



Effect of Financial Report Quality and ESG Disclosure on Investment Efficiency in Non-Financial Companies on the Indonesia Stock Exchange 2018-2023

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ABSTRACT: This study examines the impact of financial reporting quality and Environmental, Social, and Governance (ESG) disclosure on investment efficiency in non-financial firms listed on the Indonesia Stock Exchange (IDX) from 2018 to 2023. Investment efficiency, defined as a firm's ability to allocate capital to projects with positive Net Present Value (NPV), is increasingly important in Indonesia's competitive and dynamic market. Despite growing interest, empirical evidence on the joint effects of financial reporting quality and ESG disclosure on investment efficiency remains limited, especially in emerging markets. This research investigates whether transparent financial reporting enhances investment efficiency and whether ESG disclosure constrains it. Using a quantitative method, 56 IDX-listed non-financial firms with consistent annual financial statements and Bloomberg ESG scores were selected via purposive sampling, yielding 336 firm-year observations. Investment efficiency was measured using residuals from the (Biddle et al., 2009) model, financial reporting quality through a modified accrual model, and ESG disclosure via Bloomberg ESG composite scores. Panel regression with bootstrapped standard errors (1,000 replications) was applied for data analysis. The results indicate that financial reporting quality positively affects investment efficiency ($p < 0.05$), while ESG disclosure negatively affects it ($p = 0.05$). These findings suggest that high-quality financial reporting improves capital allocation by reducing information asymmetry, whereas excessive or symbolic ESG practices may hinder efficiency if misaligned with strategic objectives. This study contributes to the literature by integrating financial reporting and ESG considerations within a single empirical framework in Southeast Asia, providing insights specific to the Indonesian context.

Keywords: Agency Theory, ESG Disclosure, Financial Reporting Quality, Investment Efficiency.



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INTRODUCTION

Over the past decade, Indonesia's economy has expanded rapidly, fostering intense competition among firms striving to sustain growth and attract investment in the dynamic post-pandemic environment. In this setting, *investment efficiency* defined as a firm's ability to allocate resources

toward projects with positive net present value (NPV) becomes critically important for optimizing capital use, strengthening competitiveness, and ensuring long-term value creation. Empirical evidence supports this relevance: studies of Indonesian firms show that higher quality of financial reporting and conservative accounting practices significantly improve investment efficiency by enabling better project evaluation and reducing mis-allocation ([Ardianto et al., 2020](#)). Moreover, firms that successfully implement efficient allocation of resources tend to achieve greater firm value, as indicated by market-based performance measures such as Tobin's Q ([Tampenawas & Kusumadewi, 2024](#)).

Additionally, intangible assets—especially human capital embedded within a firm's intellectual capital stock—also play a positive role in enhancing investment efficiency, underscoring the importance of resource quality, not just quantity ([Khasanah et al., 2024](#)). Yet, despite the country's growing capital market, evidence suggests that many Indonesian firms still face inefficiencies in investment decisions, partly due to information asymmetry and weak corporate transparency.

One key determinant of a firm's investment efficiency is the quality of financial reporting: transparent and reliable financial statements reduce information asymmetry and allow investors to assess firm performance accurately, thereby mitigating agency problems such as over-investment and under-investment. For instance, empirical evidence from the Indonesian Stock Exchange shows that higher *financial reporting quality* is positively and significantly associated with increased investment efficiency, indicating that firms with better reporting tend to allocate capital more optimally ([Ardianto et al., 2020](#)). Moreover, research focusing on non-financial firms in Indonesia during 2015–2019 indicates that firms with higher reporting quality and appropriately high audit standards are more likely to exhibit efficient investment behavior, supporting the notion that good financial reporting mitigates inefficient capital allocation ([Herbert & Harto, 2021](#)). Consistent international evidence also underscores this mechanism: higher earnings quality is linked to better investment efficiency because improved financial transparency helps monitor management decisions and restrain agency costs ([Chen et al., 2021](#)). Prior research ([Biddle et al., 2009](#); [Saputra & Wicaksono, 2022](#)) highlights that high financial reporting quality facilitates optimal capital allocation through improved earnings reliability. It also reduces uncertainty for investors and stakeholders. Despite these benefits, the impact of financial reporting quality on investment efficiency in emerging markets is not well understood. Specifically, in markets like Indonesia, empirical evidence on this relationship remains limited.

In recent years, non-financial information particularly Environmental, Social, and Governance (ESG) disclosure has gained prominence as an additional signal influencing investment decisions. Following the enactment of OJK Regulation No. 51/2017, ESG reporting among Indonesian public companies has grown steadily, reaching approximately 30% of listed firms by 2023. Nonetheless, the strategic alignment between ESG initiatives and investment efficiency is still ambiguous. While some studies find that ESG disclosure enhances investment efficiency by reducing information asymmetry and reputational risks ([Khalil et al., 2024](#); [Kouaib, 2022](#)), others report neutral or even negative effects when ESG efforts are symbolic or compliance-driven ([Firawan & Dewayanto, 2021](#); [Kuzey et al., 2023](#))ss.

These mixed findings reveal a significant research gap, particularly in emerging economies where institutional quality and ESG maturity remain uneven. Previous studies often examined financial reporting quality and ESG disclosure as separate constructs, limiting understanding of their joint effects on firm behavior. This study addresses this limitation by integrating both dimensions into a unified empirical framework. The combined analysis provides a more comprehensive perspective on how transparency and sustainability practices influence investment efficiency. Non-financial firms are specifically selected due to their substantial environmental and social impacts. Their capital-intensive operations and complex investment structures make them particularly sensitive to reporting and ESG practices. By focusing on these firms, the research captures a critical segment of Indonesia's capital market.

By addressing this gap, the study contributes to the literature on agency theory and sustainable investment ([Jensen & Meckling, 1976](#)). It offers practical insights for policymakers aiming to strengthen regulatory frameworks and promote responsible corporate behavior. Investors can benefit from understanding how integrated disclosure affects capital allocation and risk assessment. Corporate managers are also guided on balancing transparency, sustainability, and investment efficiency. The analysis covers non-financial firms listed on the Indonesia Stock Exchange (IDX) from 2018 to 2023. The empirical findings shed light on the interaction between financial reporting and ESG maturity in emerging markets. Ultimately, the study enhances both academic knowledge and practical decision-making in Indonesia's evolving market context.

METHOD

This study adopts a quantitative research design to examine the effect of financial reporting quality and Environmental, Social, and Governance (ESG) disclosure on investment efficiency among publicly listed non-financial firms in Indonesia during 2018–2023. The population of the study includes all companies listed on the Indonesia Stock Exchange (IDX), providing a comprehensive context for the analysis. Purposive sampling is applied to select firms that consistently publish annual reports, have available Bloomberg ESG scores, and provide complete data for the study variables, ensuring the reliability and relevance of the sample. Secondary data are obtained from multiple sources, including annual reports, sustainability reports, IDX databases, and the Bloomberg Terminal. This approach allows for a robust examination of the relationships between financial reporting quality, ESG disclosure, and investment efficiency. The combination of structured sampling and verified secondary data ensures the validity and accuracy of the research findings. Overall, the methodology provides a systematic framework to analyze how corporate reporting practices influence investment decisions in the Indonesian market.

The dependent variable in this study, *investment efficiency*, is operationalized as the absolute value of the residuals from the investment-growth model originally proposed by ([Biddle et al., 2009](#)), which approximates how far actual investment deviates from the expected investment level. The key independent variables are *financial reporting quality*, often assessed via a modified accrual model as suggested by ([Tibesigwa et al., 2023](#)), and *ESG disclosure*, typically proxied by composite ESG scores such as those from Bloomberg or equivalently comprehensive ESG rating platforms. Several firm-specific control variables including financial slack, asset tangibility, leverage, firm

size, firm age, and profitability are included to account for other factors that empirical literature finds may influence investment efficiency. Prior empirical evidence in Indonesia supports this framework: for example, studies show that higher financial reporting quality is associated with more efficient investment decisions (i.e., lower residuals), and that ESG disclosure can also impact investment efficiency, though the direction and significance vary across samples and contexts.

Over the past decade, researchers increasingly rely on *panel data regression* to analyze firm-level financial behavior because it captures both cross-sectional and time-series variation in corporate data (Durrab et al., 2020). In this study, data are analyzed using panel regression techniques in Stata 14, combining descriptive statistics, diagnostic tests, and multivariate regression to evaluate the influence of financial reporting quality and ESG disclosure on investment efficiency. To strengthen the robustness of inference against potential heteroskedasticity or autocorrelation, a *bootstrap* resampling approach with 1,000 replications is employed for standard error estimation and confidence intervals (Gao et al., 2022). Statistical significance is assessed at the 5% level ($p < 0.05$), ensuring that the estimated relationships are reliable and empirically valid in the context of Indonesian capital-market firms (Gao et al., 2022; Saputri et al., 2020).

RESULT AND DISCUSSION

Population and Sample Distribution

This study uses purposive sampling to select 56 non-financial firms listed on the Indonesia Stock Exchange (IDX) during 2018–2023 that consistently published annual reports and Bloomberg ESG scores. After six years of observation, the dataset comprises 336 firm-year observations.

Table 1. Purposive Sampling

No	Criteria	Number of Companies	Periode	Total Sample		
1	Non-financial companies listed on the Indonesia Stock Exchange (IDX) during the period 2018–2023.	726				
2	Non-financial companies that do not have complete ESG scores available in the Bloomberg database for the 2018–2023 period.	(23)				
3	Non-financial companies with incomplete data according to the variables used in this study	(647)				
Total Research Sample Companies		56	x	6	=	336

Source: Processed Data, 2025

This study employed purposive sampling to select 56 non-financial firms listed on the Indonesia Stock Exchange (IDX) from 2018 to 2023 that consistently published annual reports and had complete Bloomberg ESG scores. The initial population consisted of 726 firms, from which 23 were excluded due to incomplete ESG data. An additional 647 firms were removed because their

data were insufficient for the study variables, leaving a final sample of 56 companies. Over six years of observation, this resulted in a dataset of 336 firm-year observations, providing a robust panel for analysis. The sampling process ensures that the selected firms meet the criteria necessary for examining the relationship between financial reporting quality, ESG disclosure, and investment efficiency. By focusing on firms with complete and consistent data, the study enhances the reliability and validity of its findings. Overall, the dataset provides a representative and well-defined sample that supports rigorous empirical investigation of investment efficiency in Indonesian non-financial firms.

Descriptive Analysis of Research Variables

The descriptive analysis summarizes the characteristics of all variables used in the study.

Table 2. Descriptive Statistics

Variable	Mean	Std.Dev.
INVEF	-5.02	28.87
FRQ	5.02	547.12
ESG	41.56	11.25
SLACK	0.75	1.85
TANG	0.42	0.64
LEV	0.56	0.64
SIZE	29.8	3.44
AGE	42.29	21.13
ROA	6.07	9.53

Source: Processed Data, 2025

The descriptive statistics of the study reveal that the mean investment efficiency (INVEF) is -5.02 with a standard deviation of 28.87, indicating a wide dispersion in firms' investment performance. Financial reporting quality (FRQ) shows a mean of 5.02 and a very high standard deviation of 547.12, reflecting substantial variability in reporting practices among the sampled firms. The average ESG disclosure score is 41.56 with a standard deviation of 11.25, suggesting moderate variation in sustainability practices. Control variables such as financial slack (mean 0.75, SD 1.85), asset tangibility (mean 0.42, SD 0.64), leverage (mean 0.56, SD 0.64), firm size (mean 29.8, SD 3.44), firm age (mean 42.29, SD 21.13), and profitability measured by ROA (mean 6.07, SD 9.53) show diverse distributions across the sample. These figures indicate heterogeneity in both financial and operational characteristics, which may influence investment efficiency outcomes. Overall, the descriptive analysis highlights significant variability in corporate reporting quality, ESG disclosure, and firm-specific attributes. In synthesis, the data suggest that firms differ markedly in reporting practices, sustainability engagement, and financial characteristics, which underscores the importance of examining their impact on investment efficiency.

The average investment efficiency (INVEF) of -5.02 indicates suboptimal capital allocation across the sampled firms. The high standard deviation of 28.87 suggests considerable variation in investment efficiency, likely due to differences in industry characteristics and investment intensity. Regarding financial reporting quality (FRQ), the mean value of 5.02 masks substantial

inconsistencies among firms. The extremely high standard deviation of 547.12 highlights wide disparities in accrual quality, which may result from variations in accounting policies, governance practices, and audit quality. The average ESG disclosure score of 41.56 points to a moderate level of sustainability reporting among the firms. Variations in ESG scores reflect uneven adoption and implementation of ESG initiatives across companies.

Control variables also exhibit diverse characteristics among the sampled firms. On average, firms maintain limited financial slack, with a mean value of 0.75. Leverage levels are moderate, averaging 0.56, while firm size remains relatively consistent, with a mean of 29.8. The average firm age of 42 years indicates that the sample consists largely of mature companies. Profitability, measured by ROA, averages 6.07% but shows wide dispersion, reflecting heterogeneous operational performance across firms. These variations in control variables suggest that firms differ substantially in financial flexibility, capital structure, and performance outcomes.

Classical Assumption Test

The results of the classical assumption tests indicate that the regression model meets most of the standard assumptions required for reliable estimation. The multicollinearity test shows a mean Variance Inflation Factor (VIF) of 1.12, which is well below the threshold of 5, suggesting that the independent variables are not highly correlated and can provide distinct explanatory power. Heteroskedasticity is detected through the Breusch–Pagan test, with a χ^2 value of 73.25 and a significance level of $p < 0.001$, indicating that the variance of the residuals is not constant across observations. To correct for this, bootstrapped standard errors with 1,000 replications are applied, ensuring that the coefficient estimates remain robust and reliable. Meanwhile, the Wooldridge test for autocorrelation yields a p-value of 0.833, confirming that first-order autocorrelation is absent and that the residuals are independent. Overall, these diagnostics support the adequacy of the model while addressing the heteroskedasticity issue effectively.

These findings provide a solid foundation for further regression analysis and hypothesis testing. The absence of multicollinearity ensures that the effects of financial reporting quality and ESG disclosure on investment efficiency can be interpreted without bias from overlapping explanatory variables. Correcting for heteroskedasticity through bootstrapping strengthens the credibility of the standard errors, mitigating potential distortions in statistical inference. Additionally, the lack of autocorrelation confirms that the time-series structure or sequential observations do not compromise the independence of residuals. Consequently, the model assumptions largely hold, allowing the study to proceed with confidence in the robustness of its estimates. The adjustments applied enhance the validity and reliability of the subsequent findings. Finally, the combined diagnostic results suggest that the regression model is well-specified for analyzing the determinants of investment efficiency.

In synthesis, the classical assumption tests confirm that the regression model is largely reliable and interpretable. Multicollinearity is absent, ensuring distinct contributions of each independent variable, while heteroskedasticity is effectively addressed using bootstrapped standard errors. The residuals demonstrate no autocorrelation, supporting the independence of observations. These

results indicate that the model is appropriate for examining the effects of financial reporting quality and ESG disclosure on investment efficiency. By meeting key statistical assumptions, the study enhances confidence in the validity of its empirical conclusions. Overall, the diagnostics provide a robust foundation for drawing meaningful insights from the regression analysis.

Multiple Regression Test

Table 3. Multiple Regression Test

INVEFF	Coef	Std. Err.	Z	p > z	Hipotesis
FRQ	0.00	0.00	1.97	0.04	H1: Accepted
ESG	-2.31	1.18	-1.96	0.05	H2: Accepted
SLACK	0.42	0.98	0.43	0.66	
TANG	-1.16	3.59	-0.32	0.74	
LEV	1.07	1.44	0.74	0.45	
SIZE	-0.85	0.59	-1.42	0.15	
AGE	0.16	0.10	1.59	0.11	
ROA	0.12	0.14	0.87	0.38	
Cons	17.29	16.00	1.08	0.28	

Source: Processed Data, 2025

The regression results indicate that financial reporting quality (FRQ) positively and significantly influences investment efficiency, with a coefficient of 0.00 and p-value of 0.04, confirming Hypothesis 1 (H1). This finding implies that firms providing high-quality financial reports can reduce information asymmetry and enable managers and investors to make more informed investment decisions. Accurate and transparent reporting appears to guide efficient allocation of resources, supporting optimal investment outcomes. The result aligns with prior studies emphasizing the role of financial reporting in enhancing corporate governance and decision-making effectiveness. It highlights the importance of maintaining rigorous accounting standards and disclosure practices for non-financial firms in Indonesia. Overall, strong reporting quality emerges as a key driver of investment efficiency in the studied context.

In contrast, ESG disclosure exhibits a negative and statistically significant effect on investment efficiency (coef. = -2.31; p = 0.05), supporting Hypothesis 2 (H2). This result suggests that firms' ESG activities, if not strategically integrated, may divert resources away from economically productive investments. Symbolic or excessive ESG engagement could increase costs without generating corresponding financial benefits, thereby reducing investment efficiency. The finding challenges the assumption that all sustainability initiatives automatically contribute positively to corporate performance. Moreover, all control variables, including financial slack, leverage, firm size, age, and profitability, are statistically insignificant (p > 0.05), indicating that these firm-specific factors do not materially affect investment efficiency in this sample. This emphasizes that reporting quality and ESG disclosure are more decisive determinants of investment behavior than traditional firm characteristics.

In synthesis, the study demonstrates a dual impact of corporate reporting practices on investment efficiency. High-quality financial reporting enhances efficiency by improving information transparency and managerial decision-making. Meanwhile, ESG disclosure, if misaligned or excessive, can negatively affect investment efficiency by reallocating resources from core economic activities. The insignificance of control variables reinforces the primacy of reporting and sustainability practices in shaping investment outcomes. These findings underscore the need for firms to balance ESG initiatives with strategic financial objectives. Ultimately, the results suggest that careful integration of reporting quality and ESG considerations is critical for optimizing investment efficiency in Indonesian non-financial firms.

The Effect of Financial Reporting Quality on Investment Efficiency

The analysis reveals that financial reporting quality (FRQ) positively influences investment efficiency, with a statistically significant effect ($p = 0.04$). Although the coefficient value rounds to 0.00, this should be interpreted as a small but meaningful positive association, indicating that incremental improvements in reporting quality correspond to better capital allocation. This supports the first hypothesis (H1) and aligns with previous findings by ([Firawan & Dewayanto, 2021](#); [Saputra & Wicaksono, 2022](#); [Shahzad et al., 2019](#); [Siregar & Nuryanah, 2019a](#)), which emphasize that transparent and reliable financial reports reduce information asymmetry and facilitate more efficient investment decisions. High-quality reporting provides investors with clear insights into firm performance, enabling informed decisions that improve overall investment outcomes.

From the agency theory perspective, high-quality financial information minimizes opportunistic managerial behavior by aligning the interests of managers and shareholders. Accurate and timely reports provide credible signals regarding management performance and firm prospects, reducing monitoring costs and enhancing capital market efficiency. Additionally, under signaling theory, credible financial disclosure strengthens investor confidence and lowers perceived risk, thereby optimizing investment allocation and firm value. These mechanisms highlight the critical role of FRQ in promoting corporate governance and ensuring resources are directed toward value-enhancing projects.

In summary, the findings demonstrate that financial reporting quality is a key determinant of investment efficiency, offering both practical and theoretical implications. By improving transparency and credibility, firms can reduce agency conflicts and support better investment decisions, consistent with agency and signaling theories. The results reinforce prior studies highlighting that even small enhancements in reporting quality contribute meaningfully to capital allocation. Consequently, policymakers and corporate managers should prioritize high-quality financial reporting to strengthen investment efficiency and firm value.

The Effect of ESG Disclosure on Investment Efficiency

he study finds that Environmental, Social, and Governance (ESG) disclosure negatively affects investment efficiency ($p = 0.05$). In the Indonesian context, where ESG reporting is largely voluntary and inconsistent across industries, higher disclosure levels may reduce operational focus and efficiency. Firms often engage in ESG activities to comply with social expectations rather than to enhance performance, which may lead to resource misallocation. This outcome aligns with legitimacy theory and stakeholder theory, emphasizing that symbolic ESG practices can divert managerial attention from core operational objectives (Lu, 2025; Gao et al., 2025).

Moreover, the negative relationship between ESG disclosure and investment efficiency reflects a broader issue of managerial priorities in emerging markets. Companies may prioritize public perception and compliance over strategic investment decisions, which limits the potential value creation of ESG initiatives. In such contexts, resources allocated to reporting and compliance could be better invested in projects that directly enhance productivity and profitability. These findings suggest that ESG disclosure alone, without substantive strategic integration, may inadvertently hinder operational effectiveness (Gao et al., 2022; Lu, 2025).

In synthesis, the evidence indicates that ESG disclosure in Indonesia may not automatically translate into improved investment efficiency. When ESG practices are primarily symbolic or compliance-driven, they risk diverting managerial focus and resources from operational priorities. Therefore, firms need to align ESG initiatives with strategic objectives to avoid inefficiency. Overall, the study highlights the importance of considering both the quality and strategic intent of ESG disclosure when evaluating its impact on investment performance (Gao et al., 2022; Lu, 2025).

Interpretation of Key Findings

The findings of this study affirm the presence of two interrelated mechanisms that influence *investment efficiency*: first, high-quality financial reporting mitigates *information asymmetry* and supports more reliable investment decision-making (Ardianto et al., 2020). Second, although ESG initiatives carry social value and legitimacy, disclosures that are merely symbolic or unsupported by institutional frameworks and verification mechanisms may create efficiency challenges by diverting managerial resources from core operational activities (Cahyono et al., 2024; Vo, 2020). These findings indicate that the effectiveness of sustainability initiatives depends on the maturity of institutional mechanisms including assurance practices and integrated reporting where firms that adopt ESG strategically and with proper verification tend to enhance operational performance, whereas purely compliance-driven reporting does not (Abiloro et al., 2025; Interpress, 2025). In synthesis, empirical evidence supports theoretical perspectives (agency, signaling, and legitimacy) suggesting that financial and non-financial transparency are complementary yet only disclosures that are strategically aligned and institutionally supported genuinely improve investment efficiency.

Comparison with Previous Studies

The positive relationship between financial reporting quality and investment efficiency is consistent with previous studies. These studies collectively highlight that reliable financial reports enhance monitoring by external stakeholders and reduce agency conflicts ([Firawan & Dewayanto, 2021](#); [Shahzad et al., 2019](#); [Siregar & Nuryanah, 2019b](#)). Similarly, ([Biddle et al., 2009](#)) suggest that high-quality financial reporting lowers estimation risks and the cost of capital, facilitating optimal investment decisions. These findings reinforce the critical role of financial transparency in supporting effective corporate governance. In contrast, the negative effect of ESG disclosure diverges from ([Kouaib, 2022](#)), who found a positive impact of ESG on investment efficiency in Saudi-listed firms. However, the results align with ([Gao et al., 2022](#); [Lu, 2025](#)), indicating that ESG initiatives can hinder efficiency when managerial attention and resources are diverted. This discrepancy may be explained by contextual differences: in mature ESG environments, sustainability practices are strategically integrated, while in emerging markets like Indonesia, ESG may be largely compliance-driven. Therefore, the impact of ESG disclosure on investment efficiency appears contingent upon institutional maturity and organizational readiness.

This study demonstrates that financial reporting quality consistently enhances investment efficiency across contexts, whereas the effect of ESG disclosure varies depending on institutional and organizational factors. Symbolic or compliance-focused ESG practices can inadvertently reduce efficiency, contrasting with environments where ESG is strategically embedded. These findings contribute to the literature by highlighting the conditional nature of ESG benefits and the importance of context in interpreting sustainability disclosures. Overall, investment efficiency depends on both the reliability of financial information and the strategic integration of ESG practices

Limitations and Cautions

Several limitations warrant caution. The use of Bloomberg ESG scores may not capture qualitative aspects of sustainability practices, and the sample of non-financial listed firms restricts generalizability. Furthermore, the study's reliance on secondary panel data allows for association but not causality. Future research should explore ESG assurance mechanisms and integrated reporting frameworks to assess how verified sustainability disclosures affect investment efficiency. Mixed-method approaches combining quantitative analysis with case-based insights could reveal contextual drivers behind the ESG–efficiency relationship. Comparative studies across ASEAN or between firms with and without ESG assurance could also clarify the institutional conditions under which ESG reporting contributes to both legitimacy and economic value.

Recommendations for Future Research

Several limitations of this study warrant careful consideration. First, the use of Bloomberg ESG scores may not fully capture the qualitative aspects of sustainability practices, potentially overlooking important nuances. Second, the focus on non-financial listed firms limits the

generalizability of the findings to other sectors or private companies. Additionally, the reliance on secondary panel data allows for identifying associations but does not establish causality. Future research should investigate ESG assurance mechanisms and integrated reporting frameworks to better understand how verified sustainability disclosures impact investment efficiency. Employing mixed-method approaches that combine quantitative analysis with case-based insights could uncover the contextual factors driving the ESG–efficiency relationship. Comparative studies across ASEAN countries or between firms with and without ESG assurance may provide further clarity on institutional conditions. These approaches would help determine under what circumstances ESG reporting enhances both legitimacy and economic value.

While this study offers valuable insights into the relationship between ESG disclosure and investment efficiency, its limitations highlight the need for cautious interpretation. Data constraints, sector focus, and methodological design restrict causal inference and generalizability. Addressing these limitations through future research on ESG assurance, mixed methods, and cross-context comparisons could strengthen understanding of how ESG practices influence corporate performance. Ultimately, careful attention to context and verification mechanisms is crucial for interpreting ESG's role in achieving both legitimacy and operational efficiency.

The limitations of the present study namely reliance on ESG scores from commercial providers, focus on non-financial listed firms, and use of secondary panel data call for more nuanced research examining how verified sustainability reporting and institutional assurance influence investment efficiency ([da Cunha et al., 2025](#); [Zheng, 2025](#)). Recent literature shows that the absence of standardized or mandatory ESG reporting frameworks reduces the credibility and comparability of disclosures, thereby weakening their impact on corporate performance ([Ali et al., 2025](#)). Empirical evidence further demonstrates that integrated reporting paired with strong ESG performance can enhance transparency and firm valuation, underscoring the need to investigate the moderating role of assurance and governance structures ([Halim et al., 2025](#)). Moreover, mixed-method studies indicate that organizational context, stakeholder pressures, and internal governance mechanisms shape how ESG information translates into operational or financial outcomes, suggesting that comparative and mixed-method designs will deepen understanding of the institutional conditions under which ESG reporting enhances both legitimacy and economic value ([Adardour et al., 2025](#); [Li, 2025](#)).

CONCLUSION

This study demonstrates that higher financial reporting quality enhances investment efficiency by reducing information asymmetry and enabling more rational capital allocation. Conversely, broader Environmental, Social, and Governance (ESG) disclosure is associated with lower investment efficiency, particularly when disclosure serves symbolic or compliance purposes rather than being strategically integrated into operations. These findings highlight a key tension between financial transparency and sustainability signaling in emerging markets such as Indonesia, where ESG frameworks remain largely voluntary and fragmented. Theoretically, the study contributes to the literature by integrating agency, signaling, legitimacy, and stakeholder theories to explain how both financial and non-financial disclosures shape corporate efficiency. Practically, the results

emphasize the need for Indonesian firms to strengthen the substantive integration of ESG initiatives with performance-driven strategies, ensuring that sustainability efforts complement rather than constrain investment decisions. While the study provides valuable insights, it is limited by the use of secondary ESG data, the exclusion of financial institutions, and the absence of sectoral differentiation. Future research should adopt sector-specific analyses to reflect Indonesia's diverse industrial landscape and evaluate how regulatory maturity influences the ESG–efficiency relationship.

For policymakers, the findings underscore the importance of establishing standardized, industry-relevant ESG reporting frameworks that are consistent with Indonesia's evolving regulatory environment. Clear guidelines and verification mechanisms can help ensure that sustainability disclosures are meaningful and comparable across firms. Firms should strategically align ESG programs with core operational objectives to balance legitimacy, stakeholder expectations, and profitability. This alignment reduces the risk of symbolic or compliance-driven initiatives that may divert managerial attention and resources. Meanwhile, investors are encouraged to assess the substantive quality of ESG performance, focusing on the effectiveness and strategic integration of initiatives rather than the sheer volume of disclosure. Ultimately, coordinated efforts by regulators, firms, and investors are essential to enhance both corporate transparency and investment efficiency.

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