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The effect of environmental disclosure on bankruptcy risk: Evidence from companies listed on the Indonesia Stock Exchange

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Abstract

The purpose of this study is to examine the effect of environmental disclosure on bankruptcy risk of listed firms in the Indonesia Stock Exchange in the year 2022-2024. The data comprises firms composed from 2022 to 2024 for the non-financial sector companies listed on the BEI. There are 57 companies and 171 data that fall into the criteria based on the purposive sampling method. Multiple Regression Analysis as data analysis techniques used SPSS software (version 21.0). Environmental disclosure (ED) as an independent variable is measured by the environmental disclosure score provided by Bloomberg in this reasearch. Bankruptcy risk (BR) is dependent variable is measured by Altman Z-score, and Size as control variable. The empirical results shows that environmental disclosure (ED) has a significant negative effect on bankruptcy risk (BR). This study offers originality by examining how environmental disclosure, rather than broader ESG or environmental performance indicators, influences bankruptcy risk among publicly listed firms in Indonesia. While prior research has predominantly focused on ESG scores, financial ratios, or environmental performance metrics, very few studies have specifically investigated environmental disclosure transparency as a determinant of corporate financial distress in an emerging market setting. By using firm-level environmental disclosure scores and integrating them with bankruptcy prediction models, this study provides new empirical evidence on whether transparent environmental reporting can serve as a protective factor against bankruptcy risk in the Indonesian capital market.

Keywords: environmental score, ESG, bankruptcy risk, Altman Z-score

INTRODUCTION

Given the worsening condition of global environmental protection, it has become crucial to steer corporate green transformation efforts toward reducing negative ecological impacts. The decarbonization of both production and consumption, coupled with the pursuit of economic growth and ecological balance, constitutes the core of this transformation. Achieving this requires not only technological innovation but also improvements in governance practices and market competitiveness. By implementing environmentally friendly technologies, firms demonstrate their dedication to sustainability, which in turn strengthens investor trust and enhances their market image (Li, Qin, & He, 2023).

Nevertheless, this transition presents various risks and obstacles. Organizations must adapt their internal systems—covering production processes, operational mechanisms, and financial frameworks—while simultaneously responding to external challenges such as economic volatility, regulatory adjustments, and shifting consumer demands. In certain cases, companies may resort to greenwashing, exaggerating their environmental performance without genuine improvement, thereby misleading stakeholders about the true benefits of green transformation (Adamkiewicz et al., 2022; Zhang, 2022). Poor management of this process can result in severe financial instability, losses for investors, and workforce reductions, potentially causing a cascading "domino effect" across supply chains, particularly in large manufacturing economies. Therefore, striking a balance between ecological

sustainability and economic resilience remains a critical challenge, as firms must effectively mitigate the bankruptcy risks associated with green initiatives

Corporate sustainability has become an increasingly central issue in modern financial and management research as global economies face growing environmental and social challenges. The shift toward sustainable business practices reflects a broader understanding that long-term corporate success is inseparable from environmental responsibility. In this context, the *Environmental Score*—as a component of Environmental, Social, and Governance (ESG) performance—serves as a critical measure of how effectively firms manage their environmental impacts, including carbon emissions, waste management, energy efficiency, and resource conservation. This measure not only captures a company's ecological footprint but also signals its strategic adaptation to evolving environmental regulations and stakeholder expectations.

The relationship between environmental performance and corporate financial outcomes has been widely debated in the literature. Some studies suggest that higher environmental performance enhances firm value and reduces financial risk by improving reputation, operational efficiency, and investor confidence (Friede, Busch, & Bassen, 2015; Broadstock et al., 2021). From this perspective, environmentally responsible firms are believed to be more resilient and less likely to experience financial distress or bankruptcy. Conversely, other scholars argue that strong environmental initiatives may impose additional costs on firms—particularly in developing economies—thereby constraining profitability and increasing the likelihood of financial difficulties (Li et al., 2024). These diverging perspectives indicate that the nexus between environmental performance and bankruptcy risk remains inconclusive and context-dependent.

Bankruptcy risk is a critical indicator of financial stability, reflecting a firm's ability to meet its obligations and sustain operations amid economic uncertainties. Traditional models such as Altman's Z-Score and Ohlson's O-Score have long been employed to predict bankruptcy, focusing primarily on financial ratios and market indicators. However, recent research has called for the integration of non-financial factors—such as ESG dimensions—into bankruptcy prediction models (Boubaker et al., 2020; Alda, 2023). The inclusion of the environmental dimension is particularly relevant in light of rising environmental regulations, carbon pricing mechanisms, and stakeholder pressure for sustainable practices. Despite this growing global attention, empirical evidence from emerging markets, especially Indonesia, remains scarce.

Indonesia presents a unique setting for this inquiry due to its resource-intensive industries, evolving environmental regulations, and increasing adoption of sustainability reporting standards following the Financial Services Authority (OJK) Regulation No. 51/POJK.03/2017. As more firms disclose environmental performance through sustainability reports and Bloomberg ESG databases, the question of whether environmental efforts contribute to financial resilience becomes increasingly pertinent. Yet, limited empirical studies have examined how environmental performance relates specifically to bankruptcy risk in the Indonesian capital market context.

The development of the Environmental, Social, and Governance (ESG) concept reflects the growing attention of the business world to sustainable practices and responsible governance. In Indonesia, ESG implementation is increasingly emphasized by the Financial Services Authority (OJK) through the Sustainable Finance Roadmap and by the IDX, which has mandated Sustainability Reporting for certain issuers since 2021. In this context, ESG is not only a reputational tool but also a fundamental factor that can influence a company's financial performance and bankruptcy risk. Companies with a strong ESG commitment generally have better governance, higher operational efficiency, and more positive relationships with stakeholders, potentially reducing the risk of financial failure. In the Indonesian context, research on the effect of environmental disclosure on bankruptcy risk is still limited, particularly using environmental disclosure scores based on international standards (Bloomberg, Refinitiv, or IDX Sustainability Disclosure). This opens up new empirical space.

The novelty in this research are First, it points to a specific and interesting research direction, particularly because it links environmental factors (the E in ESG) to corporate bankruptcy risk, a relatively new topic in the context of emerging markets like Indonesia. Most previous literature originates from developed countries (the US, Europe, Japan, and Korea), where environmental

regulations are already mature. This study examines this relationship in Indonesia, a country with still-developing ESG regulations, thus providing new insights into how environmental performance impacts corporate survival in emerging markets. Second, it focuses solely on the Environmental Disclosure Score. Most previous studies use the ESG Score as a whole, without separating the influence of the environmental dimension from social and governance aspects. This study focuses solely on the Environmental Score, providing a more specific understanding of how corporate environmentally friendly practices can reduce bankruptcy risk.

Therefore, this study aims to investigate the effect of Environmental Disclosure on bankruptcy risk among companies listed on the Indonesia Stock Exchange (IDX). Drawing upon stakeholder and legitimacy theory, this research hypothesizes that firms with higher environmental performance are less likely to experience bankruptcy risk, as strong environmental management may enhance long-term financial stability and stakeholder trust. By providing evidence from an emerging market, this study contributes to the ongoing debate on the financial implications of corporate environmental responsibility and extends the literature on ESG–financial distress relationships. The findings are expected to offer valuable insights for investors, policymakers, and corporate decision-makers in balancing environmental commitments with financial sustainability.

LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

Stakeholder Theory

According to Stakeholder Theory (Freeman, 1984), firms must take into account the interests of various stakeholders, including governments, communities, investors, and environmental institutions. High-quality environmental disclosure signals that a company operates responsibly and transparently, which helps strengthen stakeholder relationships and reduces both reputational and financial risks.

Legitimacy Theory

Legitimacy Theory asserts that companies seek to obtain social approval by demonstrating that their activities align with societal values, norms, and expectations (Suchman, 1995). Environmental disclosure serves as a legitimacy mechanism, allowing companies to show compliance with environmental norms. Firms that fail to disclose environmental information may be perceived as having higher environmental risk, which can negatively affect risk assessments by investors and creditors.

Environmental Disclosure and Bankruptcy Risk

The Environmental Disclosure Score as a component of Environmental, Social, and Governance (ESG) performance serves as a critical measure of how effectively firms manage their environmental impacts, including carbon emissions, waste management, energy efficiency, and resource conservation. This measure not only captures a company's ecological footprint but also signals its strategic adaptation to evolving environmental regulations and stakeholder expectations.The environmental disclosure score measures a company's transparency in reporting its environmental activities, policies, and impacts. A higher score indicates that the firm implements better environmental management practices (Luo et al., 2020). The effect of environmental disclosure on reducing bankruptcy risk can be explained through several mechanisms: The fisrt, reduction of Operating and Environmental Risk. Companies that effectively manage environmental risks tend to have more stable operating costs and avoid potential fines, litigation, or environmental accidents, thereby reducing the likelihood of financial distress. The second, Increased Investor Confidence. A high level of environmental disclosure sends a positive signal to investors and creditors, improving their perception of the firm's risk profile and enhancing the company's ability to obtain financing. The third, improved Corporate Reputation and Market Performance. Environmentally responsible firms generally have a stronger reputation, which contributes to more stable stock prices and better financial health.

Various prior studies show that environmental performance and environmental disclosure affect a firm's bankruptcy risk. Clarkson et al. (2008) found that environmental disclosure enhances transparency and strengthens investor trust. Plumlee et al. (2015) stated that high-quality

environmental disclosure is associated with improved market performance and lower cost of capital. Luo et al. (2020) demonstrated that environmental disclosure reduces information asymmetry and improves firms' access to financing. Kim, Park, & Wier (2021) showed that companies with better sustainability practices have a lower risk of financial distress. Jia et al. (2022)found that firms with higher ESG scores tend to have a lower likelihood of bankruptcy, although most studies use overall ESG scores and have not separated the environmental dimension specifically.

Legitimacy Theory posits that an organization's continued existence depends on its capacity to secure and preserve approval from the broader society. Legitimacy refers to society's perception that a company's behavior aligns with prevailing values, norms, beliefs, and expectations within its social environment (Rendtorff, 2019). Consequently, companies are expected not only to achieve financial performance but also to show adherence to social, environmental, and ethical standards to maintain societal acceptance. In this context, the disclosure of non-financial information such as Environmental, Social, and Governance (ESG) reporting functions as a strategic mechanism for enhancing legitimacy, fostering stakeholder confidence, and supporting long-term organizational sustainability (Moussa et al., 2024). Legitimacy Theory argues that companies disclose environmental information as a means to maintain or regain societal legitimacy. By communicating their environmental accountability, firms signal compliance with prevailing social norms and expectations (Rendtorff, 2019). Such legitimacy helps secure continued access to resources, lowers reputational risk, and supports long-term financial sustainability.

According to Stakeholder Theory: Concern for stakeholders (environmental, social, governance) reduces conflict and increases operational efficiency. Implementing environmentally friendly technologies can enhance a firm's financial performance by cutting energy use, minimizing resource inefficiencies, and reducing pollution-related expenses. These improvements lower production costs, ease financial pressures, and ultimately boost profitability (Feng et al., 2024; Lei et al., 2024). At the same time, greater transparency in disclosure practices can reduce financing costs and provide immediate financial benefits (Dhaliwal et al., 2014; Fatemi et al., 2017). Additionally, pursuing green transformation strengthens corporate reputation (Flammer, 2021). As a visible form of social responsibility, such transformation has a substantial impact on a company's market valuation and stock prices often resulting in a "green premium" (Plumlee et al., 2015; Yadav et al., 2016). Beyond attracting investor attention and shaping their monitoring activities (Oikonomou et al., 2014; Tang & Zhang, 2020), it also generates feedback mechanisms that influence a firm's environmental performance (Dhaliwal et al., 2011; Sarfraz et al., 2020). Ultimately, by strengthening environmental risk management, companies can improve their overall risk control, reduce stock price volatility and the cost of equity capital, and enhance performance while mitigating financing constraints (Sassen et al., 2016).

Recent research further strengthens the link between ESG performance and various firm risk indicators. Meneses Cerón et al. (2025) and Zhang and Li (2023) show that companies with high ESG scores experience a reduced risk of default and lower funding costs. Findings by Song et al. (2024) confirm that ESG can act as a buffer against financial stress during macroeconomic downturns. Furthermore, Fatemi et al. (2017) demonstrate that robust ESG implementation in developing countries is associated with a lower likelihood of bankruptcy.

Conceptually, ESG extends past conventional financial metrics by integrating non-financial dimensions that matter to stakeholders—such as emission control and waste handling (environmental), employment conditions and community involvement (social), and governance structures along with transparency in reporting (governance). ESG disclosures, whether presented through sustainability reports, index ratings, or measures aligned with frameworks like the GRI, function as a medium through which firms convey their commitments and non-financial achievements to investors, regulators, and the wider public (Shaikh, 2021).

ESG has three main components, namely environmental, social and governance. Companies that operate with environmentally friendly practices (e.g., lowering carbon emissions, managing waste well) tend to reduce the risk of environmental liability and legal sanctions. From the creditor's perspective, this lowers the potential for unexpected costs in the future. Furthermore, on the social

aspect. Issues of employee welfare, occupational safety, and social responsibility affect operational stability. Companies that maintain good relations with employees and the surrounding community typically experience less turmoil (e.g. strikes, social conflicts). This stability increases creditors' confidence that the company's cash flow will be more secure. Finally, in the aspect of governance. Good governance (reporting transparency, management accountability, protection of minority shareholders, etc.) reduces agency risk and fraud. If the company's governance is strong, creditors will feel safer disbursing funds and assess the default risk as lower (Fu et al., 2021)

From the theoretical aspect, Stakeholder theory states that companies do not operate in a vacuum, but rather must consider the interests of various stakeholders such as employees, communities, suppliers and governments (Freeman et al., 2010). By meeting stakeholders' expectations in terms of ESG, companies can reduce conflicts and increase social support. Creditors assess this broad support as reducing business risk, so that debt costs can be reduced.

Environmental disclosure reflects a company's commitment to managing its environmental impacts through transparent reporting of policies, activities, and performance. According to Stakeholder Theory, firms are expected to address the informational needs of various stakeholders—including investors, creditors, regulators, and the public—by demonstrating responsible environmental practices. Higher levels of environmental disclosure reduce information asymmetry, enhance investor confidence, and strengthen relationships with key stakeholders, thereby improving financial stability (Freeman, 1984).

Empirical evidence further supports this linkage. Prior studies show that environmental disclosure enhances transparency and reduces uncertainty, leading to lower financing costs and reduced bankruptcy risk (Clarkson et al., 2008; Plumlee et al., 2015; Luo et al., 2020). Other research indicates that firms with stronger environmental and sustainability practices exhibit lower probabilities of financial distress and default (Kim et al., 2021; Jia et al., 2022)).

Based on these theories and empirical findings, it can be concluded that environmental disclosure is one of the factors that can reduce the likelihood of a company experiencing bankruptcy risk. Environmental disclosure has a negative impact on bankruptcy risk, meaning the higher the environmental disclosure score, the lower the bankruptcy risk. Thus, the hypothesis of this research is as follows:

H1: Environmental disclosure score has a negative effect on bankruptcy risk.

METHODS

To obtained data, this study from BEI that is non-financial sector companies listed in Indonesia at 2022-2024. There are 855 non-financial firms listed in BEI in 2024, included in criteria is 222 outlier data. To obtains the total sample of 57 companies and 171 data that fall into the criteria based on the purposive sampling use. The set of data consist of 171 observed companies are obtained 2022 to 2024. The criteria of purposive sampling are:

1. The company was listed on the Indonesia Stock Exchange (IDX) between 2022 and 2024.
2. Included in non-financial sector. Financial sector are excluded because financial sector companies (banks, insurance, securities) have different regulations, financial reporting structures, and risks, and therefore are frequently issued.
3. The company published an annual report or sustainability report. Companies are required to have a complete annual report or sustainability report throughout the study period because environmental disclosure data is usually obtained from the sustainability report or the CSR/ESG section of the annual report.
4. The company has Environmental Disclosure Score available data in Bloomberg database.
5. The company has complete data to calculate bankruptcy risk (Altman Z-score).

To examine the effects of more than one independent variables on the dependent variables using multiple linear regression. The multiple regression analysis method was chosen because it was used to test the effect Environmental disclosure, size on bankruptcy risk.

Variable measurement

The Independent variables used in this study are Environmental Disclosure (ED). To avoid research bias, the control variable used is SIZE, which is measured by ln (Total Assets). In the measurement Environmental Disclosure value used comes from secondary data in the form of an environmental disclosure score provided by Bloomberg. The indicators are compiled to assess the extent to which the company's management pays attention to the quality of environmental aspects in operating the company.

Environmental Disclosure (ED) is proxied by the Environmental Disclosure score assigned to each firm, capturing the extent to which companies integrate environmental, aspects into their operations and reporting. Environmental Disclosure (ED) is taken from Bloomberg. Scale: 0–100 (the higher the score, the better the quality of environmental disclosure). Environmental Disclosure (ED) is Reflects a company's transparency in disclosing: carbon emissions, energy use, waste & water, environmental policies, regulatory compliance, environmental risk management.

Altman Z-score is used as gauge of bankruptcy risk (BR). Developed in 1968 and over the past 20 years as an accurate measurement considered one or other to predicting the health of companies and for manufacturing firms used to measure the distance to default. As multiple discriminant analysis, Altman Z-score merge the five ratios is profitability, leverage, liquidity, solvency, and activities (Cooper & Uzun, 2019). Altman Z-score consists of three critical value interpretations (Altman, 1968). Z is classified as bankruptcy area if the value less than or equal to 1.81, Z is classified as too healthy if the value is greater than or equal to 2.99, Z is classified as grey area and will experience the possibility of bankruptcy if the value is between 1.81 and 2.99. The greater Z score, the greater the financial strength of the company.

The following is the formula for calculating BR (Li, Qin, & He, 2025):

$$Z = 1.2\ X1+1.4\ X2+3.3\ X3+0.6\ X4+0.999\ X5 \quad (1)$$

Where, X1 calculated by working capital divided by total assets, X2 calculated by retained earnings divided by total assets, X3 calculated by earnings before interest and taxes (EBIT) divided by total assets, X4 calculated by the market value of equity divided by total debt, X5 calculated by annual sales divided by total assets.

RESULT AND DISCUSSION

Need to be sure that the regression model used as the best model, it is necessary to test the classic assumptions, related to normality, multicollinearity, heteroscedasticity and autocorrelation. If the test of classic assumptions are not met it will cause bias in the research results. After fulfilling the classic assumption test, the next testing is carried out coefficient of determination, F test, and t test.

Table 1. Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
X	171	2,02	78,41	39,2678	17,08679
Y	171	,08	10,98	3,2120	2,38209
SIZE	171	23,46	32,09	29,3769	1,53982

Table 2. Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	,281a	,179	,168	,57098	1,008
a. Predictors: (Constant), ED, SIZE					
b. Dependent Variable: BR					

Table 3. ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	4,689	2	2,345	14,192	,001[b]
	Residual	54,772	168	,326		
	Total	59,461	170			
a. Dependent Variable: BR						
b. Predictors: (Constant), ED, SIZE						

Table 4. Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	4,436	,853		5,200	,000		
	SIZE	-,178	,128	-,202	-2,728	,007	1,000	1,000
	ED	-,176	,129	-,192	-2,596	,010	1,000	1,000
a. Dependent Variable: BR								

Table 3 show simultaneous regression test (F-test) in the regression equation model used is a fit model so that it can be used to predict the risk of bankruptcy. The value of calculated F is 14,192 significant at 0.001, is smaller than 0.05. This means with 95% confidence level, Environmental Disclosure and size simultaneously influence bankruptcy risk (BR). Table 4 show that no multicollinearity problem. Multicollinearity test, aim to observing is there a large correlation in the multiple linear regression model. Therefore, to find out in this test the VIF value is used. No multicollinearity problem if the value of VIF smaller than 10. Based multicollinearity test, value of VIF of each variable is smaller than 10, and the tolerance show that regression free from multicollinearity. The other classical assumption test are met.

Based on Table 2, Determination coefficient test it is a tool used in order to calculate the capability of the model that has been made when interpreting the dependent variable. It should be understood that the coefficient value consists of 0 to 1. The better the accuracy if the value of R2 ($0 \leq R2 \leq 1$) is getting bigger. Known R-square or coefficient determination is 0,179 or 17.9%. This shows that 17.9% of Bankruptcy Risk (BR) is be affected with independent variables (Environmental Disclosure/ED). For the rest 82.1% explained with other factors besides outside in this model study. Hypothesis testing criterias, if greater t count than t table or significant value is under 0.05 then reject H0 and accept Ha, it means independent variables have significant effect to the dependent variable.

Table 4 represent the results regression of Environmental Disclosure and SIZE on bankruptcy risk (BR). The Environmental Disclosure (ED) variable, has a negative beta coefficient of -0.176 and significant value of 0.010, below 0.05. Can be concluded that the Environmental Disclosure (ED) have negative effect significantly to bankruptcy risk (BR), therefore hypothesis 1 is accepted. Can be concluded that the Environmental Disclosure (ED) have negative effect significantly to bankruptcy risk (BR). The control variable-SIZE has a negative beta coefficient of -0.178 and significant value of 0.007, below 0.05. Larger companies have stronger financial stability. Larger companies typically have more stable cash flows, a more diversified revenue base, and greater cash reserves to withstand financial stress. This makes larger companies more resilient in adverse situations, reducing the risk of bankruptcy (Ohlson, 1980).

Clarkson et al. (2008) found that environmental disclosure enhances transparency and strengthens investor trust. Plumlee et al. (2015) stated that high-quality environmental disclosure is associated with improved market performance and lower cost of capital. Luo et al. (2020)

demonstrated that environmental disclosure reduces information asymmetry and improves firms' access to financing. Kim, Park, & Wier (2021) showed that companies with better sustainability practices have a lower risk of financial distress. Jia et al. (2022) found that firms with higher ESG scores tend to have a lower likelihood of bankruptcy. The environmental disclosure score measures a company's transparency in reporting its environmental activities, policies, and impacts. A higher score indicates that the firm implements better environmental management practices (Luo et al., 2020). The effect of environmental disclosure on reducing bankruptcy risk can be explained through reduction of Operating and Environmental Risk. Companies that effectively manage environmental risks tend to have more stable operating costs and avoid potential fines, litigation, or environmental accidents, thereby reducing the likelihood of financial distress.

Legitimacy Theory posits that an organization's continued existence depends on its capacity to secure and preserve approval from the broader society. Legitimacy refers to society's perception that a company's behavior aligns with prevailing values, norms, beliefs, and expectations within its social environment (Rendtorff, 2019). Consequently, companies are expected not only to achieve financial performance but also to show adherence to social, environmental, and ethical standards to maintain societal acceptance. In this context, the disclosure of non-financial information—such as Environmental, Social, and Governance (ESG) reporting—functions as a strategic mechanism for enhancing legitimacy, fostering stakeholder confidence, and supporting long-term organizational sustainability (Moussa et al., 2024).

According to Stakeholder Theory: Concern for stakeholders (environmental, social, governance) reduces conflict and increases operational efficiency. Implementing environmentally friendly technologies can enhance a firm's financial performance by cutting energy use, minimizing resource inefficiencies, and reducing pollution-related expenses. These improvements lower production costs, ease financial pressures, and ultimately boost profitability (Feng et al., 2024; Lei et al., 2024). At the same time, greater transparency in disclosure practices can reduce financing costs and provide immediate financial benefits (Dhaliwal et al., 2014; Fatemi et al., 2017). Additionally, pursuing green transformation strengthens corporate reputation (Flammer, 2021). As a visible form of social responsibility, such transformation has a substantial impact on a company's market valuation and stock prices, often resulting in a "green premium" (Plumlee et al., 2015; Yadav et al., 2016). Beyond attracting investor attention and shaping their monitoring activities (Oikonomou et al., 2014; Tang & Zhang, 2020), it also generates feedback mechanisms that influence a firm's environmental performance (Dhaliwal et al., 2011; Sarfraz et al., 2020). Ultimately, by strengthening environmental risk management, companies can improve their overall risk control, reduce stock price volatility and the cost of equity capital, and enhance performance while mitigating financing constraints (Sassen et al., 2016). Meneses Cerón et al. (2025) and Zhang and Li (2023) show that companies with high ESG scores experience a reduced risk of default and lower funding costs. Fatemi et al. (2017) demonstrate that robust ESG implementation in developing countries is associated with a lower likelihood of bankruptcy. Conceptually, ESG extends past conventional financial metrics by integrating non-financial dimensions that matter to stakeholders—such as emission control and waste handling (environmental). Companies that operate with environmentally friendly practices (e.g., lowering carbon emissions, managing waste well) tend to reduce the risk of environmental liability and legal sanctions. From the creditor's perspective, this lowers the potential for unexpected costs in the future.

Environmental disclosure reflects a company's commitment to managing its environmental impacts through transparent reporting of policies, activities, and performance. According to Stakeholder Theory, firms are expected to address the informational needs of various stakeholders—including investors, creditors, regulators, and the public—by demonstrating responsible environmental practices. Higher levels of environmental disclosure reduce information asymmetry, enhance investor confidence, and strengthen relationships with key stakeholders, thereby improving financial stability (Freeman, 1984).

Meanwhile, Legitimacy Theory argues that companies disclose environmental information as a means to maintain or regain societal legitimacy. By communicating their environmental accountability, firms signal compliance with prevailing social norms and expectations (Rendtorff,

2019). Such legitimacy helps secure continued access to resources, lowers reputational risk, and supports long-term financial sustainability.

Empirical evidence further supports this linkage. Prior studies show that environmental disclosure enhances transparency and reduces uncertainty, leading to lower financing costs and reduced bankruptcy risk (Clarkson et al., 2008; Plumlee et al., 2015; Luo et al., 2020). Other research indicates that firms with stronger environmental and sustainability practices exhibit lower probabilities of financial distress and default (Kim et al., 2021; Jia et al., 2022).

CONCLUSION

The study purpose examines the effect of Environmental disclosure on bankruptcy risk of listed firms in Indonesia Stock Exchange in year 2022-2024. The examine show that there is negative significant effect Environmental disclosure on bankruptcy risk.

Several implications of the research findings for theory is this study contributes to the existing literature on environmental disclosure and corporate financial risk by providing empirical evidence from an emerging market context, namely Indonesia. The findings reinforce both Stakeholder Theory and Legitimacy Theory, which posit that firms benefit from demonstrating accountability and transparency regarding their environmental practices. management and investors. The negative relationship between environmental disclosure and bankruptcy risk suggests that transparent environmental reporting enhances stakeholder trust, reduces information asymmetry, and improves access to financial resources. The results show that environmental disclosure acts as a legitimacy-seeking mechanism. Companies that communicate their environmental efforts are perceived as more responsible and thus face reduced reputational risk and financial distress. Most previous studies have focused on overall ESG scores or data from developed countries. This study extends the literature by isolating the environmental component and examining its impact in a developing country where environmental disclosure is largely voluntary. The practical implications for managerial or Firms is the findings provide important insights for corporate managers, particularly those responsible for sustainability, governance, and risk management. The first, strengthening environmental disclosure as a risk management tool. Since higher environmental disclosure reduces bankruptcy risk, managers should adopt more comprehensive and credible reporting practices to reduce uncertainty and enhance the firm's financial resilience. The second, integrating environmental strategies into business planning. The results suggest that environmental performance and disclosure are not merely compliance activities but strategic levers that improve access to investment, reduce operational risk, and enhance long-term solvency. Third, enhancing corporate reputation and stakeholder relationships. Transparent reporting can build a stronger corporate image, attract long-term investors, and reduce the likelihood of regulatory sanctions or community resistance.

This study has several limitations. First, the availability of environmental disclosure data is still limited because Indonesia, as a developing country, is still in the early stages of its green transformation. As a result, environmental reporting remains largely voluntary, leading to a relatively small and uneven sample. Second, the study focuses solely on the environmental dimension of sustainability, without incorporating the social and governance aspects that may also influence bankruptcy risk. Therefore, further research is recommended to Expand the scope of ESG variables, specifically by including Social and Governance aspects. This will allow researchers to identify which ESG dimensions most influence bankruptcy risk. Conduct a comparative test to compare the influence of each aspect of E, S, and G on bankruptcy risk. This test will provide a more comprehensive picture of the role of each dimension in mitigating risk.

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