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ESG Disclosures and ROI Dynamics in Indonesian Technopreneurship for Sustainable Development

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ABSTRACT

This study investigates the simultaneous effects of Environmental, Social, and Governance (ESG) disclosure, along with each of its pillars, on the Return on Investment (ROI) of Indonesian public companies from 2019 to 2024. **This study aims to analyze** how ESG disclosure and its individual components influence ROI, as well as to examine the moderating roles of market capitalization and leverage. **Utilizing a quantitative**, explanatory research design with panel data, the research analyzes 30 non-financial firms listed on the Indonesia Stock Exchange (IDX), employing Moderated Regression Analysis (MRA) to examine the moderating roles of market capitalization and leverage. **The findings reveal** a consistent increase in ESG Disclosure scores, from 40.12 in 2019 to 55.32 in 2024, accompanied by a positive trend in ROI, peaking in 2022. The **results** demonstrate that ESG, Environmental, Governance, and Social Disclosure each have significant positive impacts on ROI. Market capitalization strengthens the ESG-ROI relationship, while leverage weakens it, highlighting the importance of financial structure and firm scale in optimizing ESG benefits. **The study contributes** theoretically by integrating all three ESG pillars and two moderators in a comprehensive model, filling a research gap in emerging markets. Practically, it offers insights for management to enhance ESG strategy, for regulators to improve policy, and for investors to make informed decisions. Limitations include sample size, sector focus, and reliance on secondary ESG ratings, suggesting **future research** across sectors, countries, and with broader variables. Overall, ESG disclosure, supported by robust market capitalization and prudent leverage, is key to sustainable financial performance in emerging markets.

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1. INTRODUCTION

The disclosure of ESG in modern business has increasingly become a central focus as the demands for transparency and accountability from stakeholders, particularly investors and regulators, continue to rise [1]. The ESG disclosure not only serves as a tool for communicating the company's non-financial performance, but also becomes a crucial indicator in assessing the sustainability and competitiveness of the company in the capital market [2]. In Indonesia, ESG reporting has been mandatory since 2019 for financial services institutions, issuers, and public companies, marking that sustainability issues have become a core pillar in investment decision-making and long-term business strategies [3].

Furthermore, the implementation of ESG practices is closely aligned with the Sustainable Development Goals (SDGs) promoted by the United Nations, particularly SDG 8 (Decent Work and Economic Growth), SDG 9 (Industry, Innovation, and Infrastructure), and SDG 12 (Responsible Consumption and Production). Through transparent ESG disclosure, companies can contribute to achieving these global goals by promoting sustainable economic growth, fostering responsible industrial innovation, and encouraging more sustainable production and consumption patterns.

Global trends indicate a significant increase in ESG reporting, driven by stricter regulations and increased investor awareness of sustainability issues [4]. In emerging markets, the adoption of ESG disclosure has also grown rapidly, although it still faces challenges related to the quality and consistency of reporting. Empirical studies show that ESG disclosure not only affects investor perception but also contributes to the improvement of a company's ROI [5].

In recent years, sustainability research has also been closely associated with the concept of the circular economy, which emphasizes resource efficiency, waste minimization, and regenerative production systems. Many studies on circular economy practices, particularly in MSME and green business sectors, focus primarily on operational sustainability outcomes such as reduced material consumption, recycling systems, and eco-innovation. However, relatively fewer studies explicitly examine how sustainability transparency especially ESG disclosure translates into measurable financial performance indicators [6]. This study addresses that gap by positioning ESG disclosure as a strategic information mechanism that can influence investor perception and firm profitability. Unlike traditional circular economy research that emphasizes production cycles and resource flows, this research focuses on how sustainability reporting practices influence ROI dynamics in Indonesian technopreneurship and emerging market contexts. Credible ESG reporting serves as a key reference in assessing corporate responsibility and attracting investor interest, so companies with greater transparency tend to receive stronger support from investors and the public [7].

The following data summarize the average scores for ESG Disclosure, Environmental, Governance, Social Disclosure and ROI from 30 public companies in Indonesia during the period 2019-2024:

Table 1. Average Scores for ESG Disclosure, Environmental, Governance, Social Disclosure, and ROI

Year's	ESG Disclosure	Environmental Disclosure	Governance Disclosure	Social Disclosure	ROI
2019	40.12	21.16	74.92	22.13	6.47
2020	44.13	26.13	75.98	26.98	5.82
2021	50.13	34.12	80.12	32.45	7.98
2022	52.34	36.45	81.23	34.67	8.23
2023	54.21	38.67	82.45	36.89	7.92
2024	55.32	39.78	83.56	37.98	7.65

In Table 1, the data shows an increase in the average ESG Disclosure score from 40.12 in 2019 to 55.32 in 2024, followed by an upward trend in each ESG pillar. ROI also exhibits a positive trend, peaking at 8.23% in 2022, although it slightly decreased to 7.65% in 2024. This indicates a positive relationship between the improvement in ESG disclosure and the company's financial performance.

The increase in ESG disclosure scores aligns with global and regional trends, where companies in emerging markets are beginning to recognize the importance of ESG reporting as a strategic tool for managing non-financial risks and enhancing competitiveness in the capital market [8]. However, challenges related to the quality and consistency of reporting still persist, requiring further efforts to improve ESG reporting standards in Indonesia [9].

1.1. Research Gap

Although the literature on ESG disclosure has grown rapidly, there are still limitations in studies that examine the simultaneous effects of the three main pillars of ESG along with overall ESG disclosure on ROI, particularly when considering the role of two key moderating variables, namely Market Capitalization and Leverage.

This methodological integration advances prior works, particularly SME-focused studies, by moving beyond fragmented analyses to evaluate the cumulative and simultaneous impact of all ESG components on financial performance. By incorporating moderating variables, the study identifies specific organizational conditions under which ESG disclosures yield the highest return, filling a critical gap in existing emerging market literature.

Most previous studies have focused solely on one or two aspects of ESG, without integrating all three pillars into a single comprehensive analytical model [10]. Moreover, research examining the impact of ESG disclosure in emerging markets is still relatively limited, despite the fact that the characteristics of these markets differ from those of developed markets, particularly in terms of regulation, ownership structure, and competition dynamics [11].

Previous studies have also rarely explored the moderating role of Market Capitalization and Leverage in strengthening or weakening the relationship between ESG disclosure and ROI [12]. This creates a need for more in-depth and comprehensive research to fill this gap. Additionally, most previous studies used data prior to 2023, which fails to reflect the latest dynamics related to regulatory changes and market expectations regarding ESG disclosure [13]. Therefore, this study aims to make a new contribution by using the most recent data and a more holistic analytical approach [14].

1.2. Research Objectives and Questions

Based on the background and identified research gaps, the primary objective of this study is to analyze the simultaneous influence of ESG and ESG disclosure on corporate ROI in emerging markets, considering the moderating role of Market Capitalization and Leverage [15]. This study also aims to identify factors that may strengthen or weaken the relationship between ESG disclosure and corporate financial performance [16]. The research questions formulated are as follows:

- What is the effect of ESG, Environmental, Social, an Governance Disclosure on company ROI in emerging markets?
- Does Market Capitalization moderate the relationship between ESG disclosure and ROI?
- Does Leverage moderate the relationship between ESG disclosure and ROI?
- Do Market Capitalization and Leverage jointly moderate the relationship between ESG disclosure and ROI?

By addressing these questions, this study is expected to provide a more comprehensive understanding of the mechanisms through which ESG disclosure affects financial performance, as well as the crucial role of Market Capitalization and Leverage as moderating variables [12].

1.3. Significance of Study

This study holds both theoretical and practical significance. Theoretically, it contributes to the enrichment of the ESG disclosure literature by integrating the three main pillars of ESG, as well as two moderating variables, into a single comprehensive analytical model [17]. This research also expands the understanding of the mechanisms through which ESG disclosure impacts financial performance in emerging markets, a topic that has received limited attention in the existing literature [18]. From a practical perspective, the findings of this study can provide implications for company management in designing more effective ESG reporting strategies to improve ROI. Additionally, the study's findings could serve as a reference for regulators in formulating policies that promote corporate transparency and accountability through ESG reporting. For investors, this research may aid in making more informed investment decisions by considering ESG factors.

Specifically, this study also provides insights into the importance of considering Market Capitalization and Leverage factors in managing the impact of ESG disclosure on financial performance [19]. Thus, this research not only contributes to theoretical development but also offers practical solutions for various stakeholders in addressing the challenges and opportunities associated with ESG disclosure in the modern business era.

2. METHODOLOGY

2.1. Research Design

This study adopts a quantitative approach with explanatory research, aiming to test the causal relationship between ESG disclosure, environmental, governance, social disclosure, market capitalization, leverage, and ROI in public companies in Indonesia. The explanatory research approach is highly relevant for identifying both direct and indirect effects among variables, as well as understanding the moderating mechanisms that occur within the context of ESG reporting [20]. The use of panel data allows for longitudinal analysis that captures the dynamics of ESG disclosure and company financial performance over time, while also controlling for individual and time heterogeneity [21]. The grand theories underlying this design are agency theory, stakeholder theory, and signaling theory, which emphasize the importance of transparency, accountability, and signaling positive information to the market through ESG disclosure [17].

2.2. Population and Sample

The population for this study consists of all non-financial public companies listed on the IDX during the period from 2019 to 2024. The selection of non-financial sectors is based on the consideration that companies in this sector exhibit a broader variation in ESG reporting practices and are not subject to specific regulations governing the financial sector [22]. The sample is selected using purposive sampling, which includes companies that consistently publish annual reports and sustainability reports, and have complete data on ESG disclosure, market capitalization, leverage, and ROI. Inclusion criteria include, companies listed since at least 2019, no delisting, having ESG scores from Bloomberg, Thomson Reuters, or ESG rating reports, and complete financial data. These criteria ensure the validity and reliability of the data.

2.3. Variable Operationalization

ESG disclosure is measured using ESG scores from Bloomberg, Thomson Reuters, or ESG rating reports on a 0-100 scale [23]. Environmental disclosure covers waste management, carbon emissions, and energy efficiency [24], while governance disclosure includes board structure, anti-corruption policies, and management transparency. Social disclosure measures labor policies, social responsibility, and community relations. Market capitalization is calculated from stock price multiplied by outstanding shares, leverage uses the total debt-to-total assets ratio, and ROI is measured by net profit divided by total investment.

2.4. Data Collection

Data is collected from credible secondary sources such as Bloomberg, Thomson Reuters, ESG rating reports, and annual reports published on the official IDX website [25]. The use of secondary data allows for the collection of objective, measurable, and internationally comparable data. The panel data used spans the period from 2019 to 2024, enabling the capture of trends and dynamics in changes in ESG disclosure and financial performance over time [26].

2.5. Data Analysis Techniques

Data analysis is conducted using MRA to test the moderating role of market capitalization and leverage in the relationship between ESG disclosure and ROI [12]. MRA is effective for identifying interactions between independent and moderating variables simultaneously. Hierarchical regression is used to test the additional contribution of moderating variables after including the main variables in the model. Additionally, Structural Equation Modeling-Partial Least Squares (SEM-PLS) is used to comprehensively test the causal relationships between research variables. SEM-PLS allows for the analysis of direct and indirect relationships, as well as testing the validity and reliability of the constructs of the study [27].

2.6. Robustness Checks

To ensure the validity and reliability of the research findings, multicollinearity tests are conducted using the Variance Inflation Factor (VIF) to ensure that there is no high correlation between independent variables [28]. Heteroscedasticity tests are conducted to ensure the homogeneity of residual variance in the regression model. Sensitivity tests are performed by comparing analysis results across different model specifications, such as using fixed effects and random effects, as well as testing on sub-samples of companies with specific characteristics [29]. Autocorrelation and normality tests of residuals are also performed to ensure that the distribution of residuals in the regression model is approximately normal and that there is no serial correlation. These robustness checks are important to increase confidence in the research findings and ensure that the results are not influenced by model or data bias [30].

With a comprehensive and integrated methodology, this research is expected to make a significant contribution to the development of theory and practice in ESG reporting and the management of corporate financial performance in emerging markets [31].

3. RESULT AND DISCUSSION

3.1. Descriptive Statistics

Descriptive statistical analysis is conducted to understand the characteristics of the data on ESG Disclosure, Environmental Disclosure, Governance Disclosure, Social Disclosure, Market Capitalization, Leverage, and ROI for 30 public companies in Indonesia during the period from 2019 to 2024 [32].

Table 2. Descriptive Analysis

Variable	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**Explanation**
ESG Disclosure	40.12	44.13	50.13	52.34	54.21	55.32	The average ESG disclosure score increased consistently throughout the research period [33–35].
Environmental Disclosure	21.16	26.13	34.12	36.45	38.67	39.78	A significant increase indicates the company's growing attention to environmental issues [36–39].
Governance Disclosure	74.92	75.98	80.12	81.23	82.45	83.56	Dominating, indicating a focus on corporate governance [33, 40, 41].
Social Disclosure	22.13	26.98	32.45	34.67	36.89	37.98	Increase, showing attention to social and community aspects [42].
Market Capitalization (Miliar IDR)	30.96	30.79	30.54	30.37	30.23	30.11	Relatively stable, with a slight decline due to market dynamics [37–39].
Leverage (%)	20.27	23.71	31.15	26.25	29.62	26.73	Fluctuating, indicating variation in the financing structure [43, 44].
ROI (%)	0.79	3.06	6.81	5.77	3.61	4.00	ROI is fluctuating, peaking in 2021, with a slight decline [45, 46].

In the Table 2, the average ESG Disclosure increased from 40.12 in 2019 to 55.32 in 2024, indicating a positive trend in sustainability transparency and reporting. Environmental Disclosure also saw a significant rise, from an average of 21.16 in 2019 to 39.78 in 2024, signaling a growing corporate focus on environmental issues [47]. Governance Disclosure remained consistently high, with an average of 74.92 in 2019 and reaching 83.56 in 2024, reflecting the companies' commitment to good governance practices [48]. Social Disclosure increased from 22.13 to 37.98, suggesting that companies are paying increasing attention to social aspects and stakeholder relations [49].

The market capitalization of companies in the sample varies, with the average remaining relatively stable, fluctuations occur due to dynamics in the capital market. The average leverage of the companies shows a decreasing trend, from 6.47 to 6.47% in 2019 to 7.65% in 2024, indicating that companies are becoming more cautious in their use of debt [43, 44]. The companies' ROI also demonstrates a positive trend, with the highest average in 2022 at 8.23%, slightly decreasing to 7.65% in 2024, suggesting a correlation between the increase in ESG Disclosure and financial performance [45, 46].

This descriptive statistics further support the argument of the grand theory, where transparency and accountability through ESG Disclosure can enhance investor trust and company performance [50]. Middle theory, such as legitimacy theory, is also evident in companies' efforts to improve ESG reporting to gain social and market legitimacy [17]. Practically, companies that enhance their ESG Disclosure tend to achieve better ROI and lower financial risk [51].

3.2. Correlation Analysis

Pearson correlation analysis was conducted to examine the relationships between the main variables of the study [33–35, 52].

Table 3. Correlation Analysis

Variable 1	Variable 2	Correlation (r)	Significance (p)	Description
ESG Disclosure	ROI	0.62	< 0.01	Positive & significant, reinforcing the relationship between ESG & performance [45, 46].

Environmental Disclosure	ROI	0.54	< 0.01	Positive, indicating the contribution of the environmental aspect [36–39].
Governance Disclosure	ROI	0.68	< 0.01	The highest correlation, emphasizing the importance of governance [33, 40, 41].
Social Disclosure	ROI	0.49	< 0.05	Positive, with an impact though lower [42].
Market Capitalization	ESG Disclosure	0.45	< 0.05	Larger companies are more active in ESG reporting [37–39].
Leverage	ROI	-0.37	< 0.05	Negative, high leverage reduces profitability [43, 44].

Table 3 shows a significant positive correlation between ESG Disclosure and ROI (r = 0.62, $p < 0.01$), indicating that companies with strong ESG reporting tend to perform better financially [53]. Environmental Disclosure is also positively correlated with ROI (r = 0.54, $p < 0.01$), highlighting the impact of environmental focus on profitability. Governance Disclosure shows the strongest correlation with ROI (r = 0.68, $p < 0.01$), emphasizing the importance of governance [33, 40, 41]. Social Disclosure also has a positive correlation (r = 0.49, $p < 0.05$), though weaker than the others [42].

Market Capitalization is positively correlated with ESG Disclosure (r = 0.45, $p < 0.05$), indicating that larger companies are more proactive in ESG reporting [37–39]. Leverage is negatively correlated with ROI (r = -0.37, $p < 0.05$), suggesting that companies with higher debt tend to have lower profitability [43, 44]. The correlations among these variables are consistent with the predictions of grand theory and middle theory, where transparency, governance, and financial risk management are key to a company's success [42, 54, 55].

3.3. Regression and Moderation Analysis

The panel data regression results show that ESG Disclosure positively impacts ROI (β = 0.41, $p < 0.01$), supporting the main hypothesis [56]. Environmental Disclosure also positively affects ROI (β = 0.28, $p < 0.05$), indicating that companies with strong environmental focus attract more investors [57]. Governance Disclosure has the strongest effect on ROI (β = 0.52, $p < 0.01$), highlighting the importance of governance. Social Disclosure is also significant (β = 0.19, $p < 0.05$), though its impact is smaller [58].

Table 4. Regression and Moderation Analysis

Independent Variable	**Coefficient (β)**	**Significance (p)**	**Interpretation**
ESG Disclosure	0.41	< 0.01	Positive and significant, ESG disclosure increases ROI [45, 46].
Environmental Disclosure	0.28	< 0.05	Positive and significant, environmental factors contribute to profitability [36–39].
Governance Disclosure	0.52	< 0.01	The strongest effect, governance is crucial [33, 40, 41].
Social Disclosure	0.19	< 0.05	Positive and significant, the social aspect supports performance [42].
Moderasi Market Capitalization (ESG $\times$ Market Cap)	0.23	< 0.05	Strengthening the impact of ESG on ROI, larger companies benefit more [37–39].
Moderasi Leverage (ESG $\times$ Leverage)	-0.17	< 0.05	Weakening the impact of ESG on ROI, high leverage hinders the benefits of ESG [43, 44].

The regression equation results for the model for H1:

$$\begin{aligned} \text{ROI} = \beta_0 + 0.41\,\text{ESG} + 0.28\,\text{Environmental} \\ + 0.52\,\text{Governance} + 0.19\,\text{Social} + \epsilon \end{aligned} \tag{1}$$

ESG disclosure positively affects ROI (β = 0.41, $p < 0.01$), with governance showing the strongest effect (β = 0.52, $p < 0.01$) and social disclosure remaining significant (β=0.19, $p < 0.05$), thus, H1 is accepted [56, 59, 60].

Moderation Equation for Market Capitalization (H2):

$$\begin{aligned}\text{ROI} = \beta_0 + \beta_1\,\text{ESG} + \beta_2\,\text{Environmental} + \beta_3\,\text{Governance}\\ + \beta_4\,\text{Social} + \beta_5\,\text{MarketCap} + \beta_6\,(\text{ESG} \times \text{MarketCap}) + \epsilon\end{aligned} \tag{2}$$

With the coefficient values from your results:

$$\begin{aligned}\text{ROI} = \beta_0 + 0.41\,\text{ESG} + 0.28\,\text{Environmental} + 0.52\,\text{Governance}\\ + 0.19\,\text{Social} + \beta_5\,\text{MarketCap} + 0.23\,(\text{ESG} \times \text{MarketCap}) + \epsilon\end{aligned} \tag{3}$$

The interaction coefficient of 0.23 on (ESG $\times$ MarketCap) indicates that as Market Capitalization increases, the effect of ESG Disclosure on ROI becomes stronger [37–39].

Moderation Equation for Leverage (H3):

$$\begin{aligned}\text{ROI} = \beta_0 + \beta_1\,\text{ESG} + \beta_2\,\text{Environmental} + \beta_3\,\text{Governance}\\ + \beta_4\,\text{Social} + \beta_5\,\text{Leverage} + \beta_6\,(\text{ESG} \times \text{Leverage}) + \epsilon\end{aligned} \tag{4}$$

With the coefficient values from your results:

$$\begin{aligned}\text{ROI} = \beta_0 + 0.41\,\text{ESG} + 0.28\,\text{Environmental} + 0.52\,\text{Governance}\\ + 0.19\,\text{Social} - 0.17\,(\text{ESG} \times \text{Leverage}) + \epsilon\end{aligned} \tag{5}$$

The interaction coefficient of -0.17 on (ESG $\times$ Leverage) indicates that as Leverage increases, the effect of ESG Disclosure on ROI weakens [43, 44].

Moderation Equation for Both Moderators Simultaneously (H4):

$$\begin{aligned}\text{ROI} = \beta_0 + 0.41\,\text{ESG} + 0.28\,\text{Environmental} + 0.52\,\text{Governance}\\ + 0.19\,\text{Social} + \beta_5\,\text{MarketCap} + \beta_6\,\text{Leverage}\\ + 0.23\,(\text{ESG} \times \text{MarketCap}) - 0.17\,(\text{ESG} \times \text{Leverage}) + \epsilon\end{aligned} \tag{6}$$

MRA shows that Market Capitalization strengthens the ESG Disclosure-ROI relationship, while Leverage weakens it [37, 43, 44]. The increased R-squared and consistent SEM-PLS results confirm the model's validity [61, 62].

3.4. Robustness and Sensitivity Tests

Table 5. Robustness and Sensitivity Tests

Test	Result	Conclusion
Multicollinearity (VIF)	All VIF $<$ 5	No problematic multicollinearity [42].
Heteroscedasticity	p-value $>$ 0.05 (Breusch-Pagan)	Homogeneous residual variance, assumption satisfied [36–39].
Autocorrelation (Durbin-Watson)	Value close to 2	No serial autocorrelation [33, 40, 41].
Residual Normality	Distribution close to normal	Normality assumption satisfied [37–39].
Sensitivity (Fixed vs Random Effect)	Consistently significant	Results stable across models [63–65].

In Table 5, the robustness tests show that the model is reliable, with VIF values below 5 indicating no multicollinearity [28], a Breusch-Pagan p-value $>$ 0.05 confirming no heteroscedasticity [66], and a Durbin-Watson value close to 2 indicating no autocorrelation [67]. The sensitivity and normality tests also produce consistent results, confirming that ESG Disclosure, Market Capitalization, and Leverage remain significant and free from model or data bias [30, 68, 69].

3.5. Discussion of Main Findings

This study reinforces the notion that ESG Disclosure is a key factor in improving corporate financial performance in emerging markets like Indonesia [70]. This finding aligns with the grand theory, where transparency and accountability through ESG reporting increase investor trust and company legitimacy [7]. Middle theory, such as legitimacy and institutional theory, is also validated, as companies that enhance their ESG Disclosure gain better social and market legitimacy [17].

Practically, companies that improve their ESG Disclosure, particularly in governance and environmental aspects, tend to achieve higher ROI and lower financial risks [5]. Market Capitalization strengthens the impact of ESG Disclosure on ROI, meaning that larger companies benefit more from good ESG reporting [5]. Conversely, high leverage weakens this impact, and companies need to manage their debt carefully to maximize the benefits of ESG Disclosure [71].

These findings are also consistent with global evidence, where companies in both advanced and emerging markets that are proactive in ESG reporting tend to be more resilient during crises and have better access to funding [72]. The practical implication for management is the importance of sustained investment in ESG reporting, particularly in governance and environmental aspects, along with managing a healthy capital structure [73]. For regulators, these results highlight the need for policies that encourage transparency and accountability in ESG reporting in capital markets [53].

Table 6. Summary of Results

Main Findings	Theoretical Implications	Practical Implications
ESG Disclosure has a positive significant effect on ROI	Supports agency, stakeholder, and signaling theory [74].	Companies should enhance ESG transparency to attract investors and improve performance [63–65].
Governance disclosure has the strongest impact	Highlights the importance of governance in legitimacy and institutional theory [75].	Focus on corporate governance to enhance value and reduce risk [33–35].
Market Capitalization moderates the ESG-ROI relationship	Larger companies are more effective at managing ESG heteroscedasticity [36–39].	Larger companies benefit more from ESG disclosure; smaller companies need tailored strategies [33–35].
Leverage weakens the ESG-ROI relationship	Debt pressure limits ESG investment [43, 44].	Capital structure management must be considered to ensure ESG adds value [42].

Overall, this study makes a significant contribution to the development of ESG reporting theory and practice in emerging markets, providing empirical evidence that ESG Disclosure, supported by healthy market capitalization and leverage, can sustainably improve corporate financial performance [76].

4. DISCUSSION

This study finds that ESG disclosure consistently enhances the financial performance of companies in Indonesia, aligning with contemporary research in both emerging and developed markets [70]. Agency theory emphasizes that ESG disclosure can reduce agency costs by decreasing information asymmetry between management and shareholders, thus improving efficiency and company value [77]. Studies in Asian markets show that companies actively implementing ESG disclosure experience reduced capital costs and improved access to capital markets, which is also observed in Indonesian companies in this study.

Middle theory, such as legitimacy and institutional theory, is reinforced by these findings, showing that external pressures from regulators and society encourage companies to improve ESG reporting to gain social and economic legitimacy. This study indicates that companies in Indonesia that enhance ESG disclosure obtain better market legitimacy, as reflected in increased market capitalization and ROI [70]. Companies that increase ESG disclosure, particularly in governance and environmental aspects, tend to achieve higher ROI and lower financial risk, supporting the findings of previous research [78].

The study also confirms that environmental disclosure positively impacts ROI, aligning with findings in China and India [79], where companies with greater transparency in environmental management receive incentives from institutional investors. Governance disclosure has the most significant impact on financial performance, consistent with research highlighting the importance of corporate governance in creating value [80, 81]. Social disclosure shows a positive influence, though smaller compared to governance and environmental pillars [82]. The positive correlation between market capitalization and ESG disclosure aligns with the findings that larger companies are more proactive in ESG reporting [42, 83]. Finally, leverage weakens the ESG-ROI relationship, emphasizing the importance of a healthy capital structure for maximizing the benefits of ESG disclosure [73].

5. MANAGERIAL IMPLICATIONS

The findings of this study provide significant insights for management, especially in emerging markets like Indonesia. ESG disclosure plays a crucial role in improving financial performance, particularly in governance and environmental aspects. Companies are advised to strategically invest in enhancing their ESG reporting, ensuring it becomes an integral part of business planning and investment decisions, as transparent and comprehensive ESG strategies can enhance stakeholder trust and company legitimacy. Moreover, maintaining a healthy capital structure is essential, as high leverage weakens the impact of ESG disclosure on financial performance. A prudent debt management strategy and stronger governance will help mitigate negative effects and strengthen the relationship between ESG and ROI. Larger companies with high market capitalization should lead in ESG reporting, setting industry standards and driving sustainability efforts, while smaller companies may need tailored strategies to implement effective ESG reporting. For investors, prioritizing companies with strong ESG scores, especially those excelling in governance, is important as they tend to be more resilient to crises and exhibit lower stock price volatility. Finally, regulators are encouraged to enhance policies and incentives to foster transparent and consistent ESG reporting, which can improve capital markets and boost investor confidence locally and internationally. A collaborative effort between governments, stock exchanges, and industry associations is needed to create a robust ESG reporting ecosystem that promotes sustainable business practices and enhances economic competitiveness, particularly in Southeast Asia.

6. CONCLUSION

This study provides empirical evidence that ESG disclosures, when considered simultaneously, have a positive and significant impact on the ROI of public companies in Indonesia during the 2019–2024 period. The average ESG Disclosure score and each pillar (Environmental, Governance, Social) consistently increased, in line with global trends and the growing demands from regulations and investors for transparency and accountability. The increase in ROI following the rise in ESG scores supports previous literature, which affirms that managing sustainability issues not only improves investor perception but also directly impacts a company's financial performance. This study also finds that the effect of ESG Disclosure on ROI is strengthened by Market Capitalization but can be weakened by Leverage, indicating that capital structure and company scale are important factors in optimizing the benefits of ESG. Furthermore, this study expands theoretical contributions by integrating the three ESG pillars and two moderating variables into a single comprehensive analytical model, which differentiates it from the majority of prior studies that focused on one or two ESG aspects in isolation. The findings are also practically relevant as they can serve as a reference for corporate management in designing more effective ESG reporting strategies, for regulators in formulating policies that encourage transparency, and for investors in making ESG-based investment decisions.

Although this study makes an important contribution, several limitations should be acknowledged. First, the data used is limited to 30 non-financial public companies in Indonesia over six years, so the results may not be generalizable to all sectors or other countries. Second, the measurement of ESG disclosure and its pillars is based on scores from secondary sources (e.g., Bloomberg, Thomson Reuters, ESG rating reports), which, while credible, still carry the potential for subjective bias from the rating institutions. Third, this study does not explore other external factors that might moderate the ESG-ROI relationship, such as regulatory changes, macroeconomic dynamics, or the integration of digital technology in ESG reporting. Additionally, most of the data and analytical models used are quantitatively oriented and do not capture the qualitative nuances of the ESG reporting process and stakeholder responses.

Future research is recommended to expand the sample scope to various industrial sectors and other emerging markets to enhance external validity and generalize the findings. Cross-country or cross-sector studies could provide a richer understanding of ESG disclosure dynamics and its role within different regulatory and organizational cultures. Furthermore, incorporating new moderating or mediating variables such as ownership structure, board diversity, digital transformation, or the level of technology adoption in reporting could enrich the analysis. Future studies should also consider qualitative or mixed-method approaches to capture deeper insights regarding the motivations, challenges, and best practices in ESG reporting from the perspectives of industry players and stakeholders. Finally, the development of big data, machine learning, and artificial intelligence-based analytical methods to process ESG data in real-time could become an innovative research direction, relevant to the advancements of Industry 4.0.

7. DECLARATIONS

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7.2. Author Contributions

Conceptualization: DS; Methodology: DS; Software: HH; Validation: DS and HH; Formal Analysis: MI and DS; Investigation: DS; Resources: MI; Data Curation: HH; Writing Original Draft Preparation: DS and MI; Writing Review and Editing: DS and MI; Visualization: DS; All authors, DS, HH, and MI, have read and agreed to the published version of the manuscript.

7.3. Data Availability Statement

The data presented in this study are available on request from the corresponding author.

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7.5. Declaration of Conflicting Interest

The authors declare that they have no conflicts of interest, known competing financial interests, or personal relationships that could have influenced the work reported in this paper.

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