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ESG and Firm Value (Study on Energy Sector Companies Listed on the Indonesia Stock Exchange)

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ABSTRACT

The purpose of this study is to look into how firm value in energy businesses listed on the Indonesia Stock Exchange is affected by environmental, social, and governance disclosures. Tobin's Q and the cost of capital are used to calculate firm value. Using energy firms listed on the Indonesia Stock Exchange between 2021 and 2023, this study employs a quantitative method utilizing a multiple regression approach. The sample companies are those who use the GRI Standards in their sustainability reports to provide environmental, social, and governance information. With a total of 63 observations, the sample size that results is 21 firms. The findings indicate that social and governance factors have no bearing on company value, on the other hand, environmental considerations considerably raise Tobin's Q and lower the cost of capital. Investors can evaluate businesses using non-financial data thanks to these discoveries. Firm value may be impacted by non-financial disclosure, such as environmental factors in this instance.

Keywords: Environmental, Social, and Governance; Tobin's Q; Cost of Capital

JEL Classification: G3

INTRODUCTION

In pursuing business goals, companies focus on maximizing profits, making corporate value a key indicator for assessing operational efficiency and productivity. Increasing corporate value boosts investor trust in the company's quality and future in addition to demonstrating effective business management. To put it another way, a high corporate value indicates a company's capacity to establish appeal and dependability in the eyes of stakeholders, particularly investors. However, short-term earnings for shareholders are no longer the only criterion for evaluating a company's performance nowadays. Beyond conventional financial measures, other stakeholders like consumers, workers, communities, governments, and investors also want more organizational openness. As a result, sustainability has quickly emerged as the standard by which enterprises are evaluated. Sustainability also represents a crucial opportunity to build long-term resilient organizations (Accounting BINUS, 2022).

The sustainability idea is supported by the Environmental, Social, and Governance (ESG) framework. ESG integration helps companies identify risks and opportunities, strengthen their reputations, and enhance innovation and efficiency. ESG integration can also mitigate reputational risk, meet customer and regulatory expectations, create long-term value, and provide access to capital and sustainable market opportunities (CRMS Indonesia, n.d.).

This study aims to find out how the value of energy companies listed on the Indonesia Stock Exchange (IDX) between 2021 and 2023 is impacted by ESG disclosure. The industrial sector is the subject of this study because the energy sector is under pressure from internal and external stakeholders to give environmental, social, and governance (ESG) aspects of their operations more consideration. The Securities and Exchange Commission's (SEC) planned ESG reporting regulations are the driving force behind this. Given their key role within the business ecosystem, energy businesses will be greatly impacted by these rules (Indonesia Risk Management Professional Association, n.d.) Furthermore, this industry has grown rapidly over the past few decades and generated significant profits. However, a successful business sector is certainly not solely focused on profit. Businesses in the energy sector should also have their performance evaluated according to how they affect the community's social and environmental situations. To support the idea of sustainability in this industry, the Environmental, Social, and Governance (ESG) framework has been adopted (CRMS Indonesia, n.d.).

Additionally, ESG disclosure makes it possible to acquire less expensive funding. This is because of two significant factors. First, by fostering reciprocal trust, such disclosure strengthens a company's dedication and connections with stakeholders. Second, prior research has shown that businesses with superior ESG performance are more likely to make relevant disclosures since they demonstrate increased regulatory compliance and transparency, which lessens information asymmetry problems and ultimately lowers COC (Gholami et al., 2023).

Environmental disclosure is conducted as a form of corporate transparency in efforts to protect and preserve the environment along with its environmental impacts (Widyawati & Hardiningsih, 2022). Research conducted by Melinda & Wardhani (2020), Naeem et al. (2022), Suretno et al. (2022), and Azahra & Hasnawati (2024) showed a positive and significant relationship between environmental disclosure and firm value, as measured by Tobin's q. The more environmental information a company publishes, the higher its value (Nisa et al., 2023). However, this contrasts with research by Johan & Toti (2022), which found that environmental disclosure had a significant negative impact on Tobin's

q. According to studies on how environmental disclosure affects capital costs, ESG disclosure lowers capital costs (Ellili, 2020; Tawfiq, et al., 2024). However, Ramirez et al. (2022) found that environmental scores had no effect on the cost of capital. Similar findings were obtained from research by Janah & Purwanto (2024).

According to the GRI Standards, social factors encompass various aspects related to a company's impact on society, employees, and other stakeholders, which are crucial for achieving sustainability and social responsibility. Prior studies by Aydoğmuş et al. (2022) and Melinda & Wardhani (2020) demonstrated a strong and positive correlation between social transparency and business value as determined by Tobin's q. In contrast, Azahra & Hasnawati's (2024) study found that social transparency had a considerable negative impact on Tobin's q. According to Tawfiq et al. (2024), the cost of capital is negatively impacted by social transparency. However, research by Ellili (2020), Janah & Purwanto (2024), and Ramirez et al. (2022) showed that social transparency had no effect on the cost of capital.

Governance factors according to the GRI Standards encompass various important aspects related to the structure, policies, and practices governing company management, which are essential to ensuring accountability, transparency, and sustainability. Governance Disclosure and corporate value are positively correlated, according to studies by Melinda & Wardhani (2020), Christy & Sofie (2023), Johan & Toti (2022), and Aydoğmuş et al. (2022). This, however, is different from studies conducted by Azahra & Hasnawati (2024) and Suretno et al. (2022). These studies demonstrate that the value of a firm is significantly impacted negatively by governance disclosure. Ellili (2020) and Tawfiq et al. (2024) did research on the impact of governance on the cost of capital and discovered that a company's low cost of capital can be influenced by governance aspects. However, research by Ramirez et al. (2022) and Janah & Purwanto (2024) shows that governance factors have little bearing on the cost of capital.

More research is needed to ascertain how ESG influences corporate value, especially for energy companies listed on the Indonesia Stock Exchange, given these contradictory research findings. Tobin's Q and the cost of capital were the two proxies used in this study to determine business value.

LITERATURE REVIEW

Within the context of signaling theory, it is expected that a company's adequate information delivery will be perceived as a positive signal by stakeholders. This signal consists of information explaining management's efforts to achieve the owners' desires. When making investment decisions, investors and business actors view this information as a crucial signal. Environmental, Social, and Governance disclosures signal that a company is not only concerned with maximizing shareholder wealth but also contributing to the prosperity of the communities in which it operates. Therefore, environmental, social, and governance disclosures by companies can be a positive signal to investors and other stakeholders, potentially triggering changes in stock trading volume and positively impacting company value.

ESG parameters are now being considered by investors for their investment portfolios (Cesarone et al., 2022). According to Jonsdottir et al. (2021), this makes it possible for business actions and decisions pertaining to sustainable development to become crucial elements in winning support for accomplishing the SDGs. According to Dhaliwal et al. (2014), a company's cost of capital also plays a critical role in choosing financing strategies and making decisions that support sustainability challenges. Because of this, companies try to reduce their capital expenses by using sustainability-based strategies. El Ghoul et al. (2011) found that companies that support corporate social responsibility (CSR) initiatives have reduced equity financing costs. Additionally, according to (Brammer & Pavelin, 2004), implementing CSR initiatives is essential for developing a positive reputation. According to Duque-Grisales and Aguilera-Caracuel (2021), sustainable strategies, which are quantified by ESG scores, contrast CSR results from socially conscious investments with best business practices. Because of this, companies want to know how sustainable practices impact capital costs. Climate change, the environmental impact of operations, respect for human rights, equality, workforce diversity, board independence, fair treatment of shareholders, transparency, and disclosure of business information are just a few of the factors taken into account by ESG scores, according to a study by Atanet et al. (2018).

Hypothesis Development

The Effect of Environmental Disclosure on Firm Value

A company's resource usage, emissions, and innovation are all included in its environmental disclosure. Companies can demonstrate environmentally responsible performance and image through environmental disclosure, which can boost investor confidence and foster public trust that the business runs in compliance with relevant standards.

Environmental disclosure, as evaluated by ESG dimensions, and company value were found to be positively and significantly correlated in earlier research by Naeem et al. (2022), which used panel data regression analysis on businesses in developing nations. Nisa et al. (2023) found a positive and substantial correlation between environmental disclosure and business value using multiple regression analysis on mining companies from 2017 to 2020. disclosures about the use of energy, waste, pollution, preservation of natural resources, and how plants and animals are treated. One could argue that the company's environmental implementation can boost its value, leading to successful market performance.

According to signaling theory, some businesses have made the decision to disclose environmental information in an effort to attract investors, who view this participation as a good signal. This school of thought holds that businesses can hide a lot of environmental information. As a result, different actions can be made to lessen information opacity, in accordance with signaling theory. These strategies may include payments made by agents to businesses for using signals to reveal hidden characteristics. Since corporations will gain from good appraisals from all stakeholders, the signaling theory's credibility and uniqueness properties are crucial for evaluating environmental disclosure as a signaling technique. In the meantime, stakeholders will penalize businesses with subpar environmental disclosure practices. Higher social and fiduciary costs will follow from this, making access to capital more costly and raising the cost of capital (Khanchel & Lassoued, 2022).

Based on this description, the following hypotheses are formulated:
H_{1a}: Environmental Disclosure has a positive effect on Tobin's Q
H_{1b}: Environmental Disclosure has a positive effect on the cost of capital

The Influence of Social Disclosure on Company Value

Information regarding a business's social performance, including labor, human rights, product responsibility, and community involvement, is included in social disclosure. If the public understands that a company's values coincide with its own, it will survive. Companies achieve public acceptance by projecting a sense of social responsibility through social performance disclosure. By raising the company's value, this public approval is anticipated to motivate investors to make investment decisions. Social responsibility disclosure increases a company's worth, according to research by Nisa et al. (2023). Investors respond favorably to environmentally conscious corporate social initiatives, which raises the company's stock price, a gauge of its worth. Research by Aydogmus et al. (2022), which examined 5,000 companies listed in the Bloomberg database, indicated a favorable correlation between social responsibility and corporate valuation.

Stakeholder theory states that social disclosure is still an essential tool for boosting a company's competitiveness because social engagement gives internal and external stakeholders a direct connection to the business. This enables firms to take advantage of the fluctuations in social expectations and improves overall company risk anticipation. According to Verwijmeren and Derwall (2010), social disclosure of important factors, like employee well-being and enhanced relationships with the community, especially between the company and its capital providers, can encourage lenders and shareholders to better appreciate the company's value and foster long-term trust between these parties. As a result, the cost of capital will be reduced.

Based on the above description, the following hypotheses can be formulated:
H_{2a}: Social Disclosure has a positive effect on Tobin's Q
H_{2b}: Social Disclosure has a positive effect on the cost of capital

The Effect of Governance Disclosure on Company Value
Corporate governance disclosure is a crucial aspect in improving economic efficiency, encompassing a series of relationships between company management, stakeholders, and the board of directors. Implementing these principles will add value to the company, as good governance fosters clean, transparent, and professional work practices. Theoretically, governance disclosure can increase company value because it reduces the risk of the board making self-serving decisions. Governance disclosure generally increases investor confidence (Christy & Sofie, 2023).

Christy & Sofie (2023) investigated the connection between business value on the SMInfra18 Index and governance using multiple regression analysis. They discovered that governance significantly and favorably affects company value. However, this differs from the research by Suretno et al. (2022) studied 27 Indonesian companies with disclosures in Refinitive Econ using panel data analysis, and research by Azahra & Hasnawati (2024) examined 45 non-financial companies from 2020 to 2022 using panel data regression. This research showed that governance disclosure had a significant negative impact on companies. Ghazali & Zulmaita (2020) found that governance had no effect on firm value.

Governance disclosure demonstrates a company's policies and practices intended to ensure that the management and board of directors act in the long-term shareholders' best interests (Lassoued & Khanchel, 2023). From the standpoint of legitimacy theory, governance disclosure is seen as a legitimacy strategy for addressing possible reputational risks to a business, particularly as a means of defense against pressure groups. Then, businesses employ this kind of disclosure to minimize certain problems, lower their risks, or shield their present reputation from possible charges of unethical behavior (Patten, 1992). As a result, governance disclosures eventually aid businesses in regaining their credibility. Thus, in order to explain the connection between corporate risk and governance transparency, the legitimacy issue is essential. Companies that make effective governance disclosures have the advantages of being legitimate, having

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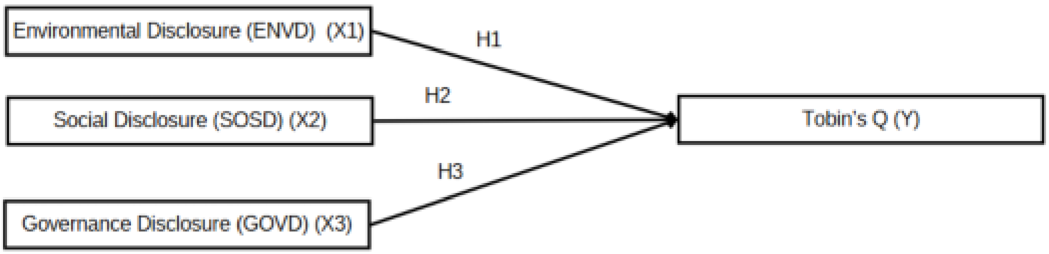
extensive networks, and being knowledgeable about many topics. Because of these advantages, there may be more openness and a reduced cost of capital.
Based on the above description, the following hypotheses can be formulated:
H_{3a}: Governance disclosure has a positive effect on Tobin's q
H_{3b}: Governance disclosure has a positive effect on the cost of capital

Conceptual Framework
The study framework model is depicted in Figure 1.

Figure 1. Research Framework



RESEARCH METHOD

Companies in the energy industry that were actively listed on the Indonesia Stock Exchange (IDX) between 2021 and 2023 made up the study's population. Purposeful sampling was the method of sampling that was employed. Purposive sampling is a method of choosing samples based on specific criteria tailored to Ghozali's research needs (2018). The study's criteria were: 1) the corporation followed the GRI Standards; and 2) the company released a sustainability report between 2021 and 2023. A sample of 21 of the 68 energy businesses that were continuously listed between 2021 and 2023 satisfied the research criteria, yielding a total of 63 observations. Table 1 lists the variables, operational definitions, and measurement variables.

Table 1. Research Variables

Research Variables		Measurement (Proxy))	Source
Y_1	Tobin's Q	Tobin's Q = (Nilai Pasar Ekuitas + Total Liabilitas)/ Total Asset	(Nisa et al., 2023)
Y_2	Cost of capital	Weighted average cost of equity and cost of debt. The weights equal the percentage debt or equity in firm's total assets. Cost of debt: Interest expense/average short-term and long-term loans Cost of equity: Derived from the capital asset pricing model, where the cost of equity is equal to the market risk premium (beta) plus the risk free rate. The nation's 10-year long-term bond	(El Ghoul et al., 2011) (Ellili, 2020) (Dhaliwal et al., 2014)

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		rate is known as the risk-free rate. Using weekly data over a two-year period, a regression of the stock's past trading prices against the market index is used to calculate beta. The return on a nation's stock market less the risk-free rate is known as the market risk premium.	
X1	Environmental Disclosure	$ENVD = \frac{\sum Item\ ENVD}{Total\ ENVD}$	GRI 300 for environmental issues Includes 31 disclosure indicators (Nisa et al., 2023)
X2	Social Disclosure	$SOSD = \frac{\sum Item\ SOSD}{Total\ SOSD}$	GRI 400 for social topics with 37 disclosure indicators (Nisa et al., 2023)
X3	Governance Disclosure	$GOVD = \frac{\sum Item\ GOVD}{Total\ GOVD}$	GRI Standard with 16 disclosure indicators (Nisa et al., 2023)

The testing tool used in this study is multiple regression with the following formula:

$$Y_{1,2} = \alpha + (\beta_1 X_1) + (\beta_2 X_2) + (\beta_3 X_3) + e$$

Note:
- Y_1: *Tobin's Q*
- Y_2: Cost of Capital
- X_1: *Environmental Disclosure*
- X_2: *Social Disclosure*
- X_3: *Governance Disclosure*
- α: constant value
- $\beta_{(1\text{-}3)}$: regression coefficient value
- e: error

RESULTS

The descriptive statistical results for the research variables are shown in Table 2. In general, 64.63% of all environmental disclosure items for the 2021–2023 period were made by energy companies listed on the IDX, according to Table 2, which displays an average environmental disclosure score of 0.6463. There is a minimum value of 0.22 and a maximum value of 1.00 for the environmental disclosure variable, or ENVD. The fact that the standard deviation is less than the mean (0.19349) suggests that the data is not very volatile and is rather steady.

Table 2. Descriptive Statistics

Variables	N	Min	Max	Mean	Std. Deviation
ENVD	63	0.22	1.00	0.6463	0.19349
SOSD	63	0.13	1.00	0.6227	0.16925

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GOVD	63	0.42	1.00	0,8829	0.14743
Tobin's Q	63	0.51	1.79	0,9844	0.26037
COC	63	0.04	0.17	0.0969	0.08223

Source: Processed Data (2025)

The average social disclosure score for energy businesses listed on the IDX for the 2021–2023 period is 0.6227, meaning that they account for 62.27% of all social disclosure items. The range of values for the social disclosure variable, ENVD, is 0.13 to 1.00. The data is relatively consistent and not very volatile, as indicated by the standard deviation value of 0.16925, which is less than the mean.

The average governance disclosure value for energy businesses listed on the IDX between 2021 and 2023 is 0.8829, meaning that 88.29% of all governance disclosure elements are published. The GOVD variable, also referred to as the governance disclosure variable, ranges from a minimum of 0.42 to a maximum of 1.00. The data is quite steady and not very volatile, as indicated by the standard deviation number of 0.14743, which is lower than the mean.

For the 2021–2023 timeframe, the market value of energy companies listed on the IDX is often less than the value of their assets, as indicated by the average Tobin's q value of 0.9844 (each Rp 1 of company assets is valued at approximately Rp 0.9844 by the market). Tobin's Q was used to calculate the firm value variable, which had a minimum of 0.51 and a high of 1.79. The data is rather steady and not very variable, as demonstrated by the 0.26037 standard deviation, which is lower than the mean.

Descriptive statistics for the COC variable show an average value of 0.0969, meaning that for every Rp 1 of funds used, the company needs to generate Rp 0.0969 as compensation for the risk and cost of funding. The COC value ranged from a minimum of 0.04 to a maximum of 0.17. The data is rather steady and not very variable, as indicated by the standard deviation of 0.08223, which is less than the mean.

The results of the multiple regression analysis are shown in Table 3. At a significance level of 0.009 (0.009 <0.05), the regression coefficient for the ENDV variable in equation one is 0.532. Tobin's q indicates that either the ENVD variable significantly increases the company's value or H_1a is approved. This implies that a company in the energy industry listed on the IDX will be worth more if it discloses more environmental information. At a significance level of 0.014 (0.014 <0.05), the coefficient of the ENDV variable in equation 2, where the cost of capital is the dependent variable, is -0.176. This shows that either the firm value as determined by COC is greatly reduced by the ENVD variable or H_1b is accepted. This suggests that if a business discloses more environmental information, its cost of capital will go down.

The regression coefficient for the SOSD variable in equation one is -0.249 at a significance level of 0.244 (0.244 > 0.05). This shows that the SOSD variable has no effect on Tobin's q, and as a result, H2a is rejected. Equation two's SOSD variable yields a regression coefficient of 0.448 and a significance level of 0.623 (0.623 < 0.05). Since H2b is rejected, this suggests that the SOSD variable has no effect on firm value as assessed by the COC.

Equation one's GOVD variable has a significance level of 0.568 (0.568 > 0.05) and a regression value of -0.186. Consequently, H3a is rejected, indicating that the GOVD variable has no effect on Tobin's q for energy sector companies listed on the IDX. Equation two's regression coefficient for GOVD is 0.163, with a significance level of 0.614

(0.614 > 0.05). This means that either H3b is rejected or the COC-measured company value is unaffected by the GOVD variable.

Table 3. Summary of Multiple Regression Analysis Results

Variables	*Tobins'Q*	*COC*
	Equation 1	Equation 2
(1)	(2)	(3)
C	0,928***	0,758**
	0,001	0,030
ENVD	0,532***	-0,176**
	0,009	0,014
SOSD	- 0,249	0,448
	0,244	0,623
GOVD	- 0,186	0,163
	0,568	0,614
F-statistic	2,812**	2,195
R-squared	0,286	0,279
Adjusted R-squared	0,249	0,246

DISCUSSION

Environmental Disclosure (ENVD) has a negative effect on the cost of capital but a large positive impact on the value of energy sector companies listed on the IDX as determined by Tobin's q. According to the regression results, a company's worth increases and its chances of developing sustainable corporate operations increase with the amount of information it reveals about its environmental practices (Nisa et al., 2023). When running a business, implementing environmentally friendly practices almost always improves operational efficiency. Environmental disclosure can maximize a company's brand image, making investors more likely to inject capital to maintain business continuity and growth. As investors contribute capital, a positive corporate image and brand image can also boost consumer loyalty, resulting in increased company revenue. This result is consistent with the signaling theory, which holds that investors receive a favorable signal from environmental disclosure. Such disclosure can enhance a company's image and create a favorable impression in the eyes of investors, thereby opening up opportunities for collaboration and access to broader resources. Thus, through environmental disclosure, companies demonstrate their commitment to environmental responsibility in accordance with applicable laws and standards (Firmansyah et al., 2023).

The study's findings demonstrate that the cost of capital is negatively impacted by environmental conditions. This finding indicates that the higher a company's environmental performance, whether through environmentally friendly activities or a more comprehensive level of environmental disclosure, the lower the company's cost of capital. This is in line with the risk mitigation perspective, where companies with strong environmental commitments are perceived as having lower operational, regulatory, and litigation risks, so investors do not demand high rates of return as compensation for these risks. Additionally, good environmental practices boost investor and financial institution confidence by sending a positive signal to the market about the company's long-term sustainability and governance quality. Consequently, companies gain broader access to funding and lower debt and equity costs. This finding supports signaling theory and the ESG literature, which emphasizes that environmental performance is correlated with reduced corporate risk and ultimately lowers the cost of capital. According to signaling

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theory, environmental performance and transparency give investors positive signals about the company's long-term commitment, operational stability, and quality. Investors lower their necessary risk premium as a result of this signal's reduction of information asymmetry and risk perception. As a result, the cost of capital for the company is reduced.

Tobin's q and COC measurements of the value of energy sector companies listed on the IDX are unaffected by Social Disclosure (SOSD). Even though businesses are increasing their social disclosure, this does not ensure that their value will rise or that investors would become interested. Many investors argue that businesses' social initiatives may result in higher expenses, which could lower the company's worth. Because social transparency cannot give stakeholders a favorable signal, the results of this study are likewise at odds with signaling theory. According to Triyani & Setyahuni (2020), the lack of investor response to social disclosure is caused by expectations that have formed before the information is released. The content of social disclosures is often similar to previous years, so investors may have already anticipated the content several months before the announcement. As a result, when the information is finally published, investors do not show a significant reaction. Thus, although social disclosure can improve transparency and company reputation, investors may not fully appreciate or respond to this information if it does not provide clear added value or is different from previous information. These findings are consistent with studies by Christy & Sofie (2023) and Firmansyah et al. (2023) that found no relationship between social disclosure and firm value.

The study's findings show that social disclosure has no appreciable impact on capital costs. This could mean that the social information disclosed by companies is not yet considered relevant by investors in assessing risk or determining their expected level of return. Social disclosure tends to be normative and symbolic, thus not providing a strong signal regarding a company's ability to manage financial or operational risks. Furthermore, the market has not yet assigned substantial economic value to social issues, thus not impacting the risk premium demanded by investors. Thus, although social disclosure is important from a sustainability perspective, it is not strong enough to directly influence the cost of capital.

The value of energy sector enterprises listed on the IDX is unaffected by governance disclosure (GOV), regardless of whether it is evaluated using Tobin's q or the COC. This finding suggests that the market does not respond to the level of governance disclosure as relevant information in assessing company value or risk. This is likely because governance disclosure in Indonesia is normative and tends to follow regulatory requirements, resulting in relatively homogeneous information quality and inability to differentiate companies. Furthermore, investors value actual governance practices such as board quality, managerial ownership, or oversight effectiveness, rather than simply what is reported. in company documents. Because governance disclosure does not provide a strong signal regarding reduced operational or financial risk, its impact on the cost of capital is also insignificant. Therefore, governance that is only reported administratively is not strong enough to influence market perceptions or investor risk premium calculations. Zhang et al. (2023) stated that the level of transparency in governance disclosure does not always reflect data consistency. Poorly classified information can cause confusion among investors, and even more detrimental if it does not contribute to increasing company value.

CONCLUSION

This study demonstrates that in the energy sector, environmental disclosure has a negative impact on the cost of capital and a favorable impact on firm value. This indicates that sound environmental disclosure is viewed as a positive signal by investors, increasing market confidence, and reducing risk, thus lowering funding costs.

Conversely, Social Disclosure has no effect on firm value or cost of capital because social disclosure tends to be normative, does not provide relevant added value, and is not strong enough to influence investor perceptions.

Similarly, Governance Disclosure has no effect on firm value or cost of capital because administrative governance disclosures do not reflect actual governance practices and are not viewed as significant by investors in assessing a company's risk or performance. Overall, the study results confirm that of the three ESG aspects, only the environmental aspect has strong economic relevance in increasing firm value and lowering the cost of capital in the energy sector.

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The authors have declared no potential conflicts of interest concerning the study, authorship, and/or publication of this article.

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