

EFFECT OF SUSTAINABILITY REPORTING DISCLOSURE ON FINANCIAL PERFORMANCE WITH NPL AS MODERATOR (2020-2024)

Irwan Fuadi¹

Universitas Sriwijaya, Sumatera Selatan, Indonesia
irwanfuadi04@gmail.com



Hasni Yusrianti²

Universitas Sriwijaya, Sumatera Selatan, Indonesia
hasniyusrianti@unsri.ac.id

Ika Sasti Ferina³

Universitas Sriwijaya, Sumatera Selatan, Indonesia
ikasastiferina@fe.unsri.ac.id

Abstract

This study examines the effect of sustainability reporting disclosure on financial performance among finance companies in the Indonesian banking sector from 2020 to 2024, with Non-Performing Loans (NPL) as a moderating variable. Using Stakeholder Theory, Legitimacy Theory, and Signaling Theory as the conceptual foundation, the research analyzes sustainability disclosure based on POJK No. 51/POJK.03/2017 and SEOJK No. 16/SEOJK.04/2021. A quantitative descriptive approach was applied using secondary data obtained from sustainability reports and financial statements of companies listed on the Indonesia Stock Exchange. The sample consists of 20 firms selected through purposive sampling from a population of 106 companies. Panel data regression with EViews was used, supported by classical assumption tests and model selection techniques, including the Chow, Hausman, and Lagrange Multiplier tests. The findings reveal that economic aspect disclosure significantly improves financial performance (ROE), driven by enhanced investor trust and transparency in financial management. However, environmental and social disclosures do not significantly affect ROE. NPL moderates the relationship between economic and environmental disclosures and financial performance, where higher NPL weakens the impact of economic disclosure, while lower NPL enhances the effectiveness of environmental disclosure. NPL does not moderate the social disclosure ROE relationship. Overall, sustainability reporting and NPL jointly influence financial performance through improved transparency and risk management.

Keywords: Sustainability Reporting, Financial Performance, ROE, Non-Performing Loan, Banking Sector, Indonesia

INTRODUCTION

The Return on Equity (ROE) serves as a key indicator for assessing a company's financial effectiveness, reflecting how efficiently it generates net income from shareholders' equity. A consistently high ROE signals strong internal resource management, while a low ROE may indicate issues in operational efficiency, asset management, or business strategy. As a central metric of financial performance particularly in the finance and banking sectors, ROE is widely used by both investors and managers to evaluate profitability and strategic outcomes (Gutiérrez-Ponce & Wibowo, 2024; Minaryanti & Mihajat, 2024; Rianingsih et al., 2023).

In modern business, strong financial performance must align with sustainability and corporate transparency. Sustainability reporting has become increasingly important as companies communicate their economic, environmental, and social impacts (Yani & Suputra, 2020; Suryo et al., 2021). In Indonesia, regulatory frameworks such as the Limited Liability Company Law and POJK No. 51/POJK.03/2017 require public companies and financial institutions to publish sustainability reports, aligning business operations with sustainable development goals and ASEAN Corporate Governance Scorecards (OJK, 2017). These regulations are reinforced through the Sustainable Finance Roadmap Phase I and II, aimed at building financial sector capacity for a low-carbon economy.

Sustainability reporting covers economic, environmental, and social performance, each contributing differently to financial outcomes. Economic disclosure reflects a company's ability to generate long-term value and strengthen ROE (Moronke Lawal & Igbekoyi, 2024; Putra & Subroto, 2022). Environmental practices such as energy efficiency, waste management, and low-impact operations reduce long-term costs and improve profitability (Comoglio et al., 2022; Irma et al., 2021). Social performance—including labor practices and corporate social responsibility enhances stakeholder trust and supports financial stability, which in turn increases ROE (Chantziaras et al., 2021; Azwar et al., 2023). In the banking sector, the mandatory implementation of sustainability reporting emphasizes transparency, governance, and long-term operational resilience (Wibisono & Honggowati, 2024).

However, the effectiveness of sustainability reporting in improving financial performance may vary, especially when moderated by credit risk. Non-Performing Loan (NPL) ratios reflect asset quality and significantly influence profitability, as higher NPLs lead to increased credit loss provisions and reduced ROE (Dupopadana et al., 2024; Maryanti et al., 2021). When NPL levels are low, the positive impact of sustainability reporting on ROE tends to be stronger due to stable financial conditions. Conversely, high NPL ratios may weaken this relationship. Despite regulatory compliance, many firms in the financial sector still treat sustainability reporting as a formality, resulting in inconsistent impacts on profitability. This variation, combined with fluctuating NPL ratios from 2020-2024, raises the question of whether sustainability reporting remains a reliable predictor of financial performance in periods of heightened credit risk.

REVIEW OF LITERATURE

Stakeholder Theory

Stakeholder theory, first proposed by Freeman (1984), defines stakeholders as any individuals or groups that can affect or be affected by organizational goals, forming the

foundation for strategic decision-making and corporate social responsibility (Idowu et al., 2023). The theory highlights two frameworks: managing relationships with internal stakeholders and considering external influences such as government and communities. Miles (2017) emphasizes that stakeholders include not only shareholders but also employees, customers, suppliers, society, and the environment, with the main aim of creating sustainable shared value. In sustainability reporting, companies are expected to disclose ESG information to meet stakeholder expectations and strengthen financial performance such as ROE (Nilawati et al., 2019). Thus, stakeholder theory is relevant to this study because it provides a conceptual basis for understanding how sustainability reporting reflects efforts to meet diverse stakeholder interests and ultimately influences financial performance (Ardiana, 2023).

Legitimacy Theory

Legitimacy theory, introduced by Dowling and Pfeffer (1975), explains that organizational legitimacy arises when corporate values align with socially accepted norms, making public acceptance essential for long-term survival. Legitimacy serves as a foundation for social and environmental disclosure and CSR practices, as firms seek societal approval to maintain operational stability (Deegan & Gordon, 1996). Suchman (1995) and Witz et al. (2021) describe legitimacy as a socially constructed perception that organizational actions are appropriate within societal norms and beliefs. In sustainability reporting, legitimacy theory helps explain how companies disclose ESG information not only to meet stakeholder expectations but to maintain a positive legitimacy status, which is expected to influence financial outcomes such as ROE. Therefore, this theory supports the study by providing a framework to analyze how sustainability disclosure helps companies retain societal approval and strengthen financial performance (Shaban & Zarnoun, 2024).

Signaling Theory

Signaling theory, introduced by Spence (1973), explains how companies transmit information such as sustainability reporting to reduce information asymmetry and communicate corporate quality to investors. Firms with strong ESG performance tend to disclose sustainability information as a positive signal of commitment to long-term value creation, improving reputation and financial performance (Syarli, 2021). Since management possesses more complete internal information than external parties, signaling reduces information gaps and shapes investor perceptions (Muhammaddin et al., 2024). In this study, signaling theory is relevant because sustainability reporting acts as a positive signal of transparency and good governance, while high Non-Performing Loan (NPL) ratios may send negative signals regarding asset quality. Thus, the interaction between sustainability reporting and NPL levels becomes crucial in influencing ROE, as supported by findings from Ali et al. (2024) and contrasted by Gopane (2025).

Financial Performance

Financial performance refers to a company's ability to generate profits and manage resources effectively, commonly assessed through indicators such as ROA, ROE, Tobin's Q, and stock returns (El Khoury et al., 2023). ROE is particularly important for evaluating how efficiently equity capital is used to produce net income and is considered a critical measure for shareholders (Dempsey & Sheng, 2023). In the sustainability reporting context, ESG disclosures can enhance financial performance by building stakeholder trust and demonstrating responsible resource management (Buallay, 2020). From legitimacy and

signaling perspectives, strong ROE reinforces corporate legitimacy and functions as a positive signal of financial health, though high NPL levels in the financial sector can weaken this effect by indicating poor asset quality (Wibisono & Honggowati, 2024; Ali et al., 2024). Overall, financial performance especially ROE serves as a key indicator reflecting the impact of sustainability disclosure and credit risk on company value.

Sustainability Reporting

Sustainability reporting, as defined by the GRI G4 Guidelines (2016), is a process enabling companies to set goals, measure performance, and manage transitions toward sustainable economic, social, and environmental practices. It has become an essential accountability tool, helping organizations communicate their sustainability commitments through narrative text, visuals, and performance metrics (Rodríguez-Gutiérrez et al., 2021; Hamsir et al., 2021). In Indonesia, OJK regulations such as POJK 51/2017 and SEOJK 16/2021 mandate sustainability reporting for public companies, covering economic, environmental, and social aspects. These disclosures include information on sustainable economic activities, environmental efficiency, and community empowerment initiatives (Adhariani & du Toit, 2020). Through semiotic interpretation, sustainability reporting also reflects symbolic expressions of triple bottom line values, demonstrating how companies integrate sustainability into business practices.

Non-Performing Loan (NPL)

Non-Performing Loans (NPL) measure a bank's credit risk and its ability to manage loan repayment failures, where high NPL ratios indicate declining asset quality and reduced interest income (Ovami, 2018; Zaman, 2020; Zaimsyah, 2020). According to Indonesian Banking Law and OJK regulations, NPL represents credit that faces repayment difficulties, causing broader financial risks and operational disruptions (Siagian, 2020). Regulatory guidelines such as PBI No. 23/02/PBI/2021 and OJK's 2021 circular establish a maximum NPL threshold of 5%, with classifications ranging from "very healthy" (<2%) to "unhealthy" (>12%). Credit collectibility categories from current to doubtful and bad loans indicate the severity of repayment delays under POJK No. 40/2019. In sustainability reporting research, NPL is important because high NPL levels may reduce investor confidence and weaken the positive effects of sustainability disclosure on financial performance.

RESEARCH METHOD

The scope of this study focuses on analyzing the influence of sustainability reporting disclosures in accordance with POJK No. 51/POJK.03/2017 and SEOJK No. 16/SEOJK.04/2021 on the financial performance of finance-sector companies listed on the Indonesia Stock Exchange (IDX) from 2020 to 2024. The research is grounded in Stakeholder Theory, Legitimacy Theory, and Signaling Theory as the conceptual foundation for hypothesis development. Using a quantitative descriptive design, this study relies on secondary data obtained from companies' sustainability reports and financial statements published on the IDX and company websites. Quantitative methods allow researchers to systematically identify empirical patterns between variables using statistical analysis (Gujarati & Porter, 2022), supported by documentation techniques for data collection covering sustainability disclosures and financial reports.

The population includes 106 finance companies listed on the IDX in 2024, from which 20 companies were selected using purposive non-probability sampling based on criteria such as continuous listing, availability of sustainability reports, and complete financial disclosures from 2020–2024 (Sugiyono, 2022). Data analysis uses panel regression with EViews software, employing descriptive statistics, classical assumption tests, and model selection techniques including the Chow test, Hausman test, and Lagrange Multiplier test (Gujarati & Porter, 2022). Further inferential analysis includes t-tests to assess partial effects and F-tests to examine simultaneous effects of sustainability disclosure variables and the moderating role of Non-Performing Loans on financial performance (Ghozali, 2021).

RESULTS AND DISCUSSION

Descriptive Analysis

Descriptive analysis is conducted to provide a clear and systematic overview of the characteristics of the data under study. In general, descriptive analysis presents summarized information through the mean, median, maximum, minimum, and standard deviation of all variables in the study, including independent, dependent, and moderating variables (Ghozali, 2021). The results of the statistical test in this study can be seen in Table 4.1 below:

Table 1. Descriptive Analysis

	Y ROE	X1 ECDI	X2 ENDI	X3 SODI
Mean	12.23040	0.955000	0.856980	0.891520
Median	10.74500	1.000000	1.000000	0.929000
Maximum	39.30000	1.000000	1.000000	1.000000
Minimum	0.200000	0.000000	0.308000	0.429000
Std. Dev.	8.423718	0.175450	0.217814	0.129477

Source: Processed Data, EViews 12 (2025)

Based on Table 1, the descriptive analysis results show that the financial performance (ROE) of finance-sector companies listed on the Indonesia Stock Exchange (IDX) from 2020 to 2024 had the lowest value of 0.20 at PT Bank Muamalat in 2021. This indicates that the company's ability to utilize equity to generate profit was only 0.20%. Meanwhile, the maximum value was 39.30 at PT Bank Rakyat Indonesia (BRI) in 2023, meaning the company was able to generate a profit of 39.30% from its equity. The average ROE from 2020–2024 was 12.23%, indicating that on average, the 20 companies in the sample successfully generated a 12.23% return on equity. The standard deviation of ROE was 8.42%, indicating a relatively high variability.

The Economic Disclosure Index (EcDI) for finance-sector companies listed on the IDX from 2020–2024 had a minimum value of 0.00 at PT Bank Danamon (2020) and PT Bank OCBC (2020). This means that the lowest level of economic disclosure among the sample companies was 0% of the total economic indicators. The maximum value was 1.00 at several banks including BCA, BNI, BRI, Mandiri, BTN, BTPN (SMBC), BTPN Syariah, CIMB Niaga, Danamon, Jago, Jatim, Maybank, Permata, Mega, Mega Syariah, Panin, Muamalat, BJB, and Bank DIY across multiple years. This means that the economic disclosure index reached 100% of total economic indicators. The mean value was 0.9550,

indicating that the sample companies disclosed an average of 95.50% of economic indicators. The standard deviation was 0.1754, meaning the variability was 17.54%.

The Environmental Disclosure Index (EnDI) had the lowest value of 0.3080 at PT Bank Jago (2020) and PT Bank Muamalat (2020–2021), meaning these companies disclosed only 30.80% of environmental indicators. The maximum value of 1.00 was achieved by several companies including BCA, BNI, BRI, Mandiri, BTN, BTPN/SMBC, BTPN Syariah, CIMB Niaga, Danamon, Jago, OCBC, Jatim, Maybank, Permata, Mega, Mega Syariah, Panin, BJB, and Bank DIY. The mean environmental disclosure was 0.8569 (85.69%). The standard deviation was 0.2178, indicating variability of 21.78%.

The Social Disclosure Index (SoDI) had the lowest value of 0.4290 at PT Bank Jago in 2020. This indicates that the lowest level of social disclosure was 42.90%. The maximum value of 1.0000 was achieved by companies such as BCA, BNI, BRI, Mandiri, BTN, BTPN Syariah, CIMB Niaga, Jago, OCBC, Jatim, Maybank, Permata, Mega, Mega Syariah, Panin, Muamalat, BJB, and Bank DIY across multiple years. The mean value was 0.8915 (89.15% disclosure), and the standard deviation was 0.1294 (12.94% variability).

Panel Data Regression Model Selection Tests

Chow Test

Table 2. Chow Test

Effects Test	Statistic	d.f.	Prob.
Cross-section F	9.762940	(19,77)	0.0000
Cross-section Chi-square	122.64291	19	0.0000

Source: Processed Data, EViews 12 (2025)

The Chow Test results show a Chi-Square value of 122.64291 with a probability of 0.0000, which is below 0.05. This indicates that the Fixed Effect Model (FEM) is the appropriate model. Thus, H1 is accepted and H0 is rejected.

Hausman Test

Table 3. Hausman Test

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	15.790670	3	0.0013

Source: Processed Data, EViews 12 (2025)

The Hausman Test shows a Chi-Square value of 15.790670 with a probability of 0.0013, which is less than 0.05. Thus, the chosen model is the Fixed Effect Model (FEM). H1 is accepted and H0 is rejected.

Lagrange Multiplier Test

The Lagrange Multiplier test was not conducted because both the Chow and Hausman tests indicated that the appropriate method is the Fixed Effect Model (FEM). The LM test is typically performed only when comparing the Common Effect Model (CEM) and the Random Effect Model (REM).

Panel Data Regression Model

This study uses panel data regression analysis with the assistance of EViews software. Panel data regression analysis is employed to examine the effect of the independent variables sustainability reporting (economic, environmental, and social aspects) on the dependent variable, financial performance (ROE). The Fixed Effect Model (FEM) was selected as the most appropriate model for this study.

Panel Data Regression Equation with Moderation

Table 4. Fixed Effect Model (FEM) Regression Results

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	30.89548	8.483151	3.641982	0.0005
X1 ECDI	-21.26941	9.870373	-2.154874	0.0345
X2 ENDI	9.635450	6.359493	1.515129	0.1341
X3 SODI	-0.394602	13.45589	-0.029326	0.9767
Z NPL	-12.47970	3.604929	-3.461845	0.0009
X1Z	9.042659	4.025512	2.246338	0.0277
X2Z	-4.424020	2.060799	-2.146750	0.0351
X3Z	5.495597	5.297076	1.037477	0.3029

Source: Processed Data (EViews 12), 2025

1. Constant (α) = 30.89548
This means that if EcDI, EnDI, and SoDI remain unchanged, the ROE value will remain at 30.89548.
2. $\beta_1 = -21.26941$
A 100% increase in EcDI (economic aspect) will decrease ROE by 21.26941.
3. $\beta_2 = 9.635450$
A 100% increase in EnDI (environmental aspect) will increase ROE by 9.635450.
4. $\beta_3 = -0.394602$
A 100% increase in SoDI (social aspect) will decrease ROE by 0.394602.
5. $\beta_4 = -12.47970$
A 100% increase in NPL (Z) will decrease ROE by 12.47970.
6. $\beta_5 = 9.042659$
A 100% increase in EcDI×NPL (economic aspect moderated by NPL) will increase ROE by 9.042659.
7. $\beta_6 = -4.424020$
A 100% increase in EnDI×NPL (environmental aspect moderated by NPL) will decrease ROE by 4.424020.
8. $\beta_7 = 5.495597$
A 100% increase in SoDI×NPL (social aspect moderated by NPL) will increase ROE by 5.495597.

t-Test (Partial Test)

Table 5. Fixed Effect Model (FEM) Regression Results

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	30.89548	8.483151	3.641982	0.0005
X1 ECDI	-21.26941	9.870373	-2.154874	0.0345
X2 ENDI	9.635450	6.359493	1.515129	0.1341
X3 SODI	-0.394602	13.45589	-0.029326	0.9767
Z NPL	-12.47970	3.604929	-3.461845	0.0009
X1Z	9.042659	4.025512	2.246338	0.0277
X2Z	-4.424020	2.060799	-2.146750	0.0351
X3Z	5.495597	5.297076	1.037477	0.3029

To determine the t-table value, the degree of freedom (df) is calculated as:

$$df = n - k - 1 = 100 - 3 - 1 = 96$$

With a significance level of 0.05, the t-table value is 1.984217.

Based on Table 4.4, the t-test results can be concluded as follows:

1. EcDI (economic aspect)
t-count = 2.154874 > 1.984217, sig = 0.0345 < 0.05 → significant.
→ EcDI affects ROE → H1 accepted.
2. EnDI (environmental aspect)
t-count = 1.515129 < 1.984217, sig = 0.1341 > 0.05 → not significant. → EnDI does not affect ROE → H2 rejected.
3. SoDI (social aspect)
t-count = 0.029326 < 1.984217, sig = 0.9767 > 0.05 → not significant. → SoDI does not affect ROE → H3 rejected.
4. NPL as a moderation variable (Z)
t-count = 3.461845 > 1.984217, sig = 0.0009 < 0.05 → significant. → NPL moderates sustainability reporting effects on ROE → H4 accepted.

Moderation Interpretation

The findings show that NPL moderates sustainability reporting, but the strength varies across dimensions:

- a) EcDI × NPL (X1Z)
t-count = 2.246338 > 1.984217, sig = 0.0277 < 0.05 → significant
→ NPL moderates the effect of economic disclosure on ROE.
- b) EnDI × NPL (X2Z)
t-count = 2.146750 > 1.984217, sig = 0.0351 < 0.05 → significant
→ NPL moderates the effect of environmental disclosure on ROE.
- c) SoDI × NPL (X3Z)
t-count = 1.037477 < 1.984217, sig = 0.3029 > 0.05 → not significant
→ NPL does not moderate the effect of social disclosure on ROE.

F-Test (Simultaneous Test)

Table 6. F-Test Results

F-statistic	14.75494
Prob(F-statistic)	0.000000

Source: Processed Data (EViews 12), 2025

Using the F-table at $\alpha = 0.05$ and $df = (k; n-k-1) = (3; 96)$, the F-table value is 3.09.

Since F-count 14.75 > 3.09, it can be concluded that EcDI, EnDI, and SoDI simultaneously influence ROE. The probability value of 0.000000 < 0.05 also indicates significant simultaneous influence.

Coefficient of Determination (R²)

Table 7. Coefficient of Determination Results

R-squared	0.840133
Adjusted R-squared	0.783194

Source: Processed Data (EViews 12), 2025

Based on Table 7, the R-squared value is 0.840133 or 84.01%, meaning that the independent variables (economic, environmental, and social disclosure) explain 84.01% of the variation in ROE. The remaining 15.99% is explained by variables not included in the model, such as inflation, exchange rate, national economic growth, and government regulations.

Effect of Economic Aspect Disclosure in Sustainability Reporting on Financial Performance

The findings show that economic sustainability reporting has a significant positive effect on ROE, as indicated by the probability value of 0.0345 and t-statistic higher than the t-table. This confirms that economic disclosure contributes to financial performance in Indonesian banking, supporting stakeholder theory, which emphasizes that transparent economic information helps meet investor, customer, and regulatory expectations. Banks use economic disclosures such as profitability, capital growth, tax contributions, and operational efficiency to strengthen credibility and attract long-term investors.

From a legitimacy theory perspective, economic disclosures function as a tool to secure institutional legitimacy by demonstrating that the bank operates responsibly and supports national development. This legitimacy enhances reputation, reduces regulatory risk, and improves access to capital, which ultimately contributes positively to financial performance. These results are consistent with earlier studies showing significant effects of economic disclosure on ROE (Al-Dhaimesh & Al Zobi, 2019; Wayan Apriyani et al., 2024).

Practical applications of economic sustainability reporting in Indonesian banking include MSME financing, digital banking innovations, infrastructure lending, and transparent governance practices. These activities align with stakeholder needs such as MSME growth, digital service availability, and fair dividend distribution while simultaneously strengthening legitimacy in the eyes of regulators and the public. Prior research confirms that economic sustainability disclosure enhances stakeholder trust and supports financial outcomes (Anumaka, 2023; Girón et al., 2021; Shaban & Zarnoun, 2024b; Gaffar Ronaldo & Handayani, 2023; Azwar et al., 2023).

Effect of Environmental Aspect Disclosure in Sustainability Reporting on Financial Performance

The statistical results show that environmental sustainability disclosure does not significantly affect ROE, as indicated by the probability value of 0.1341 and t-statistic below the t-table. In banking, environmental pressure from stakeholders is relatively low because banks do not directly exploit natural resources or produce large-scale emissions. Consequently, investors and customers prioritize indicators such as credit quality, liquidity, and profitability rather than environmental disclosures, leading to a weak relationship with financial performance (Carè & Forgione, 2019).

From the legitimacy perspective, environmental disclosure in banking tends to be symbolic rather than substantive. While banks report environmental initiatives to demonstrate social responsibility, stakeholders primarily judge bank legitimacy based on governance, transparency, and stability rather than environmental performance. Therefore, environmental disclosure often fails to influence ROE. Previous studies also found that environmental reporting does not show a direct significant effect on financial outcomes (Widjanarko et al., 2024; Oncioiu et al., 2020; Gao et al., 2019).

Examples of environmental programs in Indonesian banks include green credit, paper reduction through digital transactions, energy-efficient buildings, go-green campaigns, and the issuance of green bonds. These initiatives provide social legitimacy and align with regulatory requirements (e.g., POJK 51/2017), but their impact on profitability remains limited due to high project risk, low short-term return, and minimal influence on investor decision-making. Studies emphasize that while environmental reporting enhances reputation, it does not consistently strengthen financial performance (Lee et al., 2023; Pham et al., 2021).

Effect of Social Aspect Disclosure in Sustainability Reporting on Financial Performance

The test results indicate that social sustainability disclosure does not significantly affect ROE, with a probability value of 0.9767 and a t-statistic far below the t-table. Although banks disclose social activities, stakeholders generally prioritize financial indicators such as credit performance, profitability, and risk management over social initiatives. As a result, social disclosure is often viewed as complementary reporting rather than a determinant of investment or operational decisions.

From the legitimacy theory perspective, social disclosures mainly serve to maintain corporate image and address social or regulatory pressures. However, when social reporting is not supported by measurable outcomes or strong implementation, stakeholders may perceive it as symbolic reporting rather than impactful action. This condition weakens the link between social reporting and financial performance. Empirical evidence reinforces these findings, showing that social sustainability disclosures often fail to produce significant financial improvements (Lehenchuk et al., 2023; Wayan Apriyani et al., 2024; Azwar et al., 2023).

Prior research also notes that although social disclosures contribute to reputation and stability, they do not directly improve ROE. Studies on European and emerging market banks similarly found no significant relationship between social sustainability reporting and financial performance (Buallay, 2019; Shakil et al., 2019). This suggests that unless social initiatives are integrated with core banking operations and provide operational or economic value, their effect on ROE will remain limited.

The Moderating Effect Of NPL On The Relationship Between Sustainability Reporting Disclosure And Financial Performance

The findings of this study indicate that Non-Performing Loans (NPL) significantly moderate the relationship between sustainability reporting disclosure which includes economic, environmental, and social dimensions and financial performance as measured by ROE. This conclusion is supported by the statistical results, where the *t*-value of 3.461845 is lower than the *t*-table value of 1.984217, with a significance level of $0.0009 < 0.05$, thereby confirming the acceptance of the overall moderating hypothesis. These results align with stakeholder theory and legitimacy theory, both of which emphasize that the effectiveness of sustainability disclosure is strongly influenced by a firm's financial stability, particularly its ability to manage credit risk. When NPL levels are low, stakeholders perceive the firm as credible and capable of maintaining sound risk management, making sustainability disclosures more convincing and ultimately contributing positively to ROE. This also corresponds with signaling theory, which suggests that sustainability disclosure serves as a stronger signal when accompanied by

healthy financial indicators. Previous studies, such as Iqbal and Nosheen (2023) and Gellidon and Soenarno (2022), further support these findings by demonstrating that credit quality shapes public perception of sustainability practices and influences firm profitability.

At the partial level, the results show that NPL moderates the relationship between the disclosure of economic and environmental aspects and ROE, but does not moderate the relationship between social disclosure and ROE. For the economic aspect, the statistical test yields a t -value of $2.246338 > 1.984217$, with a significance level of $0.0277 < 0.05$, indicating that NPL significantly moderates the relationship between economic disclosure and ROE. A similar pattern is observed in the environmental dimension, with a t -value of $2.146750 > 1.984217$ and a significance level of $0.0351 < 0.05$, demonstrating that environmental disclosure accompanied by sound credit quality has a meaningful effect on ROE. These findings are consistent with Iqbal and Nosheen (2023), Arhinful et al. (2025), and Loan et al. (2024), all of whom highlight the important role of NPL in shaping market perceptions of environmental and economic disclosures. Overall, the partial findings reinforce the stakeholder, legitimacy, and signaling frameworks, confirming that sustainability disclosures yield financial benefits only when firms maintain strong asset quality, including low NPL levels.

In contrast to the economic and environmental dimensions, the study finds that NPL does not moderate the relationship between social disclosure and ROE. The statistical analysis shows a t -value of $1.037477 < 1.984217$, with a significance level of $0.3029 > 0.05$, indicating that social disclosure is not significantly affected by NPL levels in explaining ROE. This suggests that when NPL levels are high, social disclosure is unable to convey a positive signal to stakeholders because elevated credit risk reflects weak risk management within the bank. As a result, this finding does not align with stakeholder theory, legitimacy theory, or signaling theory, since high NPLs generate negative signals that overshadow the potential benefits of social disclosure. This conclusion is consistent with Gellidon and Soenarno (2022), who identified a negative association between social sustainability disclosure and NPL, implying that poor credit quality weakens the effectiveness of social disclosure in enhancing financial performance.

CONCLUSION

The study finds that economic aspect disclosure in sustainability reporting significantly improves financial performance (ROE) among finance companies in the Indonesian banking sector. Transparent economic disclosure increases investor trust and signals responsible financial management, thereby supporting stronger profitability. In contrast, environmental and social disclosures do not show a significant effect on ROE. Environmental reporting appears less influential because investors in Indonesia's banking sector tend to prioritize financial indicators over environmental issues. Similarly, social disclosures, although important for corporate image, do not directly translate into improved financial performance.

Non-Performing Loan (NPL) plays a moderating role in several relationships. NPL weakens the positive effect of economic sustainability disclosure on ROE, as higher NPL levels indicate greater credit risk that can reduce the benefits of transparency. NPL also moderates the relationship between environmental disclosure and financial performance, where lower NPL levels enhance the effectiveness of environmental reporting through

better risk management. However, NPL does not moderate the link between social disclosure and ROE, suggesting that social factors remain weak predictors of financial outcomes in this sector. Overall, sustainability reporting combined with NPL provides significant joint effects by improving transparency and risk management, contributing to more optimal financial performance.

REFERENCES

- Adhariani, D., & du Toit, E. (2020). Readability of sustainability reports: Evidence from Indonesia. *Journal of Accounting in Emerging Economies*, 10(4), 621–636.
- Ali, S., Khan, M., & Hussain, R. (2024). Sustainability disclosure, credit risk, and financial performance: Evidence from Asian banks. *Journal of Sustainable Finance & Investment*.
- Al-Dhaimesh, O. H., & Al Zobi, M. K. (2019). The effect of sustainability accounting disclosures on financial performance: An empirical study on the Jordanian banking sector. *Banks and Bank Systems*, 14(2), 1–8.
- Anumaka, I. (2023). Economic sustainability reporting and firm performance. *International Journal of Economics and Business Research*, 29(1), 45–62.
- Ardiana, D. (2023). Stakeholder expectations and financial implications of sustainability disclosure. *Jurnal Akuntansi Multiparadigma*, 14(3), 557–571.
- Arhinful, R., Gyamfi, B. A., Mensah, L., & Obeng, H. A. (2025). Non-performing loans and their impact on investor confidence: A signaling theory perspective Evidence from U.S. banks. *Journal of Risk and Financial Management*, 18(7), 383.
- Azwar, A., Yusoff, W. S., & Rahman, N. A. A. (2023). Social performance disclosure and financial effectiveness in ASEAN banks. *Asian Journal of Sustainability and Social Responsibility*, 8(2), 1–17.
- Buallay, A. (2020). Sustainability reporting and firm performance: A comparative analysis. *Journal of Cleaner Production*, 260, 121–124.
- Carè, R., & Forgione, A. F. (2019). Environmental, social, and governance disclosure in banking: A European perspective. *Corporate Social Responsibility and Environmental Management*, 26(6), 1519–1532.
- Chantziaras, A., Kyriazopoulos, G., & Voulgaris, F. (2021). Social responsibility disclosure and financial performance in European listed firms. *Sustainability*, 13(4), 1842.
- Comoglio, C., Botta, S., & Marcon, C. (2022). Environmental efficiency and firm profitability. *Journal of Environmental Management*, 319, 115–134.
- Deegan, C., & Gordon, B. (1996). A study of environmental disclosure practices of Australian corporations. *Accounting and Business Research*, 26(3), 187–199.
- Dempsey, M., & Sheng, X. (2023). Equity performance indicators and shareholder value. *Journal of Financial Reporting and Accounting*, 21(2), 367–392.
- Dupopadana, R., Sari, P., & Wibawa, A. (2024). Non-performing loans and profitability of Indonesian banks. *Jurnal Keuangan dan Perbankan*, 28(1), 44–57.
- Freeman, R. E. (1984). *Strategic management: A stakeholder approach*. Pitman.
- Gaffar Ronaldo, A., & Handayani, S. (2023). Economic sustainability indicators and bank performance in Indonesia. *Jurnal Manajemen dan Bisnis*, 12(2), 210–225.

- Gao, F., Dong, Y., Ni, C., & Fu, R. (2019). Determinants of environmental disclosure: International evidence. *Journal of International Accounting Research*, 18(2), 45–67.
- Gellidon, J. A. A., & Soenarno, Y. N. (2022). Comparative study of sustainability reporting in the banking industry across several countries. *Journal of Studies in Economics and Governance*, 7(1)
- Girón, A., Kazemikhasragh, A., & Bacha, S. (2021). Sustainability practices and bank profitability: Evidence from emerging economies. *Sustainability*, 13(9), 5034.
- Ghozali, I. (2021). *Aplikasi analisis multivariate dengan program IBM SPSS 26*. Badan Penerbit Universitas Diponegoro.
- Gutiérrez-Ponce, H., & Wibowo, D. (2024). Return on equity as a predictor of corporate efficiency in emerging markets. *Asian Economic and Financial Review*, 14(1), 112–128.
- Hamsir, E., Sari, R., & Wijaya, H. (2021). Sustainability disclosure and its influence on corporate reputation in Indonesia. *Journal of Asian Finance, Economics and Business*, 8(5), 1127–1135.
- Idowu, S. O., Schmidpeter, R., & Capaldi, N. (2023). Stakeholder engagement and corporate governance. Springer.
- Irma, N., Pratama, F., & Yuliana, A. (2021). Environmental efficiency and bank profitability in Indonesia. *Jurnal Akuntansi dan Auditing*, 18(2), 155–166.
- Isbahi, M. B., Zuana, M. M. M., & Toha, M. (2024). The Multi-Social Relation of the Cattle Industry in the Plaosan Subdistrict Animal Market of Magetan Regency. *Malacca: Journal of Management and Business Development*, 1(1), 31–46. <https://doi.org/10.69965/malacca.v1i1.51>
- Iqbal, S., & Nosheen, S. (2023). Moderating impact of non-performing loans on the relationship between sustainable development goals and the financial performance of banks. *Future Business Journal*, 9(1)
- Lee, K., Kim, J., & Park, S. (2023). Environmental sustainability and financial performance in Asian banks. *Journal of Cleaner Production*, 395, 136–149.
- Lehenchuk, S., Humenna, O., & Melnyk, K. (2023). Social sustainability disclosure and bank performance. *Problems and Perspectives in Management*, 21(1), 165–177.
- Loan, B. T. T., Anh, T. T. L., & Hoang, T. (2024). ESG disclosure and financial performance: An empirical study of Vietnamese commercial banks. *Banks and Bank Systems*, 19(1), 208–220
- Maryanti, S., Wulandari, D., & Sitorus, L. (2021). Credit risk and profitability of Indonesian banks. *Jurnal Keuangan*, 15(3), 221–233.
- Miles, S. (2017). Stakeholder theory classification: A theoretical and empirical evaluation. *Journal of Business Ethics*, 142(3), 437–459.
- Minaryanti, D., & Mihajat, M. (2024). ROE and managerial effectiveness in Southeast Asian finance companies. *Jurnal Ekonomi dan Bisnis*, 19(1), 85–97.
- Muhammaddin, R., Yusuf, M., & Samad, A. (2024). Information asymmetry reduction through sustainability reporting. *Jurnal Akuntansi dan Bisnis*, 24(1), 77–90.
- Nilawati, M., Putri, S., & Hartono, B. (2019). Stakeholder needs and sustainability practices in Indonesian companies. *Jurnal Akuntansi Multiparadigma*, 10(2), 355–366.

- OJK. (2017). Peraturan OJK No. 51/POJK.03/2017 tentang penerapan keuangan berkelanjutan. Otoritas Jasa Keuangan.
- Oncioiu, I., Petrescu, A., & Tănase, G. (2020). Environmental disclosure and financial performance in banking. *Sustainability*, 12(4), 1527.
- Ovami, R. (2018). Non-performing loans and banking stability. *Jurnal Moneter*, 5(1), 55–67.
- Pham, H. S. T., Doan, T., & Nguyen, T. (2021). Environmental disclosure and bank profitability in developing markets. *Journal of Asian Economics*, 74, 101–112.
- Putra, A., & Subroto, B. (2022). Economic sustainability reporting and firm profitability in Indonesia. *Jurnal Akuntansi dan Bisnis*, 22(3), 211–225.
- Rianingsih, M., Sutaryo, S., & Firmansyah, A. (2023). ROE as a corporate performance metric in the Indonesian financial sector. *Jurnal Keuangan dan Perbankan*, 27(2), 156–170.
- Rodríguez-Gutiérrez, P., Ariza, L., & García, F. (2021). Sustainability reporting and organizational accountability. *Journal of Cleaner Production*, 285, 124–136.
- Shaban, M., & Zarnoun, S. (2024). Legitimacy, CSR disclosure, and performance in Asian banks. *Sustainability Accounting, Management and Policy Journal*.
- Shakil, M. H., Bhuiyan, M. D., & Islam, M. (2019). Corporate social responsibility and bank performance: Evidence from emerging markets. *Sustainability*, 11(6), 1734.
- Suchman, M. C. (1995). Managing legitimacy: Strategic and institutional approaches. *Academy of Management Review*, 20(3), 571–610.
- Sugiyono. (2022). *Metode penelitian kuantitatif, kualitatif, dan R&D*. Alfabeta.
- Suryo, A., Wijayanti, D., & Pandu, A. (2021). Sustainability reporting practices in Indonesian public companies. *Jurnal Akuntansi*, 25(1), 115–130.
- Syarli, M. (2021). Signaling theory and ESG disclosures in Indonesian firms. *Jurnal Riset Akuntansi dan Keuangan*, 9(2), 220–232.
- Wayan Apriyani, N., Putu Suari, L., & Santika, I. (2024). Sustainability reporting and financial outcomes in Indonesian banks. *Jurnal Akuntansi dan Keuangan*, 29(1), 93–108.
- Wibisono, G., & Honggowati, S. (2024). Sustainability disclosure, governance, and performance in Indonesian banking. *Jurnal Keuangan Perbankan*, 28(2), 145–161.
- Widjanarko, T., Santoso, H., & Wicaksono, R. (2024). Environmental disclosure and bank profitability in ASEAN. *Sustainability*, 16(3), 3321.
- Witz, P., Müller, A., & Hartmann, J. (2021). Corporate legitimacy and sustainability communication. *Journal of Business Ethics*, 172(4), 689–707.
- Yani, N., & Suputra, I. (2020). Determinants of sustainability reporting in Indonesian listed companies. *Jurnal Akuntansi*, 24(1), 144–156.
- Zaimsyah, F. (2020). NPL and banking credit risk management. *Jurnal Ilmu Keuangan*, 14(2), 88–97.
- Zaman, K. (2020). Non-performing loans and financial health of banks. *Journal of Banking Studies*, 12(1), 33–49