

ENVIRONMENT, SOCIAL, GOVERNANCE (ESG), AND COST OF CAPITAL IMPLICATION ON FIRM VALUE: EMPIRICAL STUDY ON COMPANIES LISTED ON THE INDONESIA STOCK EXCHANGE (IDX)

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Abstract:

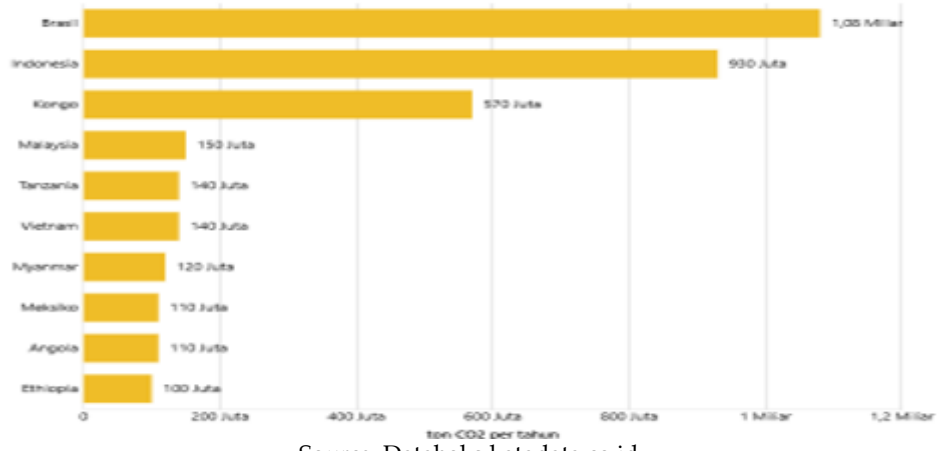
Global warming and abnormal climate change have increasingly affected economic growth worldwide, prompting governments to emphasize carbon emission control and sustainable development. These developments have also shifted investor preferences toward green finance and environmental, social, and governance (ESG) considerations. Growing awareness of environmental risks and other non-financial factors has intensified pressure on companies to improve their ESG practices and disclose related performance. Consequently, research examining the relationship between ESG and firm value has expanded, raising the question of whether ESG implementation truly enhances company value. This study aims to analyze the effect of ESG performance on firm value, as well as the mediating role of the cost of capital, in companies listed on the Indonesia Stock Exchange (IDX). Using a causal research design, the study investigates the influence of ESG as the independent variable on firm value as the dependent variable, and evaluates whether the cost of capital mediates this relationship. Secondary data were obtained from the 2024 annual reports and financial statements of all IDX-listed companies. The results indicate that among the three ESG dimensions, only the environmental factor significantly affects firm value, while social and governance factors show no significant influence. Furthermore, the cost of capital does not affect firm value and does not mediate the relationship between ESG performance and firm value.

Keywords: Environment, Social, Governance, Cost of Capital, Company Value

INTRODUCTION

Climate change is leading to an unprecedented rise in the average global temperature, adversely affecting economic growth across borders (Kahn et al., 2021). These circumstances compel the government to prioritize carbon emission regulation and sustainable development, while also transforming the investment perspectives of financial institutions and individual investors, particularly in relation to green finance and environmental, social, and governance (ESG) criteria. Indonesia ranks among the top global contributors to carbon emissions, particularly from the land conversion sector, where CO₂ emissions amount to 930 million tons annually.





Source: Databoks.katadata.co.id

Figure 1. 10 Carbon Emitting Countries from the World's Largest Land Conversion Sector (2013-2022)

In recent years, Indonesia's green finance policies have started to develop in response to the challenges posed by climate change and the emphasis on sustainable development. A significant initial step was the declaration and launch of the "Indonesia Green Financial Roadmap" by the Financial Services Authority (OJK) in 2017. Within this roadmap, OJK aims to guide the financial sector towards more effectively supporting sustainable and environmentally friendly investments. Financial sustainability is closely linked to funding initiatives designed to address the climate change crisis, such as green climate funds, adaptation funds, and climate investment funds. Moreover, investments are also being directed towards projects focused on reducing carbon emissions (Setyowati, 2020).

The organization plays a significant role in promoting economic, environmental, and social sustainability. The policy encourages various enterprises to reveal their corporate commitments regarding environmental, social, and governance factors through ESG ratings. Companies can enhance their business operations swiftly and accurately, while not solely focusing on profits, but also considering the consequences of these business activities (Safriani and Utomo, 2020). This approach is anticipated to foster a favorable perception among the general public and stakeholders, with the expectation that it will enhance the company's performance (Putri and Utomo, 2019).

The question that arises is whether a company's dedication to ESG positively influences its overall value. Current studies continue to present inconsistent findings. It is believed that the adoption of ESG practices may enhance the company's value (Melinda and Wardhani, 2020). These study results align with previous research (Cakranegara and Sidjabat, 2021; Wong, Batten, Ahmad, Mohamed-Arshad, Nordin, and Adzis, 2021; Aboud and Diab, 2018; Plumlee, Brown, Hayes, and Marshall, 2015; and Peiris and Evans, 2010). However, a number of other studies have indicated contrary outcomes (Jeanice and Kim, 2023; Kartika et al, 2023; Fatemi et al., 2018).

One of the return risk profiles that can be a benchmark for companies in implementing ESG is to look at the value of capital costs borne by the company. Capital cost is the cost that a company must spend to get funds used in its operations. Several research results show that ESG has an impact on a company's capital costs, where the higher the ESG score, the lower the capital cost (Arora and Sharma, 2022; Webel et al., 2014). It is also assumed that if lenders integrate ESG details into their lending decisions, it can alleviate two forms of risk incurred by these companies: reputational risk

and default risk and thus minimize the 'cost of debt' component paid to companies by various lending institutions.

Discussions related to the influence of ESG implementation and capital costs on company value are an interesting topic to be researched, considering the trend of ESG implementation carried out by companies today, to be one of the sources of decision-making that will be made by investors (Safriani and Utomo, 2020). This study will examine the indirect relationship of ESG to company value. Considering that ESG is important for increasing company value, there are still a number of indirect factors that management considers in increasing company value. One of them is the return risk factor that needs to be taken into account by management.

This study seeks to provide empirical evidence regarding the influence of ESG on company value via capital costs, as outlined in the preceding description. It examines whether a company's dedication to ESG, as a key factor in sustainable economic policies, affects its value through capital costs, a crucial metric that can be significantly impacted by ESG elements (He et al., 2023). Consequently, the investigation into the relationship between ESG implementation and company value, with capital costs serving as a mediating factor, represents the innovative aspect of this research.

Environmental, Social, and Governance (ESG). The idea of ESG was initially introduced in a United Nations report concerning the principles of responsible investing, which advises investors to regard ESG as a crucial element in their investment choices. In practice, management consulting firms and investors extensively utilize ESG scores as the primary metric to gauge a company's overall CSR performance. ESG fundamentally assesses environmental, social, and governance factors, as well as their interplay. A company's environmental performance reflects its initiatives to minimize resource usage and emissions (Yoon et al, 2018). The social performance of a company demonstrates its commitment to human rights, work quality, product accountability, and public relations. Concurrently, the Corporate Governance performance illustrates the rights and responsibilities of a company's management (Miralles et al., 2018). This evaluation is typically conducted through what are known as ESG ratings, which are tools that delineate these three dimensions along with an overall assessment. It serves as a sustainability rating that is particularly focused on environmental, social, and governance matters, primarily intended for investment decision-making.

There are different approaches to quantitatively calculating ESG ratings (called ESG scores), as they can be based on different sub-scores across multiple sub-levels involving different methodologies adopted by different operators. For example, it can be based on the aggregation of three single pillar scores (E, S, or G scores) that are each measured through multiple subfactor scores (for example, the E score can be measured through emission levels, climate risk exposure, waste management quality, and depletion of natural resources). However, ESG ratings are not the only tool that can be used to assess a company's ESG performance. Indeed, the concept of ESG can be associated with a wide range of measures, applications, and approaches, ranging from overall quantitative ratings (ESG scores) to non-financial reporting strategies (so-called ESG information) or more specific nonfinancial disclosures (so-called ESG disclosures).

The Influence of ESG on Company Value. The implementation of ESG related to Corporate Governance through good corporate governance and the Company's environmental management, which is transparently disclosed in the financial statements, shows proof of the company's social responsibility and is one way to attract investors to invest their capital in the Company. Through the Company's ESG performance, investors and the public are able to read the Company's condition and picture (Aydogmus, 2022).





Research on the influence of ESG on the Company's value has been conducted by providing the conclusion that ESG implementation is able to help increase the value and investor trust in the Company (Bahri and Cahyani, 2017; Aydogmus et al, 2022; Carmenita et al, 2025). A high ESG score and ownership of ESG certification are positively related to the Company's value (Wong et al, 2021). Information disclosure about the environment, social and corporate governance is able to provide a positive effect for increasing the Company's value (Melinda and Wardhani, 2020)

The Influence of ESG on the Cost of Capital. Despite the world's recognition of the importance of ESG practices by companies, their impact on the cost of debt in academia is still a controversial issue. Previous research has found that the correlation between ESG performance and cost of capital is crucial. Companies with relatively high ESG scores typically have lower short-term and long-term capital costs than companies with relatively low ESG scores (Ratajczak & Mikołajewicz, 2021; Eliwa et al., 2021; Erragragui, 2017; Stellner et al., 2015; Hoepner et al., 2016). On the other hand, several studies provide evidence of an inverse relationship between ESG performance and debt costs (Hasan et al., 2017; Ge & Liu, 2015; Crifo et al., 2017).

In contrast, ESG disclosures are distinct from ESG performance as they offer supplementary information, including a risk management framework that illustrates companies' recognition of their ESG vulnerabilities and their strategies to alleviate negative consequences. For instance, Jung, Herbohn, and Clarkson (2016) discovered that lenders take into account a company's susceptibility to carbon-related risks when making lending decisions, and that the effect of these risks on the escalation of debt costs diminishes when the company shows awareness of the risks and a readiness to adjust by disclosing plans for new capital investments utilizing green technology. Furthermore, increased rates of ESG disclosure correlate with reduced information asymmetry between borrowing firms and lending entities, resulting in lower debt costs.

METHODS

It Keep Causality Research aims to test hypotheses concerning the relationship between various variables. The data utilized in this study is sourced from: (1) the Indonesian Capital Market Directory (ICMD); (2) the Annual Report and the financial statements of companies listed on the Indonesia Stock Exchange for the year 2024. The sample determination for this study employs destination sampling, which includes: (1) companies listed on the Indonesia Stock Exchange that have issued financial statements for the 2024 period, and (2) companies that possess complete data relevant to the research variables. The variables examined in this study include Environment, Social, and Governance (independent variable), company value (dependent variable), and the cost of capital (WACC) as mediation variables. The data analysis will be conducted using Partial Least Squares (PLS) as the analytical tool (Ghozali, 2006).

RESULT AND DISCUSSION

The focus of this research is on companies that are listed on the Indonesia Stock Exchange in 2024 and fulfill the sample withdrawal criteria, with a total of 33 companies meeting these requirements. During the descriptive statistical phase, the outcomes of the research data analysis will be detailed through statistical testing, which includes: minimum value, median, maximum value, average value, and standard deviation, as illustrated in Table 1 below:

Table 1. Descriptive Statistics

Variable	Minimum	Maximum	Mean	Standard Deviation
Milieu	0,30	26,80	11,51	7,64





Social	0,40	20,62	9,06	4,25
Government	4,13	11,94	7,10	1,84
WACC	-0,65	10,37	2,65	1,90
Q Tobin	0,20	7,64	1,72	1,61

Table 1 above presents descriptive statistical results of exogenous, endogenous and mediating variables. The company's value variable has a mean value of 1.72, a standard deviation of 1.61, a minimum value of 0.20, maximum value of 7.64. The company's value has high variation, meaning that most companies have a market valuation close to their book value (PGEO with a value of 0.20), and only a few have a high value (TPIA with a value of 7.64). The variable environment has a fairly wide variation (min 0.30 – max 26.80), indicating that there are large differences between companies in environmental management. The same can be seen in the social variable, which also varies quite high with SD = 4.25, meaning that there is an inequality between companies with high vs low social focus. Meanwhile, the Governance variable is more homogeneous (SD = 1.84). For the mediation variable, namely WACC, there are negative (-0.65) to 10.37, with an average of around 2.65, indicating that the distribution of capital costs is quite diverse.

The feasibility assessment of the model presented in this study employed R-square (R²). This assessment aims to evaluate the capacity of exogenous constructs (independent variables) to account for variations in endogenous constructs (dependent variables), which can be observed through R-square. The R-square assessment is utilized to ascertain the extent to which the independent variable model can elucidate the dependent variable. The outcomes of the R-square assessment are displayed in the table below.

Table 2. R-Square Test Results

	R Square	R Square Customized
Cost of Capital (WACC)	0,099	- 0,029
Company Values	0,979	0,977

Based on the table above, the cost of capital (WACC) gives a value of 0.099, which indicates that the model is accepted in the weak category, where the value of R² is 0.099 < 0.19. The R² value for the company value variable is 0.979, which means that the company value model in this study belongs to a strong category where the R² value is 0.979 > 0.19.

To find out the equation of the model formed, it can be seen based on the following results:

Table 3. Coefficient Results

Influence	Shared efficiency
Environment > Company Values	0,248
Environment > Cost of Capital (WACC)	- 0,445
Social > Corporate Values	0,007
Social > Cost of Capital (WACC)	-0,303
Governance > Corporate Values	- 0,219
Governance > Cost of Capital (WACC)	-0,623
Cost of Capital (WACC) > Company Value	-0.142

Based on the results in Table 7 above, the model equations in this study can be explained as follows:



Cost of Capital (WACC). The Cost of Capital (WACC) in this study is influenced by three variables, namely Environment, Social, and Governance. The results of the equation obtained are as follows:

$$WACC = -0.445 E - 0.303 S - 0.623 G$$

The environment variable has a coefficient of - 0.445, meaning that every increase in the environment by 1 unit will decrease the capital cost by 0.445 units, assuming the other variables remain the same. Furthermore, the social variable has a coefficient of -0.303, meaning that for every social increase of 1 unit, the cost of capital will decrease by 0.303 units, assuming the other variables are fixed. The governance variable has a coefficient of - 0.623, meaning that for every increase in governance by 1 unit, there will be a decrease in capital costs of 0.623, assuming the other variables remain the same.

Company Value. The company's value variables are influenced by five variables consisting of environment, social, governance and capital costs. The results of the equation obtained are as follows:

$$T = 0.248 E + 0.007 S - 0.219 G - 0.142 WACC$$

The results of the analysis show that the environment variable has a coefficient of 0.248, meaning that every increase in the environmental value of 1 unit, the company's value will increase by 0.248 units, assuming that other variables are fixed. Furthermore, the social variable has a coefficient of 0.007 units, meaning that each social value is 1 unit; then the company's value will increase by 0.007 units, assuming the other variables remain the same. The governance variable has a coefficient of -0.219, meaning that every increase in the governance value of 1 unit will result in a decrease in the company's value by 0.219 units, assuming the other variables remain the same. The capital cost variable has a coefficient value of -0.142, which means that for every capital cost value of 1 unit, the company's value will decrease by 0.142 units, assuming the other variables remain the same.

This study conducted an analysis of data through path analysis utilizing latent variables that encompass a single formative construct. Within the research model, there exist seven (7) relationships among the constructs, which include: the relationship between the environment and capital costs, the relationship between social factors and capital costs, the relationship between governance and capital costs, the relationship between the environment and company value, the relationship between social factors and company value, the relationship between governance and company value, and the relationship between capital costs and company value. The objective of testing the research model is to evaluate the significance of the influence among the variables (full model) and to conduct a mediation test of the research model, which can be elaborated upon in detail as follows:

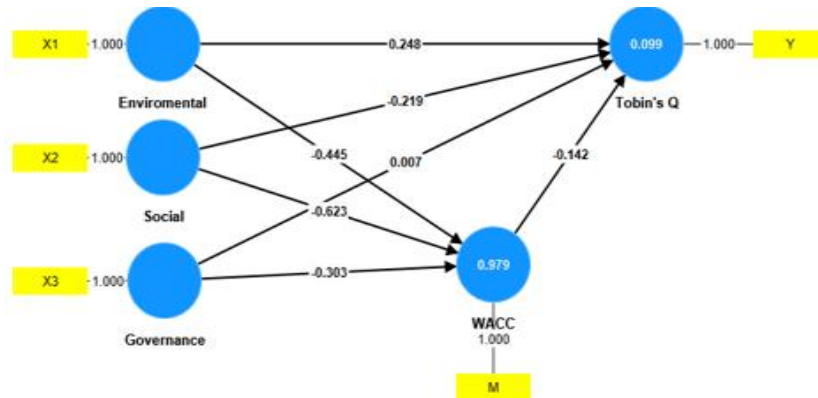


Figure 2. Bootstrapping Process Results (Significance)

Table 4. Full Model Significance Test Results

Influence	Statistics T	P value
Environment > Company Values	0,024	0,981
Environment > Cost of Capital (WACC)	6,264	0,000
Social > Corporate Values	0,016	0,987
Social > Cost of Capital (WACC)	10,969	0,000
Governance > Corporate Values	0,001	0,999
Governance > Cost of Capital (WACC)	7,039	0,000
Cost of Capital (WACC) > Company Value	0,006	0,995

Table 5. Indirect effects

Influence	Statistics T	P value
Environment > Cost of Capital (WACC) > Company Value	0,06	0,995
Social > Cost of Capital (WACC) > Company Value	0,06	0,995
Governance > Cost of Capital (WACC) > Company Value	0,06	0,995

Table 6. Total Effects

Influence	Original Sample	STDEV	Statistics T	P value
Environment > Company Values	0,311	0,137	2,262	0,024
Environment > Cost of Capital (WACC)	-0,445	0,071	6,264	0,000
Social > Corporate Values	-0,131	0,163	0,307	0,759
Social > Cost of Capital (WACC)	-0,623	0,043	7,309	0,000
Governance > Corporate Values	0,050	0,207	0,633	0,527
Governance > Cost of Capital (WACC)	-0,303	0,057	10,969	0,000
Cost of Capital (WACC) > Company Value	-0,142	22,182	0,006	0,995

This study analyzed data using path analysis with latent variables that have one formative construct. In the research model, there are 7 (seven) relationships between constructs, consisting of:

Table 7. Full Model Significance Test Results

Influence	Statistics T	P value
Environment > Company Values	0,024	0,981
Environment > Cost of Capital (WACC)	6,264	0,000



Social > Corporate Values	0,016	0,987
Social > Cost of Capital (WACC)	10,969	0,000
Governance > Corporate Values	0,001	0,999
Governance > Cost of Capital (WACC)	7,039	0,000
Cost of Capital (WACC) > Company Value	0,006	0,995

The results of the hypothesis test are explained as follows:

Hypothesis 1: Environment has a significant positive effect on firm value ($\beta = 0.311$; $p = 0.024$). It proves that the environmental dimension of ESG not only lowers the cost of capital but also increases market confidence and ultimately strengthens the company's valuation. This research supports Friede et al. (2020), who stated that environmental factors are the ESG dimensions that most consistently improve market performance and company value.

Hypothesis 2: Social affects firm value. The findings show that social has no significant effect on firm value ($\beta = -0.131$; $p = 0.527$). It indicates that although the social aspect can reduce the cost of capital, investors in Indonesia have not assessed social issues as the main factor in determining the company's valuation. This condition is in line with the phenomenon in emerging markets, where investors are still more focused on financial factors than social factors (Broadstock et al, 2021)

Hypothesis 3: Governance affects firm value. The results show that *Governance* does not have a significant effect on company value ($\beta = 0.050$; $p = 0.759$). Good governance is indeed important in reducing capital costs, but it is not yet considered the main determinant in increasing the value of the company. This research is different from the findings of Fernando et al. (2021), who found a positive relationship between governance and company values.

Hypothesis 4. The environment affects the cost of capital (WACC). The results showed that Environment (X1) had a significant negative effect on WACC ($\beta = -0.445$; $p = 0.000$). It means that the better the company's environmental management, the lower the cost of capital incurred. It is in line with stakeholder theory and legitimacy theory, which emphasizes that environmental alignment reduces regulatory, reputational, and operational risks so that investors provide a lower risk premium. Research by Broadstock et al. (2021) also supports these findings.

Hypothesis 5: Social Affects the Cost of Capital (WACC). The Social variable (X2) was shown to have a significant negative effect on WACC ($\beta = -0.623$; $p = 0.000$). It confirms that the company's concern for employees, consumers, and the surrounding community is able to reduce the risks perceived by investors. The stronger the social dimension of the company, the lower the cost of capital as public trust increases. These results are in line with Krueger et al. (2021), who found that investors consider social factors in avoiding companies with low social potential.

Hypothesis 6: Governance affects Cost of Capital (WACC). The results of the analysis showed that Governance (X3) had a significant negative effect on WACC ($\beta = -0.303$; $p = 0.000$). Good governance increases transparency and accountability and reduces potential conflicts of interest so that investors assess the company's risk more favorably. These findings are consistent with Fernando et al. (2021), who emphasize that good governance creates investor confidence and lowers the cost of capital.

Hypothesis 7: Cost of Capital (WACC) Affects Company Value. The results of the estimate showed that WACC had no significant effect on the company's value ($\beta = -0.142$; $p = 0.995$). Thus, while ESG can reduce the cost of capital, it does not directly increase the value of the company. It suggests that other external factors, such as revenue growth, profitability, and macroeconomic conditions, may have a greater influence on the company's value. These findings do not fully support the trade-off theory.

Hypothesis 8: WACC mediates the influence of the Environment on the value of the company. The results of the mediation test show that the WACC does not mediate the influence of the Environment on the value of the company ($p > 0.05$). Although the environment lowers the cost of capital, the mediation route is not significant. The influence of the environment on the company's value is more direct.

Hypothesis 9: WACC mediates the influence of Social on the value of the company. The results show that the WACC does not mediate the influence of Social on the value of the company ($p > 0.05$). Although social factors are significant to WACC, they are not strong enough to translate into an increase in company value either directly or indirectly.

Hypothesis 10: WACC mediates the influence of Governance on company value. The results of the analysis show that WACC also does not mediate the relationship between Governance and company value ($p > 0.05$). Good corporate governance does reduce capital costs, but it does not necessarily strengthen the company's valuation through the capital cost channel.

CONCLUSION

Based on the discussion that has been carried out, where the research aims to analyze the influence of environment, social, and governance, on the value of companies with capital costs as a mediating variable, conclusions can be drawn:

- Only a significant environment increases the value of the company directly
- Social and Governance are not significant to the company's value.
- Environment, Social, and Governance significantly reduce the cost of capital (WACC).
- Cost of capital (WACC) has no significant effect on company value and does not mediate the relationship between environment, social, and governance on company value.

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