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The Impact of ESG Disclosure, Intangible Assets, and IOS on Company Performance

Sinta Hena Maulita dan Luciana Spica Almilia

Accounting Department, Faculty of Economics and Business,
University of Hayam Wuruk Perbanas,
Jl. Wonorejo Utara No. 16, Surabaya, Indonesia

ABSTRACT

This study was conducted to understand the effect of environmental disclosure, social disclosure, governance disclosure, intangible assets, and investment opportunity set on the performance of companies listed on the BGK Foundation and the Indonesia Stock Exchange (IDX) during the period 2019-2023. A total of 413 data points were used as samples. Environmental Disclosure, Social Disclosure, and Governance Disclosure data were obtained from the BGK Foundation website by considering 11 indicators in each aspect. Intangible assets were measured using the intangible asset value (INTAV) formula, and Investment Opportunity Set was measured using the Market to Book Value of Equity (MBVEBVE) ratio, while company performance was measured using the Return on Assets (ROA) ratio. This study is a quantitative study using secondary data in the form of ESG disclosure data available on the BGK Foundation website and company annual reports. Data analysis techniques used multiple linear regression analysis. The results of this study indicate that environmental disclosure and investment opportunity set affect company performance. On the other hand, social disclosure, governance disclosure, and intangible assets do not affect company performance.

Keywords: *Environmental Disclosure; Social Disclosure; Governance Disclosure; Intangible Assets; Investment Opportunity Set; Company Performance*

INTRODUCTION

One important aspect that investors consider before investing their funds is the performance of the company or business partner before agreeing to a partnership. One indicator for assessing company performance using profitability ratios is ROA. ROA is used to measure the ability of company's management to generate profits from its assets (Raharjo, 2022: 168). Each company has a different ROA every year.

Based on the Return on Assets (ROA) development chart from 2019 to 2023, there is a significant variation in the performance of the seven companies. PT Unilever Indonesia Tbk. consistently recorded the highest ROA value compared to other companies, PT Indo Tambangraya Megah Tbk. showed fluctuations every year, PT Bank Central Asia Tbk. showed a stable ROA over the last five years, PT Vale Indonesia Tbk. showed a consistent increase in ROA, PT United Tractors Tbk. also recorded a significant increase in ROA. PT Total Bangun Persada Tbk. saw its ROA decline in 2022 and increase again in 2023, while PT Kalbe Farma Tbk. (KLBF) showed stable ROA performance above 10 percent throughout the observation period.

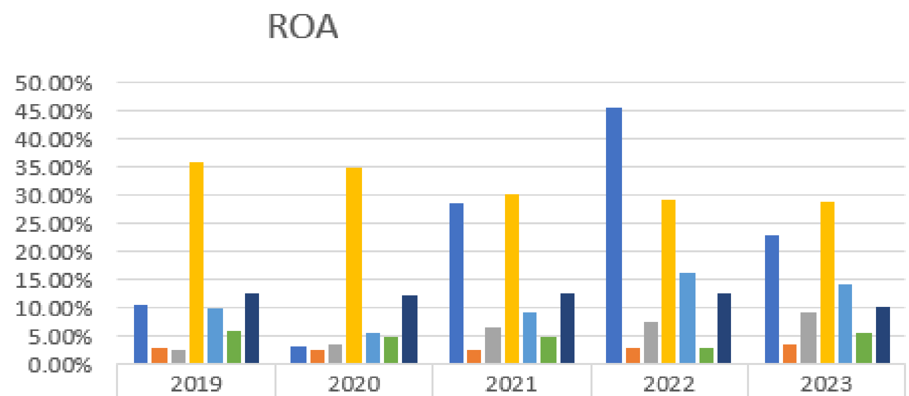
Corresponding author: **Luciana Spica Almilia:** E-mail: lucy@perbanas.ac.id

Company performance can be influenced by several factors, one of which is ESG Disclosure. Based on the stakeholder theory approach, stakeholders outside the company can be influenced by ESG disclosure as a business policy (Triyani et al., 2020). ESG is a term used in the capital market to refer to a company's non-financial performance and as part of investment decisions that consider non-financial factors (Atan et al., 2018). ESG and CSR are often compared. ESG consists of three factors, namely environmental, social, and governance. Environmental factors relate to natural environmental protection, climate change, and the environmental impact of business operations. Social factors relate to human rights, equality, diversity in the workplace, and contributions to society. The governance component includes ownership structure, board independence, transparency, minority shareholder rights, and corporate information disclosure (Atan et al., 2018).

Several things distinguish ESG and CSR, even though both discuss welfare. CSR is usually managed internally and focuses more on the company's relationship with external parties, while ESG focuses more on regulations and international standards (Firmansyah, 2024). ESG provides a more quantitative measure of sustainability and improves business assessment (Byrne, 2020). Previous studies have produced differing results. The results of a study by Durlista & Wahyudi (2023) indicate that environmental information disclosure positively affects company performance. Social and governance disclosure does not affect company performance. Meanwhile, the results of a study by Antonius & Ida (2023) show that environmental, social, and governance disclosure affects company performance.

Environmental disclosure data were obtained from the official website of the Bumi Global Karbon (BGK) Foundation (2025). The Bumi Global Karbon Foundation is an organization focused on promoting transparency, assessment, and reporting of Environmental, Social, and Governance (ESG) practices, particularly regarding sustainability disclosure, carbon emissions, and climate change in Indonesia. The foundation adopts globally recognized frameworks, such as the Global Reporting Initiative, and supports the Task Force on Climate-related Financial Disclosures framework in conducting corporate ESG assessments.

Table 1. ROA Development 2019 - 2023



	2019	2020	2021	2022	2023
PT Indo Tambangraya Megah Tbk.	10.46%	3.26%	28.53%	45.43%	22.84%
PT Bank Central Asia Tbk.	3.11%	2.52%	2.56%	3.10%	3.46%
PT Vale Indonesia Tbk.	2.58%	3.58%	6.70%	7.54%	9.38%
PT Unilever Indonesia Tbk.	35.80%	34.89%	30.20%	29.29%	28.81%
PT United Tractors Tbk.	9.97%	5.64%	9.42%	16.37%	14.37%
PT Total Bangun Persada Tbk.	5.92%	4.93%	4.96%	3.06%	5.51%
PT Kalbe Farma Tbk.	12.52%	12.41%	12.59%	12.66%	10.27%

Source: IDX, 2025

In addition to ESG, intangible assets are also an important factor in evaluating company performance. Intangible assets are assets that are not physically visible but have substantial economic value if developed and maintained properly (Bhatia & Aggarwal, 2018). One type of intangible asset is goodwill. Goodwill is part of the assets on the balance sheet and reflects the excess payment for assets required by the company compared to their market value (Rahmadiah et al., 2022). In Financial Accounting Standards (PSAK) 22, goodwill is defined as the difference between the acquisition price and the fair value of the net assets acquired. Proper recognition and measurement of goodwill and intangible assets are crucial to minimize losses and maintain financial statement transparency (Novembriana et al., 2024). The results of research by Bhatia & Aggarwal (2018) show that intangible assets have a positive effect on company performance in India. The results of research conducted by Faransahada & Wulandari (2024) also show that intangible assets have a positive effect on company financial performance.

The Investment Opportunity Set (IOS) is also one of the factors that influence company performance. The Investment Opportunity Set is the investment opportunities that a company has in the future. A decline in the IOS indicates to the public that the company has few investment opportunities (Pramiana et al., 2015). Assets are generally referred to as assets that are already owned (assets in place), while future investment opportunities are categorized as opportunities for growth (Myers, 1977). The Investment Opportunity Set (IOS) also plays a crucial role, as the combination of company assets (assets in place) and investment opportunities affects the capital structure, dividend policy, and company performance (Pramiana et al., 2015). The results of Carolina et al.'s (2022) study prove that the Investment Opportunity Set (IOS) does not affect financial performance. On the other hand, Sepriani et al.'s (2024) study has different results, namely that the Investment Opportunity Set has a positive and significant effect on financial performance.

This study does not adopt all the variables used in previous studies. The objectives of this study are: To analyze whether environmental disclosure affects company performance. Does social disclosure affect company performance? Does governance disclosure affect company performance? Do intangible assets affect company performance? Furthermore, does the investment opportunity set affect company performance? This study is expected to provide insights for companies to enhance their sustainable practices and maximize company performance.

Stakeholder Theory

Stakeholder Theory is a strategic issue related to how companies manage their relationships with stakeholders. According to Freeman (1984: 32) in his book, companies are not only responsible to shareholders, but also to all stakeholders (investors, employees, customers, suppliers, lenders, and the community), because without the support of stakeholders, companies will not survive. Companies must provide benefits to their stakeholders who have given their support through the company's daily activities (Carolina et al., 2022). The form of corporate responsibility to stakeholders is expressed through several important reports, such as company annual reports, company financial reports, sustainability reports, ESG disclosures, good intangible asset values, large investment opportunities, and other reports.

Previous studies have examined the relationship between environmental disclosure, social disclosure, governance disclosure, intangible assets, and investment opportunity set on company performance. The findings from these studies were used as a reference and comparison in this study. In a study conducted by Durlista & Wahyudi (2023), it was found that environmental information disclosure had a positive effect on company performance, while social and governance information disclosure had no effect on company performance in the coal mining subsector during the 2017-2022 period. Research conducted by Antonius & Ida, 2023 found that ESG disclosure has a positive effect on the performance of companies engaged in the energy sector, basic materials sector, and non-cyclical consumer sector listed on the Indonesia Stock Exchange during the period 2017-2021. Research conducted by Husada & Handayani (2021) found that ESG information disclosure did not affect the performance of companies in the financial sector listed on the Indonesia Stock Exchange during the 2017–2019 period.

Faransahada & Wulandari (2024) found that disclosure of intangible asset value had a positive effect on company performance in manufacturing companies during the 2018-2021 period. Research conducted by Mulyana & Wahana (2020) found that disclosure of intangible asset value has a positive effect on company performance. Research conducted by Haji & Ghazali (2018) found that intangible assets have a positive effect on the financial performance of the largest companies in Malaysia during the period 2008-2013. Research conducted by Bhatia & Aggarwal (2018) found that the value of intangible assets has a positive effect on company performance after controlling for company size, age, leverage, physical capital intensity, market share, risk, and industry in non-financial companies in India for 12 years from 2000-2001 to 2011-2012.

Carolina et al. (2022) found that the Investment Opportunity Set (IOS) and intangible assets did not affect the performance of companies in the manufacturing sector listed on the IDX from 2018 to 2020. In a study conducted by Sepriani et al. (2024), it was found that the Investment Opportunity Set (IOS) had a positive effect on the performance of companies in the cement manufacturing subsector listed on the IDX from 2016 to 2020. In a study conducted by Rivai & Mulyani (2024), it was found that the Investment Opportunity Set (IOS) did not affect the performance of companies in the transportation and logistics sector listed on the IDX from 2018 to 2022.

Hypotheses Development

From the perspective of Stakeholder Theory, environmental disclosure functions as a strategic accountability mechanism through which firms communicate their environmental responsibility to stakeholders, reduce information asymmetry, and strengthen corporate legitimacy. Stakeholder theory suggests that transparent environmental disclosure can enhance stakeholder trust and support, which in turn may improve financial performance and increase firm value. This argument is reinforced by the findings of Zhou et al. (2022), who demonstrated that ESG performance positively affects firm market value through the mediating role of financial performance, implying that sustainability practices create economic value when they are translated into superior financial outcomes. Nevertheless, empirical evidence on the effect of environmental disclosure on financial performance remains inconsistent. Durlista and Wahyudi (2023) and Antonius and Ida (2023) found a positive relationship, indicating that environmental transparency can generate financial benefits through enhanced reputation and stakeholder support, whereas Husada and Handayani (2021) reported an insignificant effect, suggesting that environmental disclosure may not always be perceived as value-relevant by stakeholders. This inconsistency reveals a critical research gap, particularly concerning the unclear mechanism through which environmental disclosure contributes to firm value creation. While prior studies have largely focused on the direct relationship between environmental disclosure and financial performance, limited evidence has examined whether financial performance acts as an underlying transmission channel linking environmental disclosure to firm value, as suggested by Zhou et al. (2022). This gap highlights the need for further investigation to clarify whether environmental disclosure creates firm value directly or indirectly through financial performance, especially in contexts where stakeholder sensitivity to sustainability issues continues to evolve.

According to Chung et al. (2023), the findings reveal a significant positive relationship between the overall extent of ESG disclosure and firm financial performance in the primary analysis. However, when the aggregate ESG score is decomposed into its environmental and social dimensions, only social disclosure is found to exhibit value relevance. Further analysis indicates that both environmental and social disclosure scores become statistically significant when firm financial performance is proxied by return on assets (ROA). Moreover, the robustness tests demonstrate that only qualitative ESG disclosures are value relevant to share prices, whereas both qualitative and quantitative ESG disclosures are significantly associated with ROA. The study further concludes that the quality of disclosures presented in annual reports provides sufficient explanatory power in explaining variations in firm financial performance. Based on the above discussion, the hypothesis to be tested is as follows:
H_1: Environmental disclosure has a positive effect on firm performance.

Social disclosure serves as a strategic mechanism for firms to communicate their social responsibility and commitment to stakeholder welfare. Stakeholder theory argues that companies are accountable not only to shareholders but also to broader stakeholder groups, including employees, customers, communities, regulators, and society at large. Through transparent social disclosure, firms can strengthen legitimacy, build trust, and improve relationships with stakeholders, which may lead to stronger operational support and enhanced financial performance. In this context, social disclosure can be viewed as a value-generating strategy because stakeholder support may improve customer loyalty, employee productivity, and corporate reputation, all of which contribute to financial outcomes.

This argument is consistent with the findings of Zhou et al. (2022), who demonstrated that ESG performance positively affects firm market value through the mediating role of financial performance. Their findings imply that sustainability-related activities, including social disclosure, can create firm value when translated into improved financial performance. However, empirical evidence on the direct relationship between social disclosure and financial performance remains inconsistent. Durlista and Wahyudi (2023) and Husada and Handayani (2021) found that social disclosure has no significant effect on financial performance, indicating that stakeholders may perceive social disclosure as symbolic compliance rather than substantive value creation. In contrast, Antonius and Ida (2023) reported a positive and significant relationship, suggesting that effective social disclosure enhances stakeholder confidence and strengthens financial performance.

These contradictory findings indicate a significant research gap concerning the economic relevance of social disclosure and the mechanism through which it creates firm value. Prior studies have primarily focused on examining the direct effect of social disclosure on financial performance, while limited attention has been given to its indirect pathway in influencing firm value through financial performance, as proposed by Zhou et al. (2022). This gap is theoretically important because Stakeholder Theory assumes that stakeholder support generated from social responsibility initiatives should produce measurable economic benefits. However, the inconsistency of prior findings suggests that the value-creation mechanism of social disclosure remains unclear. Therefore, further research is necessary to investigate whether social disclosure contributes to firm value directly or indirectly through financial performance as a mediating mechanism, particularly in emerging markets where stakeholder awareness of social sustainability issues continues to develop. Based on the above discussion, the hypothesis to be tested is as follows:
H_2: Social disclosure has a positive effect on firm performance.

Governance disclosure represents a strategic accountability mechanism through which firms communicate the quality of their internal control systems, board effectiveness, risk management practices, and ethical commitment to stakeholders. Stakeholder theory argues that effective governance transparency reduces information asymmetry, strengthens stakeholder trust, and enhances corporate legitimacy, which are essential for securing stakeholder support and sustaining business performance. In this context, governance disclosure is expected to improve financial performance because transparent governance practices signal managerial accountability and reduce agency conflicts, thereby improving decision-making efficiency and resource allocation. This argument is supported by the findings of Xie et al. (2018), who found that governance disclosure has the strongest positive contribution to corporate efficiency among ESG dimensions, indicating that governance practices are more directly linked to operational and financial outcomes. Similarly, Yu et al. (2018) demonstrated that ESG transparency enhances firm value by reducing information asymmetry and increasing investor confidence, while Zhou, G., Liu, L., and Luo, S. (2022) further confirmed that ESG performance improves firm value through the mediating role of financial performance.

However, empirical findings on the relationship between governance disclosure and financial performance remain inconclusive. Studies by Durlista and Wahyudi (2023) and Husada and Handayani (2021) found that governance disclosure has no significant effect on financial performance, suggesting that governance transparency may function merely as a compliance mechanism without generating immediate economic benefits. In contrast, Antonius and Ida (2023) reported a positive and significant relationship, indicating that strong governance disclosure can improve financial performance by strengthening stakeholder confidence and reducing governance-related risks. These conflicting findings reveal a critical research gap regarding the effectiveness of governance disclosure as a value-creating mechanism. More specifically, prior studies have largely focused on the direct effect of governance disclosure on financial performance, while limited empirical evidence has examined whether financial performance acts as an intermediary channel through which governance disclosure contributes to firm value, as suggested by Zhou et al. (2022). This gap is theoretically important because Stakeholder Theory assumes that transparent governance practices should generate stakeholder trust and economic value, yet inconsistent empirical findings suggest that the transmission mechanism remains unclear. Therefore, further investigation is needed to clarify whether governance disclosure directly improves firm value or indirectly influences it through financial performance, particularly in emerging market contexts where governance quality and stakeholder sensitivity continue to evolve. Based on the above discussion, the hypothesis to be tested is as follows:
H_3: Governance disclosure has a positive effect on firm performance.

Intangible assets represent strategic resources that create value by strengthening a firm's ability to meet stakeholder expectations and sustain competitive advantage. Stakeholder theory argues that firms are not only required to generate profits for shareholders but also to create value for broader stakeholders through innovation, reputation, knowledge, and relational capital. In this context, intangible assets such as intellectual capital, brand equity, patents, technology, and organizational knowledge become critical drivers of financial performance because they enhance operational efficiency, innovation capability, and market competitiveness. This argument is supported by prior empirical studies. Faransahada and Wulandari (2024), Mulyana and Wahana (2021), Haji and Ghazali (2018), and Bhatia and Aggrawal (2018) consistently found that intangible assets have a positive effect on financial performance, indicating that firms with stronger intangible resource bases are better positioned to improve profitability, enhance

efficiency, and generate sustainable economic benefits. These findings reinforce the strategic importance of intangible assets as value-creating resources that strengthen stakeholder confidence and support long-term business growth. Based on the above discussion, the hypothesis to be tested is as follows:
H_4: Intangible assets have a positive effect on firm performance.

The Investment Opportunity Set (IOS) reflects a firm's growth potential and strategic investment capacity, which can influence stakeholders' perceptions regarding the firm's prospects. Stakeholder Theory argues that firms with strong investment opportunities signal their commitment to long-term value creation, innovation, and sustainable business development, thereby strengthening stakeholder confidence and support. A higher IOS indicates that a firm has more profitable growth opportunities, which may improve operational performance, attract investors, and enhance access to external financing. These advantages can ultimately improve financial performance through increased profitability, efficiency, and market competitiveness. This argument is supported by the findings of Sepriani et al. (2024), who found that the Investment Opportunity Set has a positive effect on financial performance, indicating that firms with greater growth opportunities are better positioned to generate superior financial outcomes and sustain stakeholder trust.

However, the empirical relationship between the Investment Opportunity Set and financial performance remains inconclusive. Studies by Faransahada and Wulandari (2024) and Carolina et al. (2022) found that the Investment Opportunity Set has no significant effect on financial performance, suggesting that the availability of growth opportunities does not always translate into immediate financial benefits. These inconsistent findings may be caused by differences in firms' investment effectiveness, managerial capability, industry characteristics, or external economic conditions that influence the realization of investment opportunities. This inconsistency reveals an important research gap regarding the effectiveness of IOS as a driver of financial performance. In particular, while Stakeholder Theory assumes that growth opportunities should strengthen stakeholder confidence and create economic value, inconsistent empirical evidence suggests that the mechanism through which IOS affects financial performance remains unclear, particularly in the context of firms operating in emerging markets. Based on the above discussion, the hypothesis to be tested is as follows:
H_5: The Investment Opportunity Set has a positive effect on firm performance.

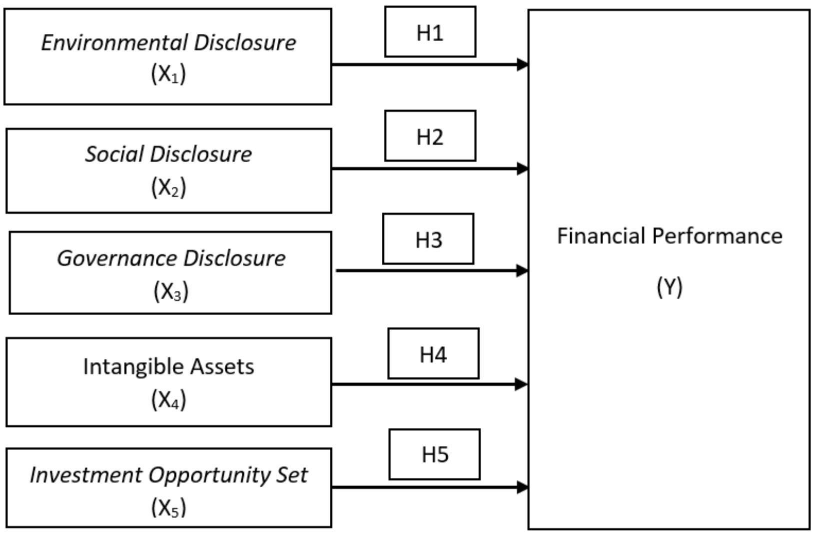


Figure 1. Theoretical Framework

METHOD, DATA, AND ANALYSIS

This study uses a population consisting of all companies listed on the BGK Foundation database and registered on the Indonesia Stock Exchange (IDX) for the 2019–2023 period. BGK Foundation is an organizational platform that provides ESG (Environmental, Social, and Governance) scores and analytical insights for companies in Indonesia. It aims to enhance corporate transparency by making ESG performance measurable and accessible to stakeholders. Through standardized assessments, the platform evaluates how companies manage environmental, social, and governance responsibilities. Ultimately, BGK Foundation supports the advancement of sustainable and responsible business practices in Indonesia. The sample was selected from companies that meet the predetermined sampling criteria. The data employed in this research are secondary data, including ESG disclosure scores, financial statements, and annual reports for the 2019–2023 period, obtained from the official websites of the BGK Foundation and the Indonesia Stock Exchange.

The sampling method used in this study is purposive sampling, which is intended to obtain a sample that aligns with the research objectives and meets the criteria required to provide relevant information for the analysis. Based on the sampling technique applied, the sample criteria are as follows:

1. The sample consists of all companies across all sectors included in the BGK Foundation database as a professional ESG disclosure assessor and listed on the Indonesia Stock Exchange (IDX) during the 2019–2023 period.
2. The observation period covers five years, namely 2019, 2020, 2021, 2022, and 2023.

Table 2. Sample Selection

No.	Criteria	Total
1	Complete ESG Disclosure data and listed companies (2019)	39
2	Complete ESG Disclosure data and listed companies (2020)	101
3	Complete ESG Disclosure data and listed companies (2021)	119
4	Complete ESG Disclosure data and listed companies (2022)	121
5	Complete ESG Disclosure data and listed companies (2023)	113
	Total	493

In this study, the data utilized are secondary, namely, information collected from organizations in the form of corporate financial statements and annual reports for the years 2019, 2020, 2021, 2022, and 2023. The data were analyzed using multiple linear regression with the Statistical Product and Service Solution (SPSS) software, which enables the identification of the influence of independent variables (X) on the dependent variable (Y). Before conducting the multiple linear regression analysis, classical assumption testing and model feasibility testing were performed to ensure the appropriateness of the model used. The classical assumption tests include the normality test, multicollinearity test, heteroscedasticity test, and autocorrelation test. In addition, model feasibility tests include the F-test, coefficient of determination (R^2), and t-test. The variables in this study are divided into two categories: the dependent variable (Y), which is firm performance, and the independent variables (X), which consist of environmental disclosure (X1), social disclosure (X2), governance disclosure (X3), intangible assets (X4), and the investment opportunity set (X5).

One of the indicators used to assess firm performance through profitability ratios is Return on Assets (ROA). ROA measures a company's ability to generate profit from the assets it owns (Raharjo, 2022: 168). The study uses ROA (Return on Assets) as the primary proxy for financial performance because it provides a more comprehensive measure of operational efficiency by capturing how effectively a firm utilizes its total assets to generate earnings. Compared to ROE, ROA is less affected by a firm's capital structure and leverage decisions, making it more suitable for cross-firm comparisons. In contrast to Tobin's Q, which is market-based and subject to market volatility and investor sentiment, ROA reflects actual accounting performance derived from internal operations. Therefore, ROA is considered a more stable and reliable indicator for assessing firm performance in this study. Thus, ROA can be formulated as follows (Raharjo, 2022: 168):

$$ROA = \frac{Earnings\ after\ Tax}{Total\ Assets}$$

Environmental disclosure data were obtained from the official BGK Foundation website (2025) by considering eleven components (BGK Foundation, 2025): Greenhouse Gas (GHG) Emissions, GHG Intensity, Energy Consumption, Energy Intensity, Energy Mix, Water Consumption, Environmental Policies, Procedures, and Processes (PPP), Environmental Oversight by the Board of Directors, Environmental Oversight by Senior Management, Climate and Environmental Investment Management and Analysis, and Corporate Social Responsibility (CSR) in Forestry.

Social disclosure data were obtained from the official BGK Foundation website (2025) by considering eleven components (BGK Foundation, 2025): CEO Pay Ratio, Gender Pay Ratio, Employee Turnover Percentage, Gender Diversity Percentage, Percentage of Temporary Workers, Non-Discrimination PPP, Injury/Accident Rates, Occupational Health and Safety Levels, Child Labour/Forced Labour, Human Rights PPP, and Social CSR.

Governance disclosure data were obtained from the official BGK Foundation website (2025) by considering eleven components (BGK Foundation, 2025): Board Member Diversity, Board Independence from Outside Influence, Monetary Incentives Linked to Sustainability, Collective Bargaining Protocols and Agreements, Third-Party Code of Ethics, Anti-Corruption Ethics and Legal Compliance, Privacy and Personal Data Protection, Sustainability Reports, Disclosure Mechanisms, Independent Assurance, and Tax Transparency.

Intangible assets are non-physical assets that possess substantial economic value when properly developed and maintained (Bhatia & Aggarwal, 2018). Goodwill is part of the assets reported in the balance sheet and reflects the premium paid by a company over the fair market value of acquired assets (Rahmadiah et al., 2022). The measurement of intangible assets can be determined using the following formula (Mulyana & Wahana, 2020):

$$INTAV = CMV - BVNA$$

Note:
CMV = Number of Shares Outstanding × Closing Stock Price
BVNA (Total Equity) = Total Assets " Total Liabilities

Investment Opportunity Set is a collection of investment opportunities that serve as alternatives for future investment decisions (Sepriani et al., 2024). A company's success can be assessed based on the growth of its investment opportunities (Rivai & Mulyani, 2024). The Investment Opportunity Set is calculated using the MBVE/BVE ratio (Sepriani et al., 2024):

$$MBVEBVE = \frac{Number\ of\ Outstanding\ Shares\ x\ Closing\ Price}{Total\ Equity}$$

RESULTS AND DISCUSSION

The analyses conducted in this study include descriptive statistical analysis, classical assumption tests, multiple linear regression analysis, and hypothesis testing. The ratios used in the study consist of ROA, Environmental Disclosure scores, Social Disclosure scores, Governance Disclosure scores, Intangible Assets values (which were transformed using the formula Log10 = (k – x) to convert them into ratio scale values), and the Investment Opportunity Set.

During the initial normality test and the first hypothesis testing, the results of the Asymp. Sig. (2-tailed) and Monte Carlo Sig. (2-tailed) values were below 0.05, indicating that the sample data were not normally distributed. At this stage, none of the variables showed a significant effect. The researcher then removed 80 outlier observations from the dataset.

After outlier removal, the second normality test still showed Asymp. Sig. (2-tailed) and Monte Carlo Sig. (2-tailed) values that did not meet the normal distribution criteria. However, the hypothesis testing at this stage indicated that four variables had significant effects. Following additional sample criteria screening and outlier elimination procedures, the final sample obtained for the 2020–2023 period consisted of 413 company-year observations.

Descriptive Analysis

Based on 413 sample observations consisting of the dependent variable (firm performance) and the independent variables (environmental disclosure, social disclosure, governance disclosure, intangible assets, and investment opportunity set), the descriptive statistics for firm performance are as follows. Firm performance has a minimum value of –0.221 or –22.1%, indicating that some companies experienced negative net income or losses, resulting in negative performance values. The maximum value is 0.454 or 45.4%, showing that certain companies were able to manage their assets effectively to generate high profitability. The mean value of firm performance is 0.04367 or 4.367%, suggesting that, on average, companies in the sample generate relatively low returns compared to their total assets. The standard deviation of 0.066096 or 6.6096% reflects considerable variation in performance across companies. These results indicate that while some firms successfully generate profits from their assets, others face losses in managing their assets for operational activities.

Table 3 Descriptive Analysis

Variables	N	Minimum	Maximum	Mean	Std. Deviation
ROA	413	-0.221	0.454	0.04367	0.066096
ENVIRONMENTAL DISCLOSURE	413	0.010	0.960	0.31048	0.238761
SOCIAL DISCLOSURE	413	0.020	0.920	0.30312	0.208300
GOVERNANCE DISCLOSURE	413	0.020	0.920	0.32431	0.188932
INTAV	413	15.091	14.985	15.07203	0.010134
MBVEBVE	413	-0.425	38.171	1.96857	3.513992

The minimum value of Environmental Disclosure is 0.010 or 1%, and the maximum value is 0.96 or 96%. The mean value is 0.31048 or 31.048%, with a standard deviation of 0.238761 or 23.88%. These results indicate that some companies undertake only limited environmental-related activities, while others show low awareness in disclosing their environmental responsibilities. The minimum value of Social Disclosure is 0.020 or 2%, and the maximum value is 0.920 or 92%. The mean value of 0.30312 or 30.312%, with a standard deviation of 0.208300 or 20.83%, indicates that several companies still exhibit low awareness in disclosing their social responsibility activities. The minimum value of Governance Disclosure is 0.020 or 2%, and the maximum value is 0.920 or 92%. The mean value is 0.32431 or 32.431%, and the standard deviation is 0.188932 or 18.90%, suggesting that some companies still lack clarity and accuracy in providing information related to governance practices and performance.

The maximum value of Intangible Assets is 14.985, which represents the LOG10 (K–X) transformation of IDR 222,221,312,250,000. The minimum value is 15.091, which represents the LOG10 (K–X) transformation of –IDR 43,833,891,000,000. The negative value arises because the book value of net assets exceeds the company's market value. The mean value is 14.9410, equivalent to IDR 7,141,262,534,569, with a standard deviation of 0.10125. The minimum value of the Investment Opportunity Set is –0.425 or –42.5%, which is negative due to negative equity, potentially caused by negative retained earnings or accumulated losses. The maximum value is 38.171 or 3,817.1%. The mean value of 1.96857 or 196.857% indicates that, on average, companies have investment opportunities exceeding 100%. The standard deviation of 3.513992 or 351.3992% shows substantial variation, with some companies having investment opportunities well above 100%, while others fall below this threshold.

The normality test in this study aims to determine whether the data for both the dependent and independent variables in the regression model are normally distributed. The normality test was conducted using the Kolmogorov–Smirnov test in SPSS. The results show an Asymp. Sig. (2-tailed) value of $0.000 < 0.05$, and the Monte Carlo Sig. (2-tailed) value also falls below 0.05, indicating that the data are not normally distributed. The multicollinearity test is used to examine whether there is a correlation among the independent variables in the regression model. Multicollinearity was assessed using the Variance Inflation Factor (VIF) and Tolerance (TOL) values (Sahir, 2022: 70). The results show that all tolerance values for the independent variables are above 0.10, and all VIF values are below 10. These results indicate that the regression model is free from multicollinearity issues. The heteroscedasticity test was conducted to determine whether there is inequality in the variance of residuals across observations. This study employed the Glejser test to detect heteroscedasticity. The results show that one independent variable, namely the investment opportunity set, has a significance value of $0.000 < 0.05$, which indicates the presence of heteroscedasticity. Overall, the probability values across variables vary, confirming that the model exhibits heteroscedasticity symptoms.

The autocorrelation test was performed to determine whether there is a correlation between adjacent observations in the dataset. The Run Test was used to detect autocorrelation. The test results show an asymptotic. Sig. (2-tailed) value of 0.000, which is smaller than the significance threshold of 0.05 ($0.000 < 0.05$). This indicates that the data exhibit autocorrelation.

Multiple Linear Regression Analysis

The results of the multiple linear regression analysis present the coefficients and constant for the relationships among the variables, allowing the regression model to be formulated as follows:

ROA = 9.165 + 0.123 (Environmental Disclosure) – 0.033 (Social Disclosure) – 0.099 (Governance Disclosure) – 0.605 (INTAV) + 0.002 (MBVEBVE)

The interpretation of the regression results is explained below:

1. Constant (Intercept) = 9.165. This indicates that if all independent variables (Environmental Disclosure, Social Disclosure, Governance Disclosure, INTAV, MBVEBVE) are equal to zero, the company's performance (ROA) is predicted to be 9.165.
2. Coefficient of Environmental Disclosure = 0.123. This means that, assuming other independent variables remain constant, an increase of 1 unit in Environmental Disclosure will increase company performance by 0.123. The positive sign indicates a positive relationship between environmental disclosure and company performance.
3. Coefficient of Social Disclosure = –0.033. This means that, assuming other variables remain constant, an increase of 1 unit in Social Disclosure will decrease company performance by 0.033. The negative sign indicates a negative relationship between social disclosure and company performance.
4. Coefficient of Governance Disclosure = –0.099. This means that, holding other variables constant, a 1-unit increase in Governance Disclosure will reduce company performance by 0.099. The negative value indicates a negative relationship between governance disclosure and company performance.
5. Coefficient of Intangible Assets = –0.605. This means that, assuming other variables remain constant, a 1-unit increase in INTAV will result in a 0.605-unit reduction in company performance. The negative coefficient indicates a negative relationship between intangible assets and company performance.
6. Coefficient of Investment Opportunity Set) = 0.002. This indicates that, if other variables remain constant, a 1-unit increase in MBVEBVE will result in a 0.002-unit increase in company performance. The positive sign shows a positive relationship between the investment opportunity set and company performance.

Based on the results of the F-test, an F-value of 6.601 was obtained with a significance value (p-value) of 0.000. Since this significance value is lower than 0.05 (the commonly used threshold for hypothesis testing), it can be concluded that one or more of the independent variables (Environmental Disclosure, Social Disclosure, Governance Disclosure, INTAV, MBVEBVE) have a significant effect on the dependent variable (firm performance).

Table 4 T test

Coefficients[a]						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	9.165	4.950		1.852	.065
	ENVIRONMENTAL DISCLOSURE	.123	.030	.444	4.128	.000
	SOCIAL DISCLOSURE	-.033	.037	-.104	-.892	.373
	GOVERNANCE DISCLOSURE	-.099	.041	-.284	-2.435	.015
	INTAV	-.605	.328	-.093	-1.843	.066
	MBVEBVE	.002	.001	.124	2.426	.016

Results

H_1: Environmental disclosure has a positive effect on firm performance. The significance value for the Environmental Disclosure variable is 0.000 < 0.05, indicating that Environmental Disclosure has a significant effect on firm performance. The coefficient value of 0.123 shows that higher Environmental Disclosure is associated with an increase in firm performance. Therefore, H1 is accepted, confirming that Environmental Disclosure positively influences Firm Performance.

H_2: Social Disclosure and Firm Performance. The significance value for the Social Disclosure variable is 0.373 > 0.05, indicating that Social Disclosure does not have a significant effect on firm performance. The coefficient value of –0.033 suggests a slight negative relationship, although statistically insignificant. Thus, H2 is rejected, as Social Disclosure does not influence Firm Performance.

H_3: Governance Disclosure and Firm Performance. The significance value for the Governance Disclosure variable is 0.015 < 0.05, indicating that Governance Disclosure significantly affects firm performance. The coefficient value of –0.099 shows a negative influence, meaning that higher levels of governance disclosure are associated with a decline in firm performance. Therefore, H3 is rejected, as Governance Disclosure harms Firm Performance.

H_4: Intangible Assets and Firm Performance. The significance value for the Intangible Assets variable is 0.066 > 0.05, indicating that intangible assets do not have a significant effect on firm performance. The coefficient value of –0.605 also reflects a negative relationship. Thus, H4 is rejected, confirming that Intangible Assets do not influence Firm Performance.

H_5: Investment Opportunity Set and Firm Performance. The significance value for the Investment Opportunity Set variable is 0.016 < 0.05, indicating a significant effect on firm performance. The coefficient value of 0.002 suggests a positive relationship between the investment opportunity set and firm performance. Therefore, H5 is accepted, showing that the Investment Opportunity Set positively influences Firm Performance.

The coefficient of determination test was conducted to assess the model's suitability and to determine how much the independent variables explain the variation in the dependent variable. The adjusted R^2 value is 0.064, or 6.4%, indicating that the independent variables (Environmental Disclosure, Social Disclosure, Governance Disclosure, Intangible Assets, and Investment Opportunity Set) collectively explain 6.4% of the variation in firm performance. The remaining 93.6% is influenced by other factors outside the model and not examined in this study.

DISCUSSION

Effect of Environmental Disclosure on Firm Performance

Environmental disclosure serves as a strategic communication mechanism through which firms demonstrate their commitment to environmental responsibility and sustainability to stakeholders. Stakeholder Theory argues that transparent environmental disclosure reduces information asymmetry, enhances corporate legitimacy, and strengthens stakeholder trust, which are essential for gaining stakeholder support and maintaining effective business operations. In this context, environmental disclosure is expected to improve firm performance because stakeholders tend to provide greater support to firms that are perceived as environmentally responsible, whether through investment decisions, customer loyalty, or operational cooperation. This argument is supported by the findings of Durlista and Wahyudi (2023), who found that environmental disclosure positively influences firm performance, indicating that greater environmental transparency is associated with higher profitability. Similarly, Antonius and Ida (2023) reported that environmental disclosure significantly affects firm performance, suggesting that firms with strong commitments to sustainability can reduce business risks, strengthen stakeholder confidence, and enhance stakeholder support, which ultimately contributes to improved firm performance.

The results presented in Table 4 indicate that hypothesis H1 is accepted, providing statistical evidence that environmental disclosure has a positive effect on firm performance. These findings suggest that environmental non-financial disclosures can enhance stakeholder trust and generate favorable evaluations, thereby enabling business operations to run more effectively and ultimately improving firm performance. Consistent with this result, Durlista & Wahyudi (2023) found that environmental disclosure positively influences firm performance. The greater the extent of environmental information disclosed, the higher the firm's profitability. This is aligned with stakeholder theory, which posits a link between environmental disclosure and firm performance. Strong stakeholder trust can directly affect the level of support stakeholders provide for the firm's operational activities. Similarly, Antonius & Ida (2023) reported that environmental disclosure significantly affects firm performance. Firms that prioritize environmental transparency tend to attract greater attention from stakeholders. A strong commitment to sustainability reduces business risks, strengthens stakeholder confidence, and ultimately increases stakeholder support for the company (Antonius & Ida, 2023).

Effect of Social Disclosure on Firm Performance

Social disclosure reflects a firm's commitment to fulfilling its social responsibilities and maintaining relationships with key stakeholders, such as employees, communities, customers, and society at large. Stakeholder Theory suggests that transparent social disclosure can strengthen stakeholder trust, improve corporate legitimacy, and foster stakeholder support, which are expected to contribute to better firm performance. However, the impact of social disclosure on firm performance may not be immediate, as social initiatives often require substantial investments in financial resources, time, technology, and human capital before generating tangible economic benefits. If stakeholders perceive social disclosure merely as symbolic reporting rather than substantive action, its influence on firm performance may remain limited. This argument is consistent with the findings of Durlista and Wahyudi (2023), who found that social disclosure has no significant effect on firm performance, indicating that social information disclosed by companies does not necessarily create measurable economic benefits. Similarly, Husada and Handayani (2021) reported that social disclosure does not influence firm performance, suggesting that social practices only produce meaningful financial outcomes when firms allocate sufficient resources and achieve concrete social performance, enabling stakeholders to recognize and respond positively to the firm's social commitment.

The results presented in Table 4 show that hypothesis H2 is rejected, indicating statistical evidence that social disclosure does not affect firm performance. This finding suggests that social non-financial disclosures are not a primary consideration for stakeholders; therefore, social disclosure does not influence firm performance. Social practices typically generate measurable outcomes only when the level of investment reaches a certain threshold. Significant impacts tend to emerge only when companies commit sufficient resources—including funding, time, effort, technology, and human capital—to their social initiatives. This aligns with stakeholder theory, which posits that benefits arise only when stakeholder engagement reaches a meaningful scale. Consistent with this conclusion, Durlista & Wahyudi (2023) found that social disclosure has no significant effect on firm performance. Their results indicate that the social information disclosed by companies does not generate measurable benefits for the firm. Similarly, Husada & Handayani (2021) also reported that social disclosure does not influence firm performance. According to their findings, social practices only produce results once investments reach a substantial level or once concrete achievements have been made. Before reaching this threshold, any expenditure related to social activities will not significantly affect a company's financial performance (Husada & Handayani, 2021).

Effect of Governance Disclosure on Firm Performance

Governance disclosure represents a strategic accountability mechanism through which firms communicate the quality of their governance structures, internal control systems, board effectiveness, and compliance practices to stakeholders. Stakeholder Theory argues that transparent governance practices should strengthen relationships between firms and stakeholders—such as investors, top management, boards of commissioners, and regulatory institutions—by reducing information asymmetry, enhancing trust, and increasing corporate legitimacy, which in turn are expected to improve firm performance. However, empirical evidence suggests otherwise. The findings indicate that governance disclosure negatively affects firm performance, implying that governance transparency does not always create immediate economic benefits and may even generate additional compliance costs, administrative burdens, or expose governance weaknesses to stakeholders. This negative relationship may also reflect ineffective implementation of good corporate governance practices, where disclosure functions merely as a formal compliance mechanism rather than a value-creating strategy. These findings are consistent with Durlista and Wahyudi (2023), who found that governance disclosure has a negative influence on firm performance, and Husada and Handayani (2021), who argued that weak governance implementation may undermine the expected benefits of governance transparency. This inconsistency with Stakeholder Theory suggests that the effectiveness of governance disclosure in enhancing firm performance depends not only on the extent of disclosure but also on the quality and substance of governance practices implemented by the firm.

The results presented in Table 4 indicate that hypothesis H3 is rejected, as the statistical evidence shows that governance disclosure hurts firm performance. These findings differ from stakeholder theory, which posits that a harmonious relationship between the company and its stakeholders—such as top management, the board of commissioners, and government institutions—should strengthen sustainability, enhance firm value, and improve performance. In contrast, the results of this study show that governance-related disclosure negatively affects firm performance. This may occur because governance aspects are already considered in the company's internal performance mechanisms, but their disclosure alone may not serve as a determining factor. The negative effect may also be attributed to the weak implementation of good corporate governance practices within the company (Husada & Handayani, 2021). Similarly, Durlista & Wahyudi (2023) found that governance disclosure has a negative influence on firm performance. Contrary to stakeholder theory, which emphasizes that strong relationships between companies and stakeholders in governance contexts lead to improved performance, the empirical results indicate that governance disclosure instead exerts a negative impact on firm performance (Durlista & Wahyudi, 2023).

Effect of Intangible Assets on Firm Performance

Intangible assets such as reputation, intellectual capital, innovation capability, and brand value are strategic resources that can strengthen stakeholder relationships and enhance corporate competitiveness. Stakeholder Theory argues that these intangible resources create value by increasing stakeholder trust, improving legitimacy, and supporting long-term business sustainability. In theory, firms with strong intangible assets should be better positioned to attract investors, customers, and business partners, thereby improving firm performance. However, empirical findings indicate that intangible assets do not have a significant effect on firm performance, suggesting that stakeholders may not yet perceive intangible assets as a primary factor in evaluating company performance. This may occur because market participants tend to focus more on tangible assets and physical resources, which are more visible and easier to measure in decision-making processes. These findings are consistent with Carolina et al. (2022), who found that intangible assets do not influence firm performance, indicating that the market does not necessarily assign higher value to firms based on the amount of intangible assets they possess. This inconsistency suggests that the effectiveness of intangible assets in improving firm performance depends on how stakeholders recognize, value, and respond to these strategic resources within the broader business environment.

The results shown in Table 4 indicate that hypothesis H4 is rejected, providing statistical evidence that intangible assets do not have a significant effect on firm performance. These findings suggest that intangible assets have not yet become a primary consideration in decision-making, as market assessments tend to focus more on the physical assets and tangible resources owned by a company. Supporting this conclusion, the study by Carolina et al. (2022) also found that intangible assets do not influence firm performance. This occurs because intangible assets are currently not considered a key factor in investment or managerial decision-making. As a result, the market does not assign a higher valuation to companies with greater or lesser amounts of intangible assets. Instead, market evaluations tend to rely predominantly on the physical resources a firm possesses (Carolina et al., 2022).

Effect of the Investment Opportunity Set on Firm Performance

The results presented in Table 4 indicate that hypothesis H5 is accepted, providing statistical evidence that the investment opportunity set has a positive effect on firm performance. These findings suggest that larger and more favourable investment opportunities can attract investors to allocate their assets to the company. Such investments can enhance the firm's operational productivity, thereby increasing profit generation and ultimately improving the overall performance of the firm. Companies will strive to demonstrate strong performance to position themselves as attractive investment options for the future (Carolina et al., 2022).

Consistent with these findings, the study by Sepriani et al. (2024) reveals that the Investment Opportunity Set has a positive and significant effect on the financial performance of manufacturing companies in the cement sub-sector listed on the Indonesia Stock Exchange during the period 2016–2020. This supports the notion that substantial and promising investment opportunities can draw investor interest, and the resulting investments can optimize the firms' operational productivity, maximize profit generation, and enhance firm performance.

CONCLUSION AND SUGGESTIONS

This study aims to examine whether factors such as ESG disclosure, intangible assets, and the investment opportunity set (IOS) influence firm performance. The t-test results indicate that environmental disclosure and the investment opportunity set have a significant effect on firm performance. Meanwhile, social disclosure, governance disclosure, and intangible assets do not show any significant influence on firm performance.

Based on the analysis conducted, several limitations should be acknowledged for future research. The primary limitation lies in the fact that the dataset used contains non-normally distributed data, and the F-test results exceed the acceptable significance level. Consequently, outlier removal and data transformation were required. The heteroscedasticity and autocorrelation tests also revealed that the data suffered from both heteroscedasticity and autocorrelation issues. In addition, many sample companies did not have available ESG disclosure scores for certain years, resulting in an incomplete representation of the actual condition of the overall sample. The companies examined also come from various sectors, each having different characteristics. Furthermore, the BGK Foundation website provides limited information regarding which ESG disclosure indicators are fulfilled or not, which restricts the completeness and reliability of the ESG data used.

Considering these limitations, several recommendations are proposed for future research. For studies involving non-normally distributed data, it is advisable to apply Monte Carlo simulations to address issues related to abnormal data distribution. Due to the limited availability of ESG disclosure data from the BGK Foundation, future researchers are encouraged to explore alternative sources, such as Bloomberg or Sustainalytics, to obtain more comprehensive ESG disclosure information. It is also recommended that future studies focus on companies within a specific sector so that differences in sector-specific characteristics do not introduce bias into the analysis. This approach would allow research findings to be more in-depth, relevant, and reflective of sector-specific conditions.

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