Available online at www.rajournals.in

International Journal of Management and Economics Invention

ISSN: 2395-7220

DOI: 10.47191/ijmei/v11i3.13

Volume: 11 Issue: 03 March 2025

International Open Access

Impact Factor: 8.518 (SJIF)

Page no. 4101-4114

The Impact of Environmental, Social, and Governance Disclosure on Financial Performance with Green Intellectual Capital as an Intervening Variable

Roudhotul Jannah[1], Windu Mulyasari[2]

[1,2] Accounting Study Program, Faculty of Economics and Business, Universitas Sultan Ageng Tirtayasa, Indonesia.

ARTICLE INFO

Published Online:
19 March 2025

Corresponding Author:
Roudhotul Jannah

ABSTRACT

The aim of this research is to identify the relationship between Environmental, Social, and Governance (ESG) disclosure and financial performance measured using ROA with Green Intellectual Capital as an intervening variable. Green Intellectual Capital is measured by three components: Green Human Capital, Green Structural Capital, and Green Relational Capital. This type of research uses a quantitative method. To see how the independent variable impacts the dependent variable, this research uses panel data regression, which is a combination of time series data and cross-sectional data.The researcher uses Stata 14, a statistics and data software created by StataCorp in 1985 and used for statistical analysis.

The data source for this study is based on financial statements, annual reports, and sustainability reports of companies in the energy sector for the period ending December 31, 2020–2023. Data was accessed through the official website of the Indonesia Stock Exchange (IDX) at www.idx.co.id and the official company websites. Additionally, data sources for this research were accessed through the official Thomson Reuters Eikon site to obtain the ESG scores of the companies studied.

The results of this study indicate that ESG disclosure does not have a significant effect on ROA. ESG disclosure has a significant effect on GSC and GRC, while it does not have a significant effect on GRC. Furthermore, GSC has a significant effect on ROA, while GHC and GRC do not have a significant effect. GSC can mediate the relationship between ESG disclosure and ROA, while GHC and GRC cannot mediate.

KEYWORDS: ESG Disclosure, Financial Performance, Green Intellectual Capital, Green Human Capital, Green Structural Capital, Green Relational Capital

1. INTRODUCTION

Financial performance is one of the important factors in a company that can serve as a measure of the success of a company over a certain period. The financial performance of a company reflects its financial condition and is an important tool for management, investors, and stakeholders to assess the effectiveness of the operational and business strategies implemented. The financial performance of a company can have a greater impact on the economy as a whole and on the lives of society in general. Essentially, companies with good and improving results from the previous year can continue their operations. However, in today's era, companies are not only financially responsible but also accountable for environmental damage (Sari et al., 2023). The fundamental condition of a business has an impact on good financial performance, which has an impact on the future survival of the business (Malikah et al., 2024).

Companies must consider the social and environmental impacts of their operational activities as awareness of sustainability increases. Corporate Social Responsibility (CSR) has evolved. Initially, companies reported more on social values and the conditions and safety of workers, while the prevalence of social and environmental issues such as pollution has decreased (Alfalih, 2023). Due to the increasing demands for transparency and sustainability in the business industry, companies worldwide are prioritizing ESG strategies and investments (Naeem & Çankaya, 2022). Currently, most of the international community uses ESG rating systems to assess corporate social responsibility at various levels (Zhou et al., 2024).Specifically, ESG signals a company's commitment to welfare, social, and

environmental issues, which helps create strong relationships between stakeholders and community interests (Reboredo & Sowaity, 2021).

The financial performance of the energy sector in Indonesia from 2020 to 2023 shows an interesting trend, particularly in terms of Environmental, Social, and Governance (ESG) disclosures. After experiencing negative impacts from the COVID-19 pandemic in 2020, the energy industry began to recover with significant increases in revenue and net profit. The net profit of energy companies was recorded at IDR 1.4 trillion in 2021 and surged to IDR 3.8 trillion in 2022. Economic recovery and better management of energy resources in the country drove this increase. According to a press release issued by Kementerian Energi dan Sumber Daya Mineral (ESDM) in 2022, the utilization of oil and gas for domestic needs in 2021 reached 66%, slightly above the target of 65%, indicating a performance achievement of 101%.

With an economic growth rate increasing by 3.7% in 2021 and 5.31% in 2022, the economic conditions have gradually improved in the following years. This increase indicates that there are opportunities to enhance financial performance for all economic actors, including companies. Many energy companies in Indonesia are beginning to incorporate ESG principles into their business strategies to attract investments and meet stakeholder expectations. This is evidenced by the increase in investments in renewable energy, which reached 30.3 billion dollars in 2023 (Kementerian Energi dan Sumber Daya Mineral, 2024). Additionally, the government is striving to reduce carbon emissions and improve energy efficiency, having exceeded its CO2 emission targets.The awareness of authorities regarding business sustainability that considers governance, environmental, and social responsibilities has increased and become a pressure.

With the hope of improving overall company performance, ESG encompasses practices and policies that focus on governance, environmental, and social responsibilities. With economic development emphasizing knowledge as an intangible asset, Green Intellectual Capital can help enhance a company's capabilities and competencies by engaging with the environment. Through GIC, companies can achieve their sustainability goals through green and environmentally friendly innovations. In a highly competitive environment, companies with greater intellectual capital are usually more likely to survive. Intellectual capital, also known as knowledge-based assets, can help enhance a company's internal capacity, which will ultimately improve the company's financial performance (Pham et al., 2023).

Effectively, the application of ESG principles can enhance the efficiency of GIC management, which in turn can drive product development and sustainable innovation. A study shows that each element of ESG can improve organizational efficiency in managing intellectual capital, including GIC (Karyani & Perdiansah, 2022). Furthermore, GIC helps businesses meet stringent environmental standards and gives them an edge in a market that is increasingly concerned with sustainability issues (Kurniawati & Widiana, 2024). With the help of GIC, businesses can focus on developing sustainable products and green manufacturing practices. Thus, they can improve their business performance while maintaining environmental sustainability (Yusliza et al., 2020).The conceptual similarities and practical applications between ESG and intellectual capital are very clear. Social responsibility requires a multidimensional approach, which includes corporate governance practices, public relations, and environmental sustainability (Pham et al., 2023).

By combining ESG practices and policies that focus on environmental, social, and governance responsibilities, ESG can support the enhancement of Green Intellectual Capital, which can ultimately improve company performance, including financial performance. With GIC, companies can achieve their sustainability goals through green and environmentally friendly innovations. According to research by Alfalih (2023), ESG disclosure impacts company financial performance both directly and indirectly. Divided into three dimensions, environmental, social, and governance (ESG) initiatives affect company financial performance in both the short and long term.The social and governance dimensions of ESG impact company financial performance in both financial performance measures (ROA and Tobin's Q), while the environmental dimension is crucial for the Tobin's Q measure. Research by Liu, D. (2022), Naeem and Cankaya (2022), Giannopoulos et al. (2022), Ihsani et al. (2023), and Putri & Duspawati (2023) supports Alfalih's findings on the influence of ESG on financial performance and shows a positive correlation between the two. ESG and its sub-dimensions help accounting-based companies measure their financial performance with ROA (Ihsani et al., 2023). Additionally, Tobin's Q can influence projected financial performance (Putri & Duspawati, 2023).

There are several studies that contradict the research conducted by Alfalih (2023), namely the studies by Grisales & Caracuel (2019), Li (2024), Bahadı & Akarsu (2024), and Jovita (2023) which show that ESG does not affect financial performance. There is a significant negative correlation between ESG scores and FP, as well as a negative correlation between ESG and P/E and EPS (Li, 2024). This is because the costs associated with implementing ESG initiatives are not reflected in the company's FP, which cannot guarantee stakeholder approval (Grisales & Caracuel, 2019).The E, S, and G factors of the company do not impact financial performance because corporate funding decisions consider many factors, such as age, size, liquidity level, and profitability (Jovita, 2023).

This research adds Green Intellectual Capital as an intervening variable. An intervening variable is one that mediates the relationship between ESG disclosure and financial performance. Green Intellectual Capital, which includes Green Human Capital, Green Structural Capital, and Green Relational Capital, plays a crucial role in supporting ESG initiatives. For example, by enhancing employees' knowledge and skills (Green Human Capital) about environmentally friendly practices and building systems that support sustainability (Green Structural Capital), companies can be more effective in implementing ESG policies. Meanwhile, building strong relationships with stakeholders (Green Relational Capital) helps companies gain the necessary support in their sustainability efforts. Thus, the integration of ESG and GIC not only helps companies fulfill their social and environmental responsibilities but can also enhance long-term financial performance through better risk management and a strong reputation in the market. This research will focus on energy companies listed on the Indonesia Stock Exchange from 2020 to 2023. Therefore, the researcher reviews further studies to test the effect of ESG disclosure on financial performance with Green Intellectual Capital as an intervening variable.

2. LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

2.1 Literature Review

2.1.1 Stakeholder Theory

In 1963, the Stanford Research Institute (SRI) first used the term 'stakeholder.' This theory was later expanded by Freeman, who wrote the book 'Strategic Management: A Stakeholder Approach' in 1984. In his book, he defines stakeholders as groups or individuals who can influence the achievement of a company's objectives. Shareholders, employees, government, consumers, creditors, and the community are all part of the group known as stakeholders. According to stakeholder theory, companies must provide value to all stakeholders, including the local community, employees, consumers, and natural resources or the environment (Pham, C., V. et al., 2023).

Because the company's performance should contribute to meeting the needs of all stakeholders, environmental, social, and governance arrangements must be based on stakeholder theory. To support its business interests, the company must consider the expectations and interests of stakeholders (Delvina & Hidayah, 2023). For the decision-making process, stakeholder theory states that every shareholder has the right to know information about the company's activities and financial reports. Stakeholders can use Environmental, Social, and Governance (ESG) as an alternative in this aspect to assess the company's role in conducting its operations (Littahayu & Sulistiyoningsih, 2023).

2.1.2 Resource Based Theory

Penrose introduced Resource Based Theory in 1959. According to resource-based theory, the internal components of a company are more important than external factors (industry). The debate surrounding this theory is about how companies can gain a competitive advantage by managing their resources according to the company's capabilities (Renaldo & Augustine, 2022). To maintain a consistent competitive advantage, companies must be able to allocate and utilize resources efficiently and sustain critical, rare, and inimitable resources (Pratama et al., 2024). Additionally, these resources possess features that are difficult to imitate, transfer, and excel, and are capable of lasting long (Febrianti & Rahmayanti, 2023).

In research on Intellectual Capital (IC), resource-based theory (RBT) becomes very important because a company's intangible assets typically fall into three main sectors: human capital, relational capital, and structural capital. Although not explicitly stated, the concept forms the basis for understanding how capabilities and resources contribute to the competitiveness and growth of the company (Pratama et al., 2024). Companies that can manage GIC well will perform better and be more competitive in the market (Zalfa & Novita, 2021).

2.1.3 Financial Performance

Financial performance is one of the indicators that measures performance in a company, reflecting the success of the company in carrying out its operations. Good financial performance is a reflection of management's success in managing the company. There is a possibility that the financial performance of the business will improve, especially for businesses focused on profit (Kurniawati & Widiana, 2024). Financial performance can be analyzed using several financial ratios, one of which is profitability ratios. Companies must maintain profitability levels, as profitability ratios indicate the extent of a company's performance.

ROA indicates how effectively a business uses its assets to generate profit and is an important tool for investors and other stakeholders to evaluate the financial health of the company. Analyzing financial statements, such as the income statement and balance sheet, helps companies identify strengths and weaknesses in their financial management and plan what improvements are needed to achieve their long-term goals. Therefore, financial performance serves as an evaluation tool and a basis for strategic decisions that can affect the survival and progress of the business.

2.1.4 ESG (Environmental, Social, and Governance)

In the 'United Nations Principles of Responsible Investment', the term 'Environmental, Social, and Governance' (ESG) was first used. ESG is a collection of non-financial information that refers to how a company can address non-financial information issues. To meet the needs

of all stakeholders, businesses have adopted Environmental, Social, and Governance (ESG) strategies as policies (Febrianti & Rahmayanti, 2023). Essentially, ESG is a set of governance, environmental, and social actions undertaken by any company with the aim of ensuring business sustainability and serving all its stakeholders while maintaining and enhancing the company's financial value (Naeem & Çankaya, 2022).ESG disclosure provides an overview of the company's role in reducing negative environmental impacts, managing relationships with surrounding conditions, and implementing good governance. ESG refers to three main components that measure the impact of sustainability and ethics in investor decision-making to invest in a particular company or business; these are corporate governance, environmental, and social (Putri & Duspawati, 2023).

2.1.5 Green Intellectual Capital

Huang and Kung (2011) define intellectual capital as the intangible assets of a company that arise from understanding, specialized skills, client relationships, and technological knowledge. Green intellectual capital encompasses all reserves of intangible assets, knowledge, skills, and relationships related to green innovation and environmental protection, both at the individual and organizational levels within a company. To achieve sustainable performance, green intellectual capital is a component that can assist efforts to preserve the environment (Zalfa and Novita, 2021). Companies can effectively leverage GIC to meet environmental regulatory demands and enhance their financial performance and reputation in the market.

2.1.5.1 Green Human Capital

Green Human Capital (GHC) is the first component, which includes the knowledge, wisdom, skills, expertise, information, and experience of employees related to safety and environmental protection (Chen, 2008). Employees' environmental competencies are crucial for innovations aimed at reducing harmful environmental impacts, such as energy savings and ecosystem protection (Chen, 2008). Employees who understand environmental issues and possess skills can encourage businesses to adopt more sustainable practices (Yusliza et al., 2020).

2.1.5.2 Green Structural Capital

Green Structural Capital is the second component, which encompasses the total capabilities, commitments, knowledge management systems, reward systems, information technology systems, and others related to environmental protection or green innovation within a company. This structure helps businesses develop strategies that align with environmental principles (Chen, 2008). For example, a good environmental management system has the capability to reduce unnecessary energy and material usage. Additionally, GSC fosters product and process innovations that can provide a competitive advantage in the market.

2.1.5.3 Green Relational Capital

Green Relational Capital refers to the interactions of companies with partners, membership networks, suppliers, and customers regarding environmental management and green innovation (Sukirman & Dianawati, 2023). Good relationships with stakeholders have the potential to enhance customer loyalty and increase company value. On the other hand, collaborating with suppliers can ensure the quality of environmentally friendly raw materials. Companies can expand their networks and leverage new opportunities in the market by building a solid GRC.

2.2. Hypotheses Development

2.2.1 The Impact of ESG Disclosure on Financial Performance

Companies must provide value to all stakeholders, including local communities, employees, consumers, and natural resources or the environment (Pham, C., V. et al., 2023). To achieve long-term economic benefits, companies must consider environmental activities when making business plans. Freeman (1994, 2010) states that to be recognized as a socially responsible organization, an organization must consider the interests of all its stakeholders (consumers, employees, suppliers, investors, and the community). This is because each stakeholder impacts the company's financial outcomes and organizational goals.This aligns with the resource-based view of the firm, which suggests that companies perform better when they disclose their financial and non-financial resources (Alfalih, 2023).

According to stakeholder theory, companies must consider the interests of everyone involved in their operations, including shareholders, employees, customers, and the community. The disclosure of Environmental, Social, and Governance (ESG) becomes highly relevant in this context as it has the ability to enhance stakeholder trust and gain their support. Companies that transparently report their sustainability practices create value and meet stakeholder expectations. Companies can improve financial performance by meeting stakeholder expectations related to environmental and social issues (Mohammad and Wasiuzzaman, 2021).In such cases, ESG disclosure can help stakeholders build positive relationships, which can enhance the company's competitiveness and reduce legal and reputational risks (Freeman et al., 2020).

The higher the ESG disclosure, the lower the company's risk (Utomo, 2024). Increasing ESG disclosure is important for companies to gain investor trust that the company can endure in the long term (Triyani et al., 2021). As customers desire environmentally friendly products, greater environmental disclosure can generate more revenue. Businesses that engage in environmental responsibility tend

to have external benefits, such as gaining a good image from investors (Zahroh & Hersugondo, 2021). To ensure the success and effectiveness of a company's operations, corporate governance is one of the organs that plays a role in regulating the company's operational processes.

According to Khanchel et al. (2023), sustainability can be integrated into a company's business strategy to meet stakeholder expectations. The ESG concept, which encompasses environmental, social, and governance aspects, refers to sustainable development, making ESG decisions closely related to stakeholder needs. Additionally, companies can enhance financial performance by gaining support from stakeholders as this reduces economic risks that arise when companies seek resources, both production-related resources and financial resources such as investments and sales. Investors may consider ESG data when selecting companies.ESG disclosure aims to meet stakeholder demands for responsible business practices in governance, social, and environmental aspects (Ciptaningsih & Cahyonowati, 2024).

Companies with a strong ESG commitment will be more stable in their operations and finances. Furthermore, ESG activities can provide opportunities and innovations and create a competitive advantage for the company based on stakeholder theory and sustainable concepts (Ihsani, 2023). ESG has become one of the main principles that businesses must consider for their sustainable success; investors also use ESG disclosure to assess the management risks present in the company (Utomo, 2024). Quality ESG disclosure has the potential to enhance a company's financial performance, as each increase in ESG value is associated with improved financial performance (Kusumawardhani et al., 2023) (Sari & Widiatmoko, 2023).In the long term, companies that disclose ESG well tend to have a better reputation, higher customer loyalty, and better operational efficiency. All of this will result in better financial performance (Fadhillah & Marsono, 2023). Therefore, the hypothesis formulated by the author is:

H1: ESG disclosure has a positive impact on financial performance

2.2.2 The impact of ESG disclosure on Green Intellectual Capital

The concepts of Green Human Capital, Green Structural Capital, and Green Relational Capital are related to the disclosure of Environmental, Social, and Governance (ESG). These three concepts are essential components of Green Intellectual Capital that have the ability to enhance a company's competitiveness in the era of sustainability. The transparency and accountability created by ESG disclosure encourage the development of these three components. The first component of Green Intellectual Capital, which focuses on environmental sustainability, is the knowledge, skills, and abilities of employees, referred to as Green Human Capital. Transparent ESG disclosure enhances employee training and awareness regarding environmental and social issues.This aligns with research showing that companies that prioritize ESG disclosure tend to attract better talent and are committed to sustainability (Roestanto et al., 2022).

Green Structural Capital is the second component of Green Intellectual Capital, which encompasses the systems, procedures, and organizational culture that support sustainability. ESG disclosure encourages companies to develop more efficient and environmentally friendly internal structures. Companies with high ESG disclosure have better environmental management systems, which positively impact operational efficiency (Dhaliwal et al., 2014). Therefore, ESG disclosure can enhance productivity and innovation within organizations. The third component of Green Intellectual Capital is Green Relational Capital, which refers to the company's relationships with suppliers, customers, and the community, known as external stakeholders.ESG disclosure increases stakeholder trust, making companies that are transparent about sustainability practices more likely to gain support from the community and customers (Chen et al., 2021).

ESG disclosure, along with the three components of Green Intellectual Capital, indicates that sustainability should be an integral part of business strategy. To achieve the best outcomes, companies must align their disclosure policies with sustainability goals. ESG disclosure serves as a tool to meet legal requirements and as a strategy to build strong Green Intellectual Capital. This will provide advantages for companies in the global market, which is increasingly attentive to sustainability issues. Therefore, the hypothesis formulated by the author is:

H2.a: ESG disclosure has a positive effect on Green Human Capital.
H2.b: ESG disclosure has a positive impact on Green Structural Capital
H2.c: ESG disclosure has a positive impact on Green Relational Capital

2.2.3 The Impact of Green Intellectual Capital on Financial Performance

According to Resource-Based Theory, a company's competitive advantage comes from unique and inimitable resources. Thus, the relationship between Green Human Capital, Green Structural Capital, and Green Relational Capital is closely linked to a company's financial performance. In this regard, these three components have the ability to enhance business financial performance through the use of strategic resources, customers, and suppliers (Sukirman, A, S., & Dianawati, W., 2023). Green Human Capital encompasses the knowledge, skills, and abilities of employees related to sustainability practices. Environmentally conscious employees can reduce operational costs and improve efficiency.

Green Structural Capital encompasses the systems, procedures, and organizational culture that support sustainability. Organizations with good management of Green Structural Capital tend to have better financial performance because they have the ability to implement environmentally friendly solutions and innovate (Sihombing & Murwaningsari, 2023). Companies can create more efficient and sustainable goods and services by having an organizational structure that supports green innovation. According to Chen (2008), Green Structural Capital helps companies maintain competitiveness as an intangible asset. Companies with a strong sustainability structure can achieve higher cost efficiency, which enhances profitability.

The final component of Green Intellectual Capital is Green Relational Capital, which refers to the relationships between the company and its suppliers, communities, and customers, who are external stakeholders. Social support and a positive reputation in the market can be generated from good relationships with stakeholders. Strong interactive connections with suppliers and customers can reduce production costs and increase revenue (Chen, 2008). This indicates that good management of Green Relational Capital can yield monetary benefits through collaboration and innovation.

In the context of RBT, the components of Green Intellectual Capital indicate that companies must manage their resources wisely to create added value. Companies that actively manage GIC also tend to have better financial performance because they are able to reduce environmental risks and enhance their competitiveness in the market (Yusliza et al., 2020). Therefore, the hypothesis formulated by the author is:

H3.a: Green Human Capital has a positive effect on financial performance.
H3.b: Green Structural Capital has a positive effect on financial performance
H3.c: Green Relational Capital has a positive effect on financial performance

2.2.4 The Effect of ESG Disclosure on Financial Performance with Green Intellectual Capital as an Intervening Variable

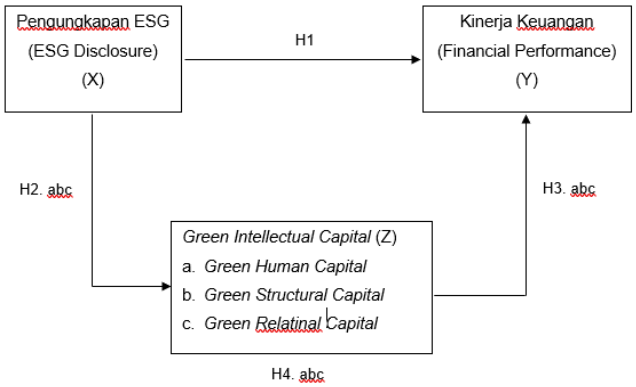
Financial performance is one of the indicators that measures performance in a company, reflecting the company's success in carrying out its operations. Good financial performance is a reflection of management's success in managing the company, including intangible assets reflected in Green Intellectual Capital. With technological advancements, businesses must realize that their financial performance depends on their intellectual capital. By leveraging internal management, human resource management, and effective information, businesses can outperform their competitors (Putri & Mayangsari, 2024).

In terms of business sustainability and innovation, the relationship between Environmental, Social, and Governance (ESG) and Green Intellectual Capital (GIC) is gaining increasing attention. ESG encompasses practices and policies focused on environmental, social, and governance responsibility, which are expected to enhance overall company performance. GIC also includes intellectual assets related to environmentally friendly initiatives and innovations that can support corporate sustainability. By effectively applying ESG principles, companies are likely to achieve higher efficiency in managing their GIC; this will encourage environmentally friendly innovation and enhance company value.

Green Intellectual Capital within Resource-Based Theory provides support in business strategy formulation, particularly concerning internal environmental resources and how much a company can be responsible for tracking, creating, and delivering knowledge across its resources. Additionally, based on Stakeholder Theory, companies must make decisions considering the interests of all stakeholders, including customers, employees, society, and the environment. ESG is seen as a tool to create value for all these stakeholders.Companies that successfully meet stakeholder expectations by implementing good ESG practices tend to receive positive responses, which can enhance the company's reputation and financial performance.

Green Human Capital encompasses the knowledge, skills, and commitment of employees towards environmentally friendly practices. In line with ESG principles that emphasize social and environmental responsibility, trained and committed employees to sustainability can enhance innovation and operational efficiency within the company. Green Structural Capital refers to the systems and processes that support sustainability practices within organizations, such as environmental management and eco-friendly technologies. These structures help companies meet ESG standards and increase stakeholder trust. On the other hand, Green Relational Capital includes the company's relationships with external stakeholders, such as suppliers and customers, who are committed to sustainability.Overall, the integration of ESG into GIC helps companies achieve sustainability goals and improve financial performance through enhanced efficiency, innovation, and market trust. This is reflected in the growing interest of global investors in sustainable investments. Therefore, the hypothesis formulated by the author is:

H4.a: Green Human Capital can mediate the relationship between ESG Disclosure and Financial Performance
H4.b: Green Structural Capital can mediate the relationship between ESG Disclosure and Financial Performance
H4.c: Green Relational Capital can mediate the relationship between ESG Disclosure and Financial Performance



3. METHODS

3.1 Data and Collection

This type of research uses quantitative methods. This technique requires the use of many numbers during the data collection process, data interpretation, and presentation of results. In addition, this study employs two analysis methods, including descriptive and inferential analysis. Descriptive analysis shows what each variable being studied is, while inferential analysis shows the relationships between each variable identified through data processing.

The data sources for this study include financial reports, annual reports, and sustainability reports of companies in the energy sector for the period ending December 31, 2020–2023. Data was accessed through the official website of the Indonesia Stock Exchange (IDX) at www.idx.co.id and the official company websites. Additionally, data sources for this research were accessed through the official Thomson Reuters Eikon site to obtain the ESG scores of the companies being studied.www.idx.co.id

3.2 Operational Definition and Measurement of Variables

3.2.1 Dependent Variable (Financial Performance)

Financial performance is the dependent variable in this study. In other words, it is the variable that is influenced or affected by the independent variable (Sugiyono, 2018). Financial performance is a depiction of how well programs, policies, or organizational objectives are implemented to achieve goals, targets, missions, and visions. According to Renaldo and Augustine (2022), financial performance is an analysis used to evaluate the extent to which a company has complied with financial implementation regulations. In this study, financial performance is measured using return on assets (ROA). ROA is one of the profitability ratios that describes the success of management in generating profits. Return on assets (ROA) can be calculated using the following formula:

3.2.2 Independent Variable (ESG Disclosure)

In this study, ESG disclosure is the independent variable, meaning it is the variable that influences the dependent variable (Sugiyono, 2018). Essentially, ESG is a collection of governance, environmental, and social actions undertaken by any company with the aim of ensuring business sustainability and serving all its stakeholders while maintaining and enhancing the company's financial value (Naeem & Çankaya, 2022). ESG disclosure provides an overview of the company's role in reducing negative impacts on the environment, managing relationships with surrounding conditions, and implementing good governance.

The measurement of ESG disclosure refers to the research by Giannopoulos et al. (2022) using the ESG score from Thomson Reuters Eikon™. This ESG disclosure measurement tool developed by Thomson has more than 150 research analysts who collect data from over 6,000 companies. The score values range from 0 (D-) for the worst rating to 100 (A+) for the best rating.

3.2.3 Intervening Variable (Green Intellectual Capital)

The green intellectual capital variable serves as a mediating variable in this research. If the independent variable significantly affects the mediating variable, the independent variable significantly affects the dependent variable, and the mediating variable can influence the relationship between the independent and dependent variables, the intervening variable is considered a mediating variable (Sugiyono, 2018). Huang and Kung (2011) define intellectual capital as the intangible assets of a company that arise from understanding, specialized skills, client relationships, and technological knowledge. To achieve sustainable performance, green intellectual capital is a component that can assist efforts to maintain the environment (Zalfa and Novita, 2021).Companies can effectively leverage green intellectual capital to meet environmental regulatory demands and enhance their financial performance and reputation in the market.

In this study, the measurement of green intellectual capital is based on the research of Huang, C.-L., & Kung, F.-H. (2011), by examining several metrics disclosed by companies. Companies must disclose eighteen indicators consisting of three elements: green human capital, green structural capital, and green relational capital. The disclosed indicators will be assigned a value of one, and if not disclosed, a value of zero. After reviewing and assessing the disclosed indicators, the index can be calculated using the following formula:

$$GIC = \frac{\text{Number of Indicators Disclosed by the Company}}{\text{Number of Indicators Listed in Green Intellectual Capital}}$$

$$\textbf{ROA} = \frac{\textbf{Net Income After Tax}}{\textbf{Total Assets}}$$

3.3 Data Analysis Technique

To see how independent variables impact dependent variables, this research uses panel data regression, which is a combination of time series data and cross-sectional data. The researcher uses Stata 14, a statistics and data software created by StataCorp in 1985, for statistical analysis.

To analyze the collected data, a descriptive statistical analysis will first be conducted. Next, panel data regression estimation will be performed using the Common Effect Model (CEM), Fixed Effect Model (FEM), and Random Effect Model (REM). Subsequently, the panel data regression model will be selected through the Chow Test, Hausman Test, and Lagrange Multiplier (LM) Test. Finally, classical assumption tests will be conducted through multicollinearity tests. To avoid unstable data distribution, the data in this study uses the natural logarithm (ln), which is the logarithm to the base e of a number.

4. RESULTS

4.1 Sample Selection Results

The population in this study consists of energy sector companies listed on the Indonesia Stock Exchange (IDX) from 2020 to 2023. The energy sector was chosen because it is part of the new industrial sector classification system, namely the IDX Industrial Classification (IDX-IC), which was officially launched by the Indonesia Stock Exchange (IDX) on January 25, 2020, as the initial year of observation for the researcher is 2020.

The data sources for this study include financial statements, annual reports, and sustainability reports of energy sector companies for the period ending December 31 from 2020 to 2023. Data was accessed through the official website of the Indonesia Stock Exchange (IDX) at www.idx.co.id and the official websites of the companies. Additionally, data sources in this research were accessed through the official Thomson Reuters Eikon site to obtain the ESG scores of the companies studied. A total of 46 companies out of 87 energy sector companies listed on the Indonesia Stock Exchange (IDX) from 2020 to 2023 met the sample criteria. The years 2020 to 2023 are the observation years in this study. Therefore, the final research sample consists of 184 samples.www.idx.co.id

4.2 Descriptive Statistical Analysis

According to Ghozali (2018), descriptive statistical analysis is used to understand the characteristics of a dataset as seen from the mean, standard deviation, variance, maximum, minimum, sum, range, kurtosis, and skewness. In this study, the variables used are ESG Disclosure, financial performance (ROA), and Green Intellectual Capital (GHC, GSC, GRC). The following are the results of the descriptive statistical analysis in this study:

Table 4.1
Descriptive Statistical Analysis

Variable		Mean	Std. Dev.	Min	Max	Observations
roa	overall	1.158397	1.80651	-5.807	4.214	N = 184
	between		1.247086	-2.083	3.71075	n = 46
	within		1.31672	-3.945603	4.509897	T = 4
esgdis~e	overall	7.309799	8.773484	0	28.333	N = 184
	between		6.153566	.83325	23.25	n = 46
	within		6.303047	-7.023451	24.31005	T = 4
ghc	overall	-.3242989	.2971181	-1.52	.112	N = 184
	between		.1875123	-.935	-.009	n = 46
	within		.2317212	-1.209299	.3367011	T = 4
gsc	overall	-.4206902	.4189276	-2.052	.112	N = 184
	between		.2599178	-1.12275	-.0815	n = 46
	within		.3302281	-1.72994	.1903098	T = 4
grc	overall	-.2616793	.3782992	-1.687	.112	N = 184
	between		.1936053	-.7175	.05525	n = 46
	within		.3259475	-1.416679	.2968206	T = 4

The table above illustrates the descriptive statistical analysis of the variables used in this study. The dependent variable in this study, which is financial performance measured using ROA, has a mean value of 1.158397 and a standard deviation of 1.80651. The standard deviation of 1.80651 in this study is greater than the mean value of 1.158397, indicating that the data distribution of ROA is quite large and heterogeneous.

The independent variable in this study is ESG Disclosure, which has a mean value of 7.309799 and a standard deviation of 8.773484. The standard deviation being greater than the mean value indicates that the data distribution of ESG Disclosure is also quite large and heterogeneous.

The mediating variable in this study is the Green Intellectual Capital variable, which is measured using three indicators: GHC, GSC, and GRC. The GHC indicator has a mean value of -0.3242989 and a standard deviation of 0.2971181. The GSC indicator has a mean value of -0.4206902 and a standard deviation of 0.4189276. Meanwhile, the GRC indicator has a mean value of -0.2616793 and a standard deviation of 0.3782992. The standard deviation is greater than the mean value, indicating that the data distribution is quite large and heterogeneous.

4.3 Selection of the Panel Data Regression Model

In selecting the appropriate panel data regression model, several tests are conducted, namely the Chow Test, Hausman Test, and Lagrange Multiplier (LM) Test (Gujarati & Porter, 2012). These three tests are performed to choose the appropriate panel data regression model among the Common Effect Model (CEM), Fixed Effect Model (FEM), or Random Effect Model (REM).

Based on the results of the tests in selecting the panel data regression model, which include the Chow Test, Hausman Test, and Lagrange Multiplier (LM) Test, it can be concluded that the selected panel data regression model is the Random Effect Model (REM).

Table 4.2. Chow Test Results

```
Fixed-effects (within) regression               Number of obs      =       184
Group variable: NP                              Number of groups   =        46

R-sq:                                           Obs per group:
     within  = 0.1400                                         min =         4
     between = 0.0086                                         avg =       4.0
     overall = 0.0593                                         max =         4

                                                F(4,134)           =      5.45
corr(u_i, Xb)  = -0.1807                        Prob > F           =    0.0004
```

lnroa	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
esgdisclosure	.0370364	.0179755	2.06	0.041	.0014841	.0725887
lnghc	.1895891	.5685623	0.33	0.739	-.934928	1.314106
lngsc	1.335705	.4446008	3.00	0.003	.456362	2.215048
lngrc	-.4650894	.4435148	-1.05	0.296	-1.342284	.4121057
_cons	1.389365	.2483245	5.59	0.000	.8982228	1.880508
sigma_u	1.2882119					
sigma_e	1.4269513					
rho	.44903506	(fraction of variance due to u_i)				

```
F test that all u_i=0: F(45, 134) = 3.07                     Prob > F = 0.0000
```

Table 4.3. Hausman Test Results

	Coefficients (b) fem	(B) rem	(b-B) Difference	sqrt(diag(V_b-V_B)) S.E.
esgdisclos~e	.0370364	.0228452	.0141912	.0087597
lnghc	.1895891	-.1320983	.3216874	.2466331
lngsc	1.335705	1.348775	-.0130704	.1850927
lngrc	-.4650894	-.3849951	-.0800943	.1499614

```
                b = consistent under Ho and Ha; obtained from xtreg
     B = inconsistent under Ha, efficient under Ho; obtained from xtreg

  Test:  Ho:  difference in coefficients not systematic

              chi2(4) = (b-B)'[(V_b-V_B)^(-1)](b-B)
                      =        3.88
            Prob>chi2 =      0.4223
```

Table 4.4. Results of the Lagrange Multiplier (LM) Test

```
Breusch and Pagan Lagrangian multiplier test for random effects

      lnroa[NP,t] = Xb + u[NP] + e[NP,t]

      Estimated results:
                          Var     sd = sqrt(Var)
                 ---------------------------------
                    lnroa |  3.26348      1.80651
                        e |  2.03619     1.426951
                        u |  1.106704        1.052

      Test:   Var(u) = 0
                              chibar2(01) =    28.93
                            Prob > chibar2 =   0.0000
```

4.4 Classical Assumption Test

To ensure that the regression model used meets the basic assumptions, a classical assumption test is conducted. It is important to meet these assumptions so that the regression model estimation results are reliable and unbiased. In estimation techniques, the classical assumption test is a statistical requirement that must be met for regression analysis using the Ordinary Least Squares (OLS) approach. In panel data regression, the Common Effect Model (CEM) and Fixed Effect Model (FEM) use the OLS approach, so the classical assumption test is necessary if the regression model used is CEM or FEM. The Random Effect Model (REM) uses the General Least Squares (GLS) approach, so the classical assumption test is not required if the regression model used is REM (Erdawati et al., 2023).

After conducting the panel data regression selection test, it can be concluded that the selected panel data regression model is the Random Effect Model (REM). Therefore, this study does not conduct classical assumption tests.

4.5 Hypothesis Testing

Hypothesis testing is conducted to determine the effect of the dependent variable on the independent variable. In this study, to test the hypothesis, panel data regression is used. After selecting the panel data regression model, the chosen model is the Random Effect Model (REM). The following are the results of the Random Effect Model (REM) in this study:

Table 4.5. Hypothesis Test Results

roa	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
esgdisclosure	.0228452	.0156966	1.46	0.146	-.0079197	.0536101
ghc	-.1320983	.5122843	-0.26	0.797	-1.136157	.8719605
gsc	1.348775	.4042407	3.34	0.001	.556478	2.141072
grc	-.3849951	.4173931	-0.92	0.356	-1.20307	.4330803
_cons	1.415235	.2798498	5.06	0.000	.8667394	1.96373

The decision-making criteria for hypotheses in this research are based on the t-table value and the significance value. In this study, the obtained t-table value is 1.97294 and the significance value is 0.05. If the z value > t-table, then hypothesis H1 is accepted; conversely, if the z value < t-table, then hypothesis H1 is rejected. Furthermore, if the value (P>|z|) < Alpha 0.05, then the hypothesis result is significant; conversely, if the value (P>|z|) > Alpha 0.05, then the hypothesis result is not significant.

4.6 Sobel Test

The Sobel test is conducted to examine the effect of the intervening variable in mediating the dependent variable against the independent variable. Before performing the Sobel test, regression analysis is first conducted to test the effect of ESG disclosure on Green Intellectual Capital, which is measured using the indicators Green Human Capital, Green Structural Capital, and Green Relational Capital. Additionally, regression analysis is performed to test the effect of Green Intellectual Capital, measured using the indicators Green Human Capital, Green Structural Capital, and Green Relational Capital, on financial performance. The following are the results of the Sobel test in this study:

Table 4.6. Sobel Test Results Green Human Capital

Input:			Test statistic:	Std. Error:	*p*-value:
a	0.003	Sobel test:	-0.25408682	0.00155852	0.79942849
b	-0.132	Aroian test:	-0.2123525	0.00186482	0.83183204
s_a	0.002	Goodman test:	-0.33704679	0.00117491	0.73608163
s_b	0.512	Reset all	Calculate		

Table 4.7. Sobel Test Results Green Structural Capital

Input:			Test statistic:	Std. Error:	*p*-value:
a	0.015	Sobel test:	2.77540122	0.00728543	0.00551336
b	1.348	Aroian test:	2.73777521	0.00738556	0.00618563
s_a	0.003	Goodman test:	2.81462244	0.00718391	0.00488346
s_b	0.404	Reset all	Calculate		

Table 4.8. Sobel Test Results Green Relational Capital

Input:			Test statistic:	Std. Error:	*p*-value:
a	0.011	Sobel test:	-0.89312759	0.00472945	0.37178885
b	-0.384	Aroian test:	-0.86343231	0.0048921	0.38789982
s_a	0.003	Goodman test:	-0.92611379	0.00456099	0.35438685
s_b	0.417	Reset all	Calculate		

5. DISCUSSION

5.1 The Impact of ESG Disclosure on Financial Performance

This test was conducted to determine the effect of ESG disclosure on financial performance measured using ROA. The formulated hypothesis (H1) suggests that ESG disclosure has an impact on financial performance. Based on the results of the regression test conducted, a t-value of 1.46 and a P>|z| value of 0.146 were obtained. This proves that ESG disclosure...

The impact of financial performance is not significant, thus:

Hypothesis (H1) is rejected

The results of this study prove that ESG disclosure cannot enhance financial performance as measured by ROA. This research aligns with studies conducted by Grisales & Caracuel (2019), Bahadır & Akarsu (2024), and Giannopoulos et al. (2022). ESG disclosure can serve as a tool to enhance trust and legitimacy in the eyes of stakeholders, but it does not always lead to innovation, operational efficiency, or market access that can significantly improve ROE. There are significant costs associated with sustainable operations that can affect financial performance, as the demand for ESG practices by companies increases (Bahadır & Akarsu, 2024).

Within the framework of Stakeholder Theory, companies do not only focus on maximizing shareholder profits but are also accountable to various stakeholders, including employees, customers, communities, and the environment. ESG disclosure can be seen as a company's response to the demands and desires of stakeholders. However, the disclosure of ESG information does not automatically guarantee an improvement in financial performance (ROA). This is because ESG disclosure may only serve as a means to enhance the company's image in the public eye, without making substantial changes in the company's operations that directly improve profitability.

5.2 The impact of ESG disclosure on Green Intellectual Capital

This test was conducted to determine the effect of ESG disclosure on Green Intellectual Capital, measured using the indicators of Green Human Capital, Green Structural Capital, and Green Relational Capital. The formulated hypothesis (H1) suggests that ESG disclosure affects Green Human Capital, Green Structural Capital, and Green Relational Capital. Based on the results of the regression test conducted, for the Green Human Capital indicator, a t-value of 1.49 and a P>|z| value of 0.137 were obtained. The results of the regression test conducted for the Green Structural Capital indicator yielded a t-value of 4.63 and a P>|z| value of 0.000.Furthermore, the results of the regression test conducted for the Green Relational Capital indicator yielded a t-value of 3.78 and a P>|z| value of 0.000. This proves that not all indicators of Green Intellectual Capital are influenced by ESG disclosure, thus:

Hypothesis (H2a) is rejected
Hypothesis (H2b) is accepted
Hypothesis (H2c) is accepted

The results of this study prove that not all indicators of Green Intellectual Capital are influenced by ESG disclosure. Reboredo & Sowaity (2021) in their research demonstrate that ESG disclosure can enhance a company's Relational Capital. ESG disclosure regarding sustainability is very important for stakeholders to assess how far the company builds mutually beneficial relationships with stakeholders in sustainability efforts.

ESG disclosure affects Green Structural Capital because the information available in ESG about environmental management systems (such as ISO 14001) and internal policies that support environmentally friendly practices can show stakeholders that the company has a strong and systematic commitment to sustainability. ESG disclosure is an important tool for communicating sustainability performance, but its effectiveness in influencing stakeholder perceptions of Green Human Capital (GHC) is limited if the information is less specific and measurable.Companies are more likely to use ESG disclosure to communicate the value of Green Structural Capital (GSC) and Green Relational Capital (GRC) because information about organizational structure and stakeholder relationships is easier to measure and quantify.

5.3 The Impact of Green Intellectual Capital on Financial Performance

This study was conducted to determine the effect of Green Intellectual Capital measured using the indicators of Green Human Capital, Green Structural Capital, and Green Relational Capital on financial performance measured using ROA. The hypothesis (H1) formulated suggests that Green Human Capital, Green Structural Capital, and Green Relational Capital have an effect on financial performance. Based on the results of the regression test conducted, for the indicator of Green Human Capital against financial performance, a t-value of 0.26 and a P>|z| value of 0.797

were obtained. The results of the regression test conducted, for the indicator of Green Structural Capital against financial performance, yielded a t-value of 3.34 and a P>|z| value of 0.001.Furthermore, the results of the regression test conducted, for the indicator of Green Relational Capital against financial performance, yielded a t-value of 0.92 and a P>|z| value of 0.356. This proves that not all indicators of Green Intellectual Capital can influence financial performance, thus:

Hypothesis (H3a) is rejected
Hypothesis (H3b) is accepted
Hypothesis (H3c) is rejected

The results of this study prove that not all indicators of Green Intellectual Capital can influence financial performance measured using ROA. This research demonstrates that Green Structural Capital has an impact on financial performance, in line with the study conducted by Febrianti & Rahmayanti (2023). According to Febrianti and Rahmayanti (2023), businesses have effective strategies to leverage internal resources, processes, and organizational structures to create significant and sustainable added value in relation to financial performance.

According to Resource-Based View (RBV) theory, a company's competitive advantage and superior performance stem from valuable, rare, inimitable, and non-substitutable internal resources. Green Intellectual Capital (GIC), which consists of Green Human Capital, Green Structural Capital, and Green Relational Capital, can be considered a strategic resource that has the potential to meet RBV criteria. However, not all components of GIC automatically lead to improved financial performance.

Since the enhancement of employee skills and environmental awareness programs takes time to yield measurable financial results, Green Human Capital does not impact financial performance. Additionally, a good reputation due to strong relationships with stakeholders can attract new customers and increase customer loyalty, but this is not immediately reflected in ROA. Therefore, Green Relational Capital does not influence financial performance.

5.4 The Effect of ESG Disclosure on Financial Performance with Green Intellectual Capital as an Intervening Variable

To determine the results of this hypothesis test, a Sobel test was first conducted. After performing the Sobel test, it can be concluded that for Green Human Capital, the Sobel test statistics is -0.25408682 < t-table (1.97294), which means that Green Human Capital cannot mediate the relationship between ESG disclosure and financial performance. Furthermore, the results of the Sobel test for Green Structural Capital show a Sobel test statistics of 2.77540122 > t-table (1.97294), indicating that Green Structural Capital can mediate the relationship between ESG disclosure and financial performance.Then, the results of the Sobel test for Green Relational Capital show a Sobel test statistics of -0.89312759 < t-table (1.97294), which means that Green Relational Capital cannot mediate the relationship between ESG disclosure and financial performance, thus:

Hypothesis (H3a) is rejected
Hypothesis (H3b) is accepted
Hypothesis (H3c) is rejected

Based on Stakeholder Theory and Resource-Based View (RBV), ESG disclosure is a response to stakeholder demands for more sustainable business practices through company resources. The indirect and unidirectional relationship between ESG disclosure and GHC indicates that ESG disclosure alone is not sufficient to transform GHC into a strategic resource that can enhance financial performance. Additionally, ESG disclosure may demonstrate that the company is committed to collaborating with external stakeholders on sustainability initiatives. However, the relationships expressed in ESG reports may not automatically translate into substantive and beneficial collaborations that directly enhance financial performance.Therefore, Green Human Capital and Green Relational Capital cannot mediate the relationship between ESG disclosure and financial performance.

ESG disclosure affects financial performance and Green Structural Capital (GSC). ESG disclosure encourages companies to build strong GSC, which results in increased operational efficiency, reduced costs, and competitive advantage. GSC is a strategic resource that contributes to better financial performance from a Resource-Based View (RBV) perspective. From the perspective of stakeholder theory, GSC is how companies transform external pressures into internal economic value.

6. CONCLUSION AND RECOMMENDATIONS

6.1 Conclusion

The purpose of this research is to identify the relationship between Environmental, Social, and Governance (ESG) disclosure and financial performance with Green Intellectual Capital as an intervening variable. Financial performance is one of the important factors in a company that can serve as a measure of the success of a company over a certain period. Companies should not only focus on maximizing shareholder profits but also be accountable to various stakeholders, including employees, customers, communities, and the environment. ESG disclosure can be seen as the company's response to the demands and desires of stakeholders.With the economic development emphasizing knowledge as an intangible asset, Green Intellectual Capital can help enhance the capabilities and competencies of companies by engaging with the environment. Green Intellectual Capital is an intangible asset of the company that arises from understanding, specialized

skills, client relationships, and technological knowledge (Huang and Kung, 2011).

Based on the discussion and results of this research, the following conclusions are drawn:

1. ESG disclosure does not have a significant impact on financial performance as measured by ROA. ESG disclosure can serve as a tool to enhance trust and legitimacy in the eyes of stakeholders, but it does not always lead to innovation, operational efficiency, or access to markets that can significantly improve ROE. There are significant costs associated with sustainable operations that can affect financial performance, as the demand for ESG practices by companies increases (Bahadır & Akarsu, 2024).
2. ESG disclosure does not have a significant impact on Green Intellectual Capital as measured by Green Human Capital. ESG disclosure is an important tool for communicating sustainability performance, but its effectiveness in influencing stakeholder perceptions of Green Human Capital (GHC) is limited if the information is not specific and measurable.
3. ESG disclosure has a significant impact on Green Intellectual Capital as measured by Green Structural Capital. The information available in ESG regarding environmental management systems (such as ISO 14001) and internal policies that support environmentally friendly practices can demonstrate to stakeholders that the company has a strong and systematic commitment to sustainability.
4. ESG disclosure has a significant impact on Green Intellectual Capital, which is measured by Green Relational Capital. ESG disclosure regarding sustainability is very important for stakeholders to assess how far the company has built mutually beneficial relationships with stakeholders in sustainability efforts.
5. Green Intellectual Capital measured by Green Human Capital does not have a significant impact on financial performance measured by ROA. Since the enhancement of employee skills and environmental awareness programs takes time to yield measurable financial results, Green Human Capital does not affect financial performance.
6. Green Intellectual Capital measured by Green Structural Capital has a significant impact on financial performance measured by ROA. Businesses have good strategies to leverage internal resources, processes, and organizational structures to create substantial and sustainable added value in relation to financial performance (Febrianti and Rahmayanti, 2023).
7. Green Intellectual Capital measured by Green Relational Capital does not have a significant impact on financial performance measured by ROA. A good reputation due to strong relationships with stakeholders can attract new customers and enhance customer loyalty, but this is not immediately reflected in ROA.
8. Green Intellectual Capital measured by Green Human Capital cannot mediate the relationship between ESG disclosure and financial performance measured by ROA. The indirect and unidirectional relationship between ESG disclosure and GHC indicates that ESG disclosure alone is not sufficient to transform GHC into a strategic resource that can enhance financial performance.
9. Green Intellectual Capital measured by Green Structural Capital can mediate the relationship between ESG disclosure and financial performance measured by ROA. ESG disclosure encourages companies to build strong GSC, resulting in increased operational efficiency, reduced costs, and competitive advantage.
10. Green Intellectual Capital measured by Green Relational Capital cannot mediate the relationship between ESG disclosure and financial performance measured by ROA. The relationships disclosed in ESG reports do not automatically translate into substantive and beneficial collaborations that directly enhance financial performance.

Based on the discussion and results in this study, there are several limitations, including the following:

1. The sample in this study consists of 184 companies from a population of 348 companies. This is due to the fact that many energy sector companies from 2020 to 2023 have not yet published sustainability reports, resulting in a limitation of ESG disclosure data obtained by the researcher.
2. This study has a coefficient of determination (R^2) value of 6.75%, which means that there are still other factors influencing financial performance.
3. Green Intellectual Capital is not explicitly mentioned in the sustainability reports, so the assessment of the indicators conducted by the researcher tends to be relatively subjective.
4. The fact that many companies have not published sustainability reports raises concerns that it may lead to outlier data, causing data processing to be less optimal.

6.2 Recommendations

Based on the limitations of this research, there are several suggestions that can be made for future researchers. The suggestions include the following:

1. Future research should develop its study by adding or changing the research sector, thereby expanding the sample size.

2. It is recommended that future research use other variables that may affect financial performance, in order to obtain a sufficiently high coefficient of determination (R^2).
3. For companies, it is advisable to explicitly reportGreen Intellectual Capital to facilitate investors and creditors in assessing the resources owned by the company.
4. It is expected that companies will publish sustainability reports in accordance with government directives in OJK Regulation Number 51 of 2017 concerning the Implementation of Sustainable Finance for Financial Services Institutions, Issuers, and Public Companies.

REFERENCES

1. Alfalih, A, A., (2023). ESG disclosure practices and financial performance: a general and sector analysis of SP-500 non-financial companies and the moderating effect of economic conditions. Journal of Sustainable Finance & Investment. 13:4. 1506-1533, https://doi.org/10.1080/20430795.2022.2150511
2. Bahadır, O., & Akarsu, S. (2024). Does Company Information Environment Affect ESG–Financial Performance Relationship? Evidence from European Markets. Sustainabilit, 16, 2701. https://doi.org/10.3390/su16072701
3. Chen, Y, S., (2008). The Positive Effect of Green Intellectual Capital on Competitive Advantages of Firms. Journal of Business Ethics. 77: 271-286. https://doi.org/10.1007/s10551-006-9349-1
4. Febrianti, R, A., & Rahmayanti, D., (2023). The Influence of Intellectual Capital on Financial Performance: Environmental, Social, Governance (ESG) Moderation (Study of Companies Listed on the Indonesian Stock Exchange). Formosa Journal of Applied Sciences (FJAS). 2:12. 3341-3360. 2962-6447 https://journal.formosapublisher.org/index.php/fjas
5. Giannopoulos, G., Fagernes, R, V, K., Elmarzouky, M., & Hossain, K, A, B, M, A. (2022). The ESG Disclosure and the Financial Performance of Norwegian Listed Firms. Journal of Risk and Financial Management. 15: 237. https://doi.org/10.3390/jrfm15060237
6. Grisales, E, D., & Caracuel, J, A., (2019). Environmental, Social and Governance (ESG) Scores and Financial Performance of Multilatinas: Moderating Efects of Geographic International Diversiication and Financial Slack. Journal of Business Ethics. 20: 4177. https://doi.org/10.1007/s10551-019-04177-w
7. Huang, C. L., & Kung, F. H. (2011). Environmental consciousness and intellectual capital management. Management Decision, 49(9), 1405-1425 http://dx.doi.org/10.1108/00251741111173916
8. Ihsani, A. N., Nidar, S. R., & Kurniawan, M. (2023). Does ESG Performance Affect Financial Performance? Evidence from Indonesia. Wiga: Jurnal Penelitian Ilmu Ekonomi, 13(1), 46–61. https://doi.org/10.30741/wiga.v13i1.968
9. Jovita, G, A., (2023). Impact of ESG Implementation on Financial Performance and Capital Structure. Jurnal Informatika Ekonomi Bisnis. 5:4. 1480-1486. https://doi.org/0.37034/infeb.v5i4.778
10. Karyani, E., & Perdiansyah, M, R. (2022). ESG and Intellectual Capital Efficiency: Evidence From Asean Emerging Markets. Jurnal Akuntansi dan Keuangan Indonesia. 19:2. 166-187
11. Kementerian Energi dan Sumber Daya Mineral. (2024). "Kinerja Sektor ESDM 2023: Perluas Akses Energi, Prioritaskan Kebutuhan Domestik, dan Jaga Daya Saing Lewat Transisi Energi". https://www.esdm.go.id/id. Diakses pada Selasa 7 Januari, 2025. https://www.esdm.go.id/id/media-center/arsip-berita/kinerja-sektor-esdm-2023-perluas-akses-energi-prioritaskan-kebutuhan-domestik-dan-jaga-daya-saing-lewat-transisi-energi
12. Khanchel, I., Lassoued, N., & Baccar, I. (2023). Sustainability and firm performance: the role of environmental, social and governance disclosure and green innovation. Management Decision, 61(9), 2720–2739. https://doi.org/10.1108/MD-09-2021-1252
13. Kusumawardhani, A., Thenardi, C, M., & Lutwal, A., (2023). ESG (Environmental, Social And Governance) Memoderasi Kinerja Keuangan Terhadap Nilai Perusahaan. JURNAL RISET AKUNTANSI DAN AUDITING. 10:3. 15-26. https://doi.org/10.55963/jraa.v10i3.589
14. Li, Y., (2024). Analysis of the Impact of ESG on Financial Performance. Highlights in Science, Engineering and Technology. 94
15. Liu, H., Wu, K., & Zhou, Q. (2022). Whether and How ESG Impacts on Corporate Financial Performance in the Yangtze River Delta of China. Sustainability. 14, 16584. https://doi.org/10.3390/su142416584
16. Malikah, A., Chandrarin, G., & Zuhroh, D. (2024). Improving Financial Performance through Financial Risk and Intellectual Capital. International Journal of Management and Economics Invention. 10(07). 3388-3396. https://doi.org/10.47191/ijmei/v10i7.09
17. Mohammad, W, M, W., & Wasiuzzaman, S., (2021). Environmental, Social and Governance (ESG) disclosure, competitive advantage and performance of firms in Malaysia. Cleaner Environmental Systems. https://doi.org/10.1016/j.cesys.2021.100015
18. Naeem, N & Cankaya, S. (2022). The Impact of ESG Performance over Financial Performance: A Study

on Global Energy and Power Generation Companies. International Journal of Commerce and Finance. 8: 1. https://doi.org/10.1016/j.cesys.2021.100015

19. Pham, C.-V., Liu S.-F. and S.-H. Chen. (2023). Corporate ESG performance and intellectual capital: International evidence. Asia Pacific Management Review. https://doi.org/10.1016/j.apmrv.2023.12.003
20. Pratama, A., Pratama, B, C., Wahyuni, S., & Hapsari, I. (2024). Moderating Effect of Intellectual Capital Components on the Relationship between ESG Scores and Firm Financial Performance. Asian Journal of Economics, Business and Accounting. 24: 6. 477-495. https://doi.org/10.9734/ajeba/2024/v24i61375
21. Putri, C, M., & Puspawita, D., (2023). The Effect of Esg Disclosure, Company Size, and Leverage On Company's Financial Performance in Indonesia. The International Journal of Business Management and Technology. 7:2. 252-262
22. Putri, T, M., & Mayangsari, S., (2024). Keterkaitan Green Accounting dan Green Intellectual Capital Terhadap Kinerja Keuangan Dengan Kinerja Lingkungan Sebagai Variabel Intervening. Jurnal Ekonomi Trisakti. 4:2. 587-598. http://dx.doi.org/10.25105/jet.v4i2.20825
23. Reboredo, J.C., & Sowaity, S.M.A. Environmental, Social, and Governance Information Disclosure and Intellectual Capital Efficiency in Jordanian Listed Firms. Sustainability, 14, 115. https://doi.org/10.3390/su14010115
24. Renaldo, N., & Augustine, Y., (2022). The Effect of Green Supply Chain Management, Green Intellectual Capital, and Green Information System on Environmental Performance and Financial Performance. Archives of Business Resea. 10:19. DOI:10.14738/abr.1010.13254
25. Sari, P, S., & Widiatmoko, J., (2023). Pengaruh Environmental, Social, and Governance (ESG) Disclosure terhadap Kinerja Keuangan dengan Gender Diversity sebagai Variabel Moderasi. Jurnal Ilmiah Akuntansi Dan Keuangan. 5:9. https://journal.ikopin.ac.id/index.php/fairvalue
26. Sukirman, A, S., & Dianawati, W., (2023). Green intellectual capital and financial performance: The moderate of family ownership. Cogent Business & Management. 10:1, 2200498, DOI: 10.1080/23311975.2023.2200498. https://doi.org/10.1080/23311975.2023.2200498
27. Yusliza, M. Y., Yong, J. Y., Tanveer, M. I., Ramayah, T., Noor Faezah, J., & Muhammad, Z. (2020). A structural model of the impact of green intellectual capital on sustainable performance. Journal of Cleaner Production, 249, 119334. https://doi.org/10.1016/j.jclepro.2019.119334
28. Zahroh, B. M., & Hersugondo, H. (2021). The Effect of ESG Performance on The Financial Performance of Manufacturing Companies Listed in The Indonesian. AFEBI Management and Business Review, 6(2), 129. https://doi.org/10.47312/ambr.v6i2.475
29. Zalfa, N.A. & Novita, N (2021). Green Intellectual Capital Terhadap Sustainable Performance. Jurnal Keuangan dan Perbankan. 18(01). 25-34. https://ojs3.unmer.ac.id/index.php/jkdp/index
30. Zhou, X. Y., Wu, Y. X., & Huang, J. Y. (2024). ESG Performance, R&D Investment and Financial Performance: A Case Study of Special Equipment Manufacturing Enterprises. Asian Journal of Economics, Business and Accounting. 24 (1). 470-88. https://doi.org/10.9734/ajeba/2024/v24i8146