: Empirical evidence from China's listed power generation companies. *Sustainability*, 10(8), 2607.