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Financial Credit, Firm Size, and Their Implications for ESG Performance

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Abstract

This study investigates the influence of financial credit and firm size on Environmental, Social, and Governance (ESG) practices in infrastructure companies listed on the Indonesia Stock Exchange (IDX) from 2021 to 2024. A quantitative approach was applied using Partial Least Squares Structural Equation Modeling (SEM-PLS), with a sample of 20 companies selected through purposive sampling. The results indicate that financial credit has a significant positive effect on environmental and social performance but not on governance. Firm size significantly affects environmental and governance performance, while its effect on the social dimension is not significant. These findings highlight the differing contributions of financial credit and firm size to ESG practices and emphasize their strategic relevance in supporting corporate sustainability.

Keywords: Financial Credit, Firm Size, ESG

INTRODUCTION

Global efforts to mitigate environmental, social, and governance (ESG) risks have significantly reshaped the landscape of infrastructure financing. In this evolving context, access to credit financing and firm size have emerged as two critical variables in achieving meaningful sustainability. In Indonesia, the government's commitment to strengthening the sustainable finance ecosystem is reflected in several policy instruments, including the Sustainable Finance Roadmap and Green Taxonomy issued by the Financial Services Authority (OJK) for the period 2021–2025, as well as the ESG Framework for Public–Private Partnership (PPP) Schemes introduced by the Ministry of Finance. These initiatives aim to

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facilitate the allocation of credit to ESG-based infrastructure projects and are expected to attract approximately US$18.8 billion in investment by 2025 (ANTARA News, 2024)

The positive impact of ESG on financial flexibility has been documented in several empirical studies. For instance, (Yunica & Rokhim, 2023) found that ESG performance enhances the financial flexibility of Indonesian firms, although financial constraints were not shown to significantly mediate this relationship. Similarly, (Y. Li, 2025)provided evidence from Hong Kong that ESG factors significantly improve financial flexibility, with the exception of state-owned enterprises (SOEs), where governance structures differ substantially. Focusing specifically on Indonesia's infrastructure sector, (Ridwan & Alghifari, 2025) demonstrated that ESG performance significantly reduces financial risk. However, firms with higher operational efficiency and profitability were better equipped to manage such risks. In support of this, (Chen et al., 2023) found that ESG, when combined with strong governance practices, reinforces the financial stability of infrastructure firms, with governance exerting a more pronounced effect.

Nevertheless, the relationship between ESG, cost of debt, and governance remains contested. A cross-country study in Southeast Asia by (Aydoğmuş et al., 2022) found that while strong governance enhances sustainability performance, firms with high ESG scores often face higher borrowing costs highlighting an unresolved trade-off between sustainability and financial efficiency. Locally, (Alves & Meneses, 2024) reported that ESG risk ratings positively influence firm value (measured by Tobin's Q), although leverage and liquidity were not found to have significant effects.

The importance of ESG signals in facilitating access to credit is also underscored by (Minggu et al., 2023), who revealed that firms with higher ESG ratings tend to gain easier and more favorable financing, in line with signaling theory in financial literature. In the infrastructure arena, the role of ESG benchmarks such as GRESB which provides standardized ESG data for real assets like real estate and infrastructure has been increasingly recognized. GRESB scores have proven to be reliable predictors of fund-level financial returns; however, their adoption among Indonesian infrastructure firms remains limited (Yunica & Rokhim, 2023)

Finally, national policy developments are becoming increasingly relevant in the context of climate transition and green finance. Since 2011, Indonesia has mobilized over US$78 billion for climate change mitigation and adaptation efforts including through green sukuk yet significant challenges remain in terms of distribution and transparency.

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THEORETICAL REVIEW

Credit Financing

Access to external financing is a critical factor in sustaining and expanding corporate operations, particularly in capital-intensive sectors such as infrastructure. A company's ability to secure credit is often influenced by lenders' perceptions of risk, which increasingly encompass non-financial considerations such as sustainability performance. Wang and Yao (2024) found that publicly listed firms with stronger ESG practices tend to face fewer financing constraints. This is attributed to enhanced corporate transparency and accountability, which help mitigate asymmetric information risks a key concern for both investors and creditors. Similarly, (W. Li et al., 2024) emphasized that ESG significantly improves investment efficiency by reducing both under-investment and over-investment. ESG performance is interpreted by lenders as a positive signal of the firm's long-term risk management and governance capabilities. In another study, (Chen et al., 2023)analyzed Chinese firms and observed that higher ESG ratings are associated with lower financial barriers, as ESG directly contributes to building market trust and strengthening relationships with financial institutions.

However, the impact of ESG on credit access is not uniform across all firms. (Y. Li, 2025) pointed out that state-owned enterprises (SOEs) often experience a weaker ESG effect on financial flexibility due to limitations in governance structures and the rigidity of internal bureaucratic processes.

Firm Size

Firm size is frequently viewed as an indicator of internal capacity that enables companies to more effectively implement and report ESG policies. Larger firms typically possess superior human resources, organizational structures, and reporting systems, which position them better to meet sustainability expectations. (Dihardjo & Hersugondo, 2023) found that larger firms tend to disclose more environmental and social information compared to smaller firms, largely due to greater pressure from external stakeholders. This supports the notion that as firm size increases, so too do expectations for transparency and accountability in sustainability issues.

Nonetheless, recent studies reveal that the relationship between firm size and ESG performance is not always direct or statistically significant. For instance, (W. Li et al., 2024)), in their study of A-share firms in China, showed that the benefits of ESG in alleviating financing constraints were more evident among private companies than SOEs which are typically larger in size but operate with less flexible internal structures. Furthermore, (Song & Deng, 2023) suggested that firm size can either amplify or diminish the influence of ESG,

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depending on industry characteristics and regulatory environments. In this context, firm size does not inherently guarantee a strong sustainability commitment; rather, it acts as a contextual factor shaped by management strategies, stakeholder expectations, and market dynamics.

Environmental, Social, and Governance (ESG)

ESG has evolved into a strategic framework for financial and investment decision-making. It represents a firm's commitment to environmental stewardship, social responsibility, and sound corporate governance. A meta-analysis by (Amarna et al., 2024), which reviewed more than 2,000 academic studies, concluded that the majority reported a positive relationship between ESG performance and financial outcomes, across both emerging and developed markets. This reinforces the argument that ESG is not merely a reputational tool but a fundamental indicator used by investors and creditors to assess corporate risks and future prospects in a holistic manner.

Recent studies further confirm ESG's role in improving capital allocation efficiency. For example, (W. Li et al., 2024) demonstrated that ESG practices help firms optimize their capital structure by reducing risks of both over- and under-investment, largely through improved investor confidence and better access to credit. This impact is particularly evident in sectors under high environmental scrutiny, such as energy and infrastructure. Nonetheless, scholars have also cautioned against potential ESG-related biases, such as greenwashing, which can distort the true assessment of a firm's sustainability practices. Therefore, the accuracy of ESG disclosures and the effectiveness of their implementation are crucial factors in evaluating a firm's value and future financing opportunities.

METHOD

This study adopts a quantitative approach with the objective of examining the influence of credit financing and firm size on ESG practices among infrastructure companies listed on the Indonesia Stock Exchange (IDX) during the period 2021–2024. The sample was selected using a purposive sampling technique, based on the following criteria: (1) companies must be actively operating during the observation period, (2) they must publish either an annual report or a sustainability report, and (3) they must provide complete data related to the research variables. A total of 20 companies were included in the final sample, deemed sufficient for the selected analytical method, namely Partial Least Squares Structural Equation Modeling (PLS-SEM).

Variable measurement was conducted using relevant quantitative indicators.

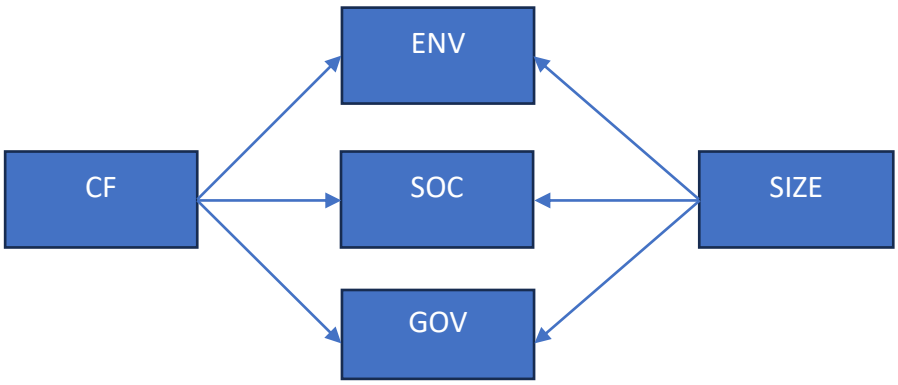
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1. Credit financing was measured through leverage ratios, specifically the Debt-to-Equity Ratio (DER) and Debt Ratio (DR).
2. Firm size was proxied using the natural logarithm of total assets.
3. ESG was treated as a latent construct, composed of three dimensions: environmental, social, and governance, derived from disclosures in sustainability reports.

Data analysis was performed using SmartPLS software, following the standard stages of evaluating the measurement model (outer model) and the structural model (inner model). The significance of the relationships was tested using the bootstrapping technique. Model evaluation was based on the values of R^2, Average Variance Extracted (AVE), composite reliability, and Standardized Root Mean Square Residual (SRMR) as indicators of the model's overall adequacy.

Figure 1. Conceptual Model Framework



RESULTS

Table 1. Convergent Validity (AVE > 0.5)

Construct	AVE	Status
CF	0.68	Valid
SIZE	1.00	Valid
ENV	0.71	Valid
SOC	0.66	Valid

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GOV	0.69	Valid

All constructs meet the threshold of AVE > 0.5, indicating that convergent validity is satisfied.

Table 2. Reliability (Cronbach's Alpha & Composite Reliability)

Construct	Cronbach's Alpha	Composite Reliability	Status
CF	0.75	0.86	Reliable
SIZE	1.00	1.00	Reliable
ENV	0.88	0.91	Reliable
SOC	0.84	0.88	Reliable
GOV	0.85	0.89	Reliable

All constructs demonstrate strong internal consistency, as indicated by both Cronbach's Alpha and Composite Reliability values exceeding the 0.7 threshold.

Table 3. Path Coefficients

Hypothesis	Path	p-Value	Result
H1	CF → ENV	0.033	Significant
H2	CF → SOC	0.004	Significant
H3	CF → GOV	0.295	Not significant
H4	SIZE → ENV	0.006	Significant
H5	SIZE → SOC	0.170	Not significant
H6	SIZE → GOV	0.011	Significant

DISCUSSION

Credit Financing (CF) and Environmental Performance (ENV)

The results indicate that stronger financial structures as reflected in optimal leverage ratios positively impact environmental performance. Firms with healthy access to financing are better positioned to invest in environmental initiatives such as energy efficiency, waste

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management, and green technologies. These findings align with (Cheng et al., 2014), who emphasized the importance of capital availability in supporting sustainability programs. (Khan et al., 2016) also found that financially sound firms are more likely to engage in proactive environmental policies. Similarly, (Husted & Allen, 2007) highlighted the role of financial support in enabling environmental and social efforts. From a stakeholder theory perspective, sufficient financial resources allow firms to respond to growing environmental expectations. Meanwhile, legitimacy theory suggests that firms with sound financial standing are more motivated to demonstrate compliance with environmental norms to maintain their public image.

Credit Financing (CF) and Social Performance (SOC)

The positive relationship between CF and SOC implies that firms with greater financial capacity are better able to fulfill social responsibilities, such as community development, employee welfare, and social contributions. This is supported by (Husted & Allen, 2007)), who found that access to funding influences the scale and consistency of CSR programs. Similarly, (Brammer & Pavelin, 2006) and (Garcia et al., 2017)noted that a firm's financial condition affects the extent of attention given to social issues. These findings reinforce stakeholder theory, which posits that companies are accountable to all stakeholders including employees and the community who are directly related to the social dimension. The implication is that managing financial structures affects not only corporate stability but also enhances a firm's ability to contribute meaningfully to society.

Credit Financing (CF) and Corporate Governance (GOV)

Unlike the environmental and social dimensions, the influence of credit financing on corporate governance was not statistically significant. This suggests that governance quality is less dependent on financing conditions and more influenced by structural factors such as ownership, regulatory frameworks, and organizational culture. This finding is consistent with (Michelon & Parbonetti, 2012), (Cheng et al., 2014), and (Dihardjo & Hersugondo, 2023)), who argue that governance is shaped more by board composition, ownership structure, and institutional settings than by financial leverage. From a legitimacy theory perspective, firms do not necessarily use governance as a signal driven by financial capability but rather as a function of regulatory compliance and internal norms. Thus, improving governance performance requires structural reform and institutional commitment beyond financial capacity.

Firm Size (SIZE) and Environmental Performance (ENV)

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The findings confirm that larger firms tend to perform better environmentally. These firms generally possess more resources, access to technology, and public scrutiny, which collectively encourage stronger environmental initiatives. Studies by (Clarkson et al., 2008), (Y. Li, 2025)), and (Velte, 2017)support this view, indicating that large companies disclose more environmental information as part of their risk management and strategic positioning. This aligns with legitimacy theory, suggesting that large firms, due to higher public exposure, are more likely to comply with environmental standards. In practice, firm size plays a vital role in driving environmental leadership, and regulators should consider offering tailored support to small and medium-sized enterprises (SMEs) to avoid sustainability gaps.

Firm Size (SIZE) and Social Performance (SOC)

The results indicate that firm size does not significantly affect social performance. In the context of Indonesia's infrastructure sector, social programs often remain peripheral and are not necessarily scaled with company size. This contrasts with findings by (Husted & De Jesus Salazar, 2006) and (Amarna et al., 2024), who suggested that larger firms are more likely to engage in CSR due to external pressure. However, (Hermawan et al., 2023) found that large companies in Indonesia often undertake symbolic rather than strategic social actions. From a stakeholder theory perspective, firms may not yet perceive social concerns as a priority demand from their stakeholders, thus limiting the level of investment. Practically, this calls for greater awareness among large firms to embed social responsibility into their core strategy, rather than treating it as an externality.

Firm Size (SIZE) and Corporate Governance (GOV)

The study finds that larger companies exhibit stronger corporate governance practices. This is plausible given that larger firms generally operate within more complex organizational structures and face stricter regulatory requirements, which incentivize the development of formal governance systems. This result is consistent with (Wahba & Elsayed, 2015), (Brammer & Pavelin, 2006), and (Velte, 2017)), who concluded that larger firms tend to adopt more structured governance frameworks due to internal coordination needs and stakeholder expectations. According to legitimacy theory, large firms are under greater pressure to maintain transparency and public trust, which reinforces the need for sound governance practices. This highlights the broader responsibility of large firms to uphold integrity, while suggesting that regulators could encourage smaller firms to gradually adopt similar governance standards.

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CONCLUSION

This study reveals that credit financing significantly enhances both environmental and social performance, but has no significant effect on corporate governance. Conversely, firm size significantly influences environmental and governance performance, but does not significantly affect the social dimension. These findings underscore the importance of financial condition and firm scale in driving various aspects of ESG, although their impacts differ across the three dimensions. The results support both stakeholder theory and legitimacy theory, highlighting the strategic role of financial and organizational characteristics in sustainability performance. Furthermore, the study emphasizes the need for a more targeted and strategic approach, especially in enhancing social performance, which appears to be less consistently influenced by structural factors.

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