

Green Banking and Financial Inclusion as Strategic Drivers of Financial Performance in The Indonesian Banking Sector

Rafidah Ulfa¹, Isnurhadi², Yuliani³

^{1,2,3}Department of Management, Universitas Sriwijaya, Palembang, Indonesia

Corresponding author: Rafidah Ulfa

*Corresponding email: rafidahulfa1507@gmail.com

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ABSTRACT

The growing global focus on sustainability has prompted the banking industry to integrate environmental and social considerations into its operational and financial strategies. In Indonesia, this transformation is closely tied to the implementation of green banking and the expansion of financial inclusion as dual drivers of sustainable development. This study aims to examine the influence of green banking practices and the degree of financial inclusion on the financial performance of banks in Indonesia. A quantitative research design was employed using secondary data derived from annual and sustainability reports of commercial banks between 2018 and 2023. Panel data regression analysis was conducted to test the relationship between variables, supported by diagnostic and model selection tests such as the Chow, Hausman, and Lagrange Multiplier tests. The results reveal that both green banking and financial inclusion have a positive and significant effect on bank profitability. Green banking enhances performance by promoting environmentally responsible financing, operational efficiency, and stakeholder trust, while financial inclusion—measured by branch network expansion—strengthens deposit mobilization and credit distribution, improving overall profitability. These findings confirm that sustainability and inclusivity are complementary strategies for achieving long-term financial success. The study contributes to the literature on sustainable finance by providing empirical evidence from a developing-country context and offering insights for policymakers and banking practitioners to harmonize profitability with environmental and social objectives.

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1. Introduction

The transformation of the global financial landscape has accelerated rapidly with the rise of digital technology and sustainability-driven innovation. Financial institutions are no longer confined to their traditional role as profit-oriented intermediaries but are increasingly expected to contribute to inclusive and sustainable economic growth. The integration of digital financial services—such as mobile banking, fintech platforms, and digital payments—has expanded access to financial systems and improved efficiency (Sayari et al., 2025). However, this technological progress coincides with growing environmental degradation and climate-related risks that threaten long-term economic stability (Nouvan, 2025). As a result, the financial sector, particularly banking institutions, faces

the dual challenge of maintaining profitability while adopting environmentally and socially responsible practices that align with global sustainability goals.

Recent scholarly attention has turned toward green banking, a strategic approach that embeds environmental considerations into financial operations and investment decisions. Prior studies highlight its role in minimizing ecological impact, enhancing corporate reputation, and fostering long-term resilience (Chiaromonte et al., 2022; Dikau & Volz, 2021; Udeagha & Muchapondwa, 2023). Yet, the implementation of green banking in developing countries, including Indonesia, remains uneven and lacks standardized frameworks (Gea et al., 2024). Empirical findings on its impact also remain mixed—some research reveals a positive association between green banking and profitability (Putri et al., 2022), while others find negligible or inconsistent effects (Siahaan et al., 2021). These variations stem from methodological differences, inconsistent indicators of environmental disclosure, and limited temporal coverage. Consequently, there remains an empirical gap in understanding how sustainability-oriented banking practices translate into tangible financial outcomes within emerging market contexts (Adu, 2022; Zheng et al., 2021).

In parallel, financial inclusion has gained prominence as a pillar of economic and social development. Expanding access to financial services—particularly through physical branch networks and digital platforms—has been recognized as essential to fostering equitable growth and financial stability (Chen, 2022). In Indonesia, the Financial Services Authority (OJK, 2022) reported a rise in the national financial inclusion index from 76.19% in 2019 to 85.10% in 2022, reflecting substantial progress. Nonetheless, disparities persist, especially in rural areas where financial access remains constrained. Empirical studies show conflicting evidence regarding the link between financial inclusion and bank performance. Some findings indicate that greater access promotes deposit mobilization and credit expansion, thereby enhancing profitability, while others argue that inclusion initiatives impose additional operational costs that may reduce margins. These inconsistencies call for a more integrated assessment that considers both the inclusive and sustainable dimensions of financial performance.

Given this context, this study seeks to bridge the empirical and conceptual gap by examining the influence of green banking and financial inclusion on the financial performance of banks in Indonesia. This research contributes to the growing body of sustainable finance literature by linking environmental responsibility and inclusive growth within a single analytical framework. It also extends the application of stakeholder and legitimacy theories to the banking sector, emphasizing that profitability and social accountability are not mutually exclusive but mutually reinforcing. The findings are expected to generate practical implications for regulators and banking institutions by identifying strategies that balance financial performance with environmental and social sustainability. Ultimately, this study aims to strengthen the theoretical foundation and provide empirical evidence for advancing a banking system that is both inclusive and environmentally responsible, aligning Indonesia's financial development agenda with the broader objectives of sustainable and equitable growth.

Stakeholder Theory

Stakeholder theory is a fundamental concept in modern business, emphasizing that a company cannot operate in isolation but depends significantly on the involvement and support of various stakeholders, including investors, the community, the government, and other related parties (Wrespatiningsih & Mahyuni, 2022). Within this theoretical framework, companies are expected not only to pursue internal objectives but also to consider and balance the interests of all parties affected by their operations (Kurniawan, 2021). Building trust and maintaining harmonious relationships with stakeholders are essential for ensuring long-term support, organizational legitimacy, and sustainable growth.

The concept of stakeholders was originally defined as individuals or groups that can significantly affect, or be affected by, the success or failure of a company. This idea emphasizes that corporate responsibilities extend beyond shareholders to encompass all parties with legitimate interests in the organization's activities. More specifically, stakeholder theory encompasses the policies and practices associated with corporate values, regulatory compliance, social responsibility, and environmental stewardship, including sustainable development. In practical terms, Hanif (2020) highlights that stakeholder theory functions as a strategic management approach aimed at strengthening a company's relationship with its external environment and fostering a sustainable competitive advantage. Companies that successfully maintain positive stakeholder relationships are more likely to achieve long-term success and ensure business continuity. Furthermore, this

theory provides a foundational framework for the development of sustainability reports, which serve to communicate relevant information demonstrating a company's commitment to sustainability goals and its accountability to diverse stakeholder groups.

Legitimation Theory

Legitimacy theory posits that companies must align their activities, policies, and strategies with the prevailing values, norms, and regulations of the society in which they operate. The theory is founded on the premise that the survival and success of an organization depend on the continuous approval and acceptance of its social environment, which serves as a vital provider of economic, human, and institutional resources (Noviarita et al., 2021). In this regard, organizations are viewed as part of a broader social system, and their legitimacy is determined by the extent to which their actions are perceived as consistent with societal expectations. When a company's behavior deviates from these expectations, it risks losing its social license to operate, which may result in reputational damage, regulatory sanctions, or declining stakeholder trust. Siregar and Tampubolon (2019) emphasize that a company's adherence to social norms can be demonstrated through operational reforms, policy innovations, and transparent reporting practices that convey accountability and concern for environmental and social issues. These proactive measures are not merely compliance-based but represent strategic efforts to reinforce legitimacy and sustain long-term stakeholder confidence. Deegan (2002) further argues that when management perceives its operations as aligned with societal values, it tends to voluntarily disclose related environmental and social information as a signal of transparency and ethical commitment. Therefore, legitimacy theory provides a robust theoretical foundation for understanding corporate disclosure behavior, particularly within sustainability and green banking contexts, where organizations must continuously justify their environmental and social initiatives to maintain public trust and institutional credibility.

Green banking

The World Bank defines green banking as a financial system in which institutions operate based on sustainability principles, integrating environmental and social responsibility into their core business activities. Green banking encourages banks to pursue environmentally conscious financing while ensuring long-term profitability and resilience. Its implementation not only promotes responsible corporate behavior but also enhances competitiveness, strengthens brand identity, and cultivates a positive public image that aligns with strategic goals. Similarly, Bank Indonesia (2014) describes green banking as the active participation of banks in supporting sustainability through financing environmentally sound projects and applying sustainable practices within their internal operations. This dual commitment reflects an institutional transformation toward responsible finance and sustainable development.

Green banking embodies a bank's ethical and strategic responsibility to safeguard the environment and support inclusive economic growth. Given the pivotal role of banks as financial intermediaries, environmentally mindful decision-making has become indispensable for ensuring stability and legitimacy within the financial system (Senja Setyoko & Wijayanti, 2022). By embedding sustainability principles into investment, lending, and operational processes, banks can mitigate ecological risks, enhance transparency, and foster public trust (Shaumya & Arulrajah, 2017). Beyond its environmental dimension, green banking contributes to improved operational efficiency, reduced paper consumption, lower transaction errors, and minimized exposure to fraud. These outcomes not only advance ecological objectives but also strengthen institutional credibility, positioning green banking as a vital mechanism for achieving a balance between profitability, accountability, and environmental stewardship in the modern financial sector.

Financial Inclusion

Financial inclusion has emerged as a critical pillar of economic development, emphasizing the integration of marginalized and underserved populations into the formal financial system. It represents a multidimensional process that aims to enhance access to essential financial services—such as savings, payments, and credit—particularly for individuals who were previously unbanked (Adjei et al., 2023; Khub et al., 2024). The United Nations (2016) defines financial inclusion as the provision of affordable financial services that enable individuals, especially those residing in rural and low-income areas, to participate in the formal economy. This perspective underscores financial inclusion not only as a matter of access but also as a means of empowerment and economic participation.

In this context, digital financial inclusion has become increasingly significant, with innovations such as mobile banking and electronic payment systems serving as key enablers for extending financial services to remote and underserved communities (Daragmeh et al., 2021; Khub et al., 2024). However, achieving comprehensive inclusion requires addressing both financial and non-financial barriers. As Kass-Hanna et al. (2022) argue, financial literacy is indispensable for empowering individuals to effectively understand and utilize financial products, while technological accessibility and institutional support remain essential for successful implementation. The development of FinTech platforms further complements these efforts by providing scalable and adaptive tools that facilitate inclusion even during periods of crisis, such as the COVID-19 pandemic.

Ultimately, financial inclusion contributes not only to social empowerment but also to macroeconomic growth by improving capital mobility, expanding credit access, and enhancing economic resilience (Azimi, 2022; Van & Linh, 2019). The success of financial inclusion initiatives depends on robust institutional frameworks and collaborative policy approaches that align government agencies, financial institutions, and technology providers toward the shared goal of building a more inclusive and equitable financial ecosystem (Khuan, 2024; Kurussiveettil & Karuppanagounder, 2024).

Green banking and financial performance

The long-term sustainability and success of a company are profoundly shaped by the support and trust of its stakeholders. Within this framework, stakeholder theory provides a crucial foundation for understanding corporate responsibility, emphasizing that organizations must balance economic objectives with environmental and social obligations. This theoretical lens also underpins the development of sustainability reporting, which serves as a strategic communication tool to disclose non-financial information relevant to stakeholders—particularly in relation to environmental, social, and governance (ESG) performance (Biancone et al., 2025; Del Gesso & Lodhi, 2025; Horisch et al., 2020). Such reporting mechanisms promote transparency, accountability, and alignment with regulatory and normative frameworks, including the European Taxonomy and the United Nations Sustainable Development Goals (Rusu et al., 2024). Through enhanced disclosure, firms are able to demonstrate integrity, strengthen stakeholder confidence, and establish legitimacy within an increasingly sustainability-conscious market environment.

In the banking industry, the adoption of green banking practices represents a tangible manifestation of these principles. Green banking encompasses a financial strategy that integrates ESG criteria into lending and investment decisions, emphasizing environmentally responsible projects and sustainable business operations (Izzo et al., 2025; Uddin & Ahmmed, 2018). By prioritizing green financing, banks can mitigate credit risks associated with unsustainable sectors, improve operational resilience, and reinforce their ethical and environmental credentials (Zairis et al., 2024). Moreover, the implementation of green banking initiatives enhances reputation and investor confidence while attracting socially and environmentally conscious clients. The integration of sustainability objectives within financial decision-making thus reflects a paradigm shift from profit-centered banking to value-based finance—where economic performance, social equity, and environmental stewardship coexist as interdependent drivers of long-term corporate legitimacy and competitiveness. Therefore, based on the theoretical framework and previous empirical findings, that second hypothesis of study is formulated as follows:

H1: Green banking has a positive effect on financial performance

Financial inclusion and bank profitability

Financial inclusion has increasingly been recognized as a strategic driver of both financial performance and institutional stability in the banking sector. It encompasses initiatives that expand equitable access to formal financial products—such as savings, credit, and payment services—through diverse delivery channels, including branch networks and digital platforms. By mobilizing deposits from previously unbanked populations, banks can secure a more stable and diversified funding base, thereby reducing liquidity risks and enhancing their capacity to finance productive investments with higher returns (Ahamed et al., 2021). Moreover, empirical evidence shows that financial inclusion strengthens operational efficiency and promotes financial stability, particularly in environments supported by robust institutional and regulatory frameworks (Ahamed & Mallick, 2019).

The expansion of bank branches plays a pivotal role in achieving these outcomes. A broader physical presence not only widens public access to financial services but also fosters community engagement, improves financial literacy, and promotes local economic empowerment (Geraldes et al., 2022). Through these mechanisms, inclusive banking practices contribute to social cohesion and sustainable financial growth while enhancing banks' reputational capital. Banks that actively pursue financial inclusion tend to experience higher levels of profitability and long-term resilience, as they balance economic objectives with their social responsibility to reduce disparities in financial access. In line with these theoretical insights and prior empirical findings, the study formulate the hypothesis as follows:

H2: Financial inclusion has a positive effect on bank profitability

2. Method

This research employs a quantitative research design to examine the influence of green banking and financial inclusion on the financial performance of commercial banks in Indonesia. The quantitative approach was selected to ensure objectivity and to produce results that are statistically verifiable, enabling the identification of measurable relationships among variables. The study relies entirely on secondary data derived from annual reports and sustainability disclosures of banks operating in Indonesia during the period 2018–2023. These data were collected from credible official sources, including the Indonesia Stock Exchange (IDX), the Financial Services Authority (OJK), and the official websites of the respective banking institutions. The dataset encompasses both financial and non-financial information, focusing particularly on indicators of environmental initiatives, social responsibility, and the availability of banking services, represented by the number of branch offices as a proxy for financial inclusion. The sample was selected using purposive sampling based on the following criteria:

Sample Criteria	Total
Indonesian General Banking	119
Banking that releases Sustainability Report or reports CSR	36
Total banking that meets criteria	36
Outlier data	-9
Sample period 2018–2023 (6 years)	6
Total Sample	162

Source: 2025 processed original data

The target population of this study consists of all commercial banks registered in Indonesia, totaling 119 institutions. However, only those banks that consistently disclosed sustainability or corporate social responsibility (CSR) reports during the observation period were considered suitable for inclusion. Through purposive sampling, 36 banks were initially identified as meeting these criteria. After eliminating outliers that could potentially distort statistical estimation, the final sample comprised 27 banks, yielding 162 panel observations over six years of data. This approach ensures that the selected banks are both representative of the national banking landscape and committed to transparency through sustainability reporting practices.

The research variables were constructed based on validated indicators from prior empirical studies. Financial performance, as the dependent variable, was measured using Return on Assets (ROA), reflecting the bank's ability to generate profits from its total assets. The green banking variable was operationalized through the extent of environmental disclosure, drawing upon the disclosure framework proposed by Bose et al. (2018), while financial inclusion was proxied by the number of branch offices each bank maintained annually.

Data analysis was performed using panel data regression techniques with the aid of EViews software. The analytical process included several stages: descriptive statistical analysis, diagnostic testing for data normality, and the application of model selection tests such as the Chow, Hausman, and Lagrange Multiplier (LM) tests to determine the most appropriate regression model. Based on these diagnostics, the final estimation employed either the Fixed Effect Model (FEM) or Random

Effect Model (REM), depending on the statistical validity of each approach. This methodological framework ensures the robustness, reliability, and interpretive precision of the study's empirical findings.

3. Result

Table 2 presents the descriptive statistics for the main variables employed in this study, namely financial performance, green banking, and financial inclusion. This analysis provides an overview of the central tendency, dispersion, and range of each variable across 162 observations. The descriptive results serve as an initial indication of the variability and distribution patterns within the dataset, forming the basis for subsequent regression and diagnostic analyses.

Table 2. Descriptive Statistics

Variable	Financial Performance	Green Banking	Financial Inclusion
Mean	0.010602	0.589359	0.013668
Maximum	0.034556	1.000000	0.071999
Minimum	-0.009618	0.142857	0.000135
Std. Dev.	0.008054	0.228158	0.013905
Observations	162	162	162

Source: 2025 processed original data

This study employs three main variables: financial performance (Y), green banking, and financial inclusion. Table 2 shows that the average bank performance is 0.010, with a minimum value of -0.009 and a maximum of 0.034. This indicates that while some banks experienced losses, others achieved profitability levels exceeding 3%. The standard deviation of 0.008 suggests that profitability across banks is relatively uniform and not highly dispersed.

For the green banking variable, the mean value is 0.589, with a minimum of 0.142 and a maximum of 1.000, indicating considerable variation in the implementation of green banking practices among banks. The standard deviation of 0.228 supports the presence of this variability. The financial inclusion variable, represented by the number of bank branches, recorded an average value of 0.013, with the lowest value observed at 0.001 and the highest at 0.071. This reflects significant variability in financial inclusion across banks, with most institutions exhibiting relatively low branch penetration. The standard deviation of 0.013 suggests a balanced dataset suitable for further statistical analysis.

The Chow Test was conducted to determine whether the Fixed Effect Model (FEM) is more appropriate than the Pooled Ordinary Least Squares (PLS) model. This test compares the restricted model (PLS) with the unrestricted model (FEM) under the null hypothesis that all cross-sectional effects are redundant, implying that the PLS model is sufficient. The Cross-section F-statistic of 18.307 with a p-value of 0.0000, and the Cross-section Chi-square statistic of 246.477 with a p-value of 0.0000, both fall below the 5% significance level. These results lead to the rejection of the null hypothesis, indicating that cross-sectional effects are significant. Therefore, the FEM is preferred over the Pooled OLS model, as it better captures the unobserved heterogeneity among the banks in the sample. The Chow Test thus confirms that the panel data exhibit substantial individual effects, justifying the use of the Fixed Effect Model for subsequent analysis. This model effectively accounts for the distinct attributes of each bank, allowing for more precise estimation of variations in financial performance.

The Hausman Test was then employed to identify the most appropriate estimation model between the FEM and the Random Effect Model (REM). The null hypothesis (H_0) assumes that the REM is consistent and efficient, while the alternative hypothesis (H_1) favors the FEM. The test yields a Chi-square statistic of 1.559 with 2 degrees of freedom and a p-value of 0.4587, which is greater than the 5% significance level. Since the p-value exceeds 0.05, the null hypothesis cannot be rejected. This indicates no significant difference between the FEM and REM estimators, implying

that the REM is more appropriate and statistically efficient for this dataset. Consequently, the Hausman Test suggests that variations across banks are random and uncorrelated with the independent variables, supporting the use of the Random Effect Model for regression analysis.

Finally, the Lagrange Multiplier (LM) Test developed by Breusch and Pagan was applied to determine whether the REM is more suitable than the Pooled OLS model. The null hypothesis (H_0) assumes no random effects, suggesting that the Pooled OLS model is sufficient, while the alternative hypothesis (H_1) proposes the presence of random effects, favoring the REM. The test results show Breusch-Pagan statistics of 195.370 for the cross-section, 0.969 for the time effect, and 196.340 for both effects. The corresponding p-values are 0.0000, 0.3248, and 0.0000, respectively. As the p-values for the cross-section and both effects are below the 5% significance threshold, the null hypothesis is rejected for these components. This confirms the presence of significant cross-sectional random effects, while time-specific effects are statistically insignificant. Therefore, the results indicate that the REM is more suitable than the Pooled OLS model, as it effectively captures unobserved heterogeneity across banks. The dominance of cross-sectional effects further implies that inter-bank differences are more influential than variations over time, reinforcing the appropriateness of using the Random Effect Model for analyzing how green banking and financial inclusion influence the financial performance of banks in Indonesia.

Test of Normality

In figure 1, the probability value is 0.185, which is greater than 0.05. Therefore, it can be concluded that the data are normally distributed or have passed the normality test.

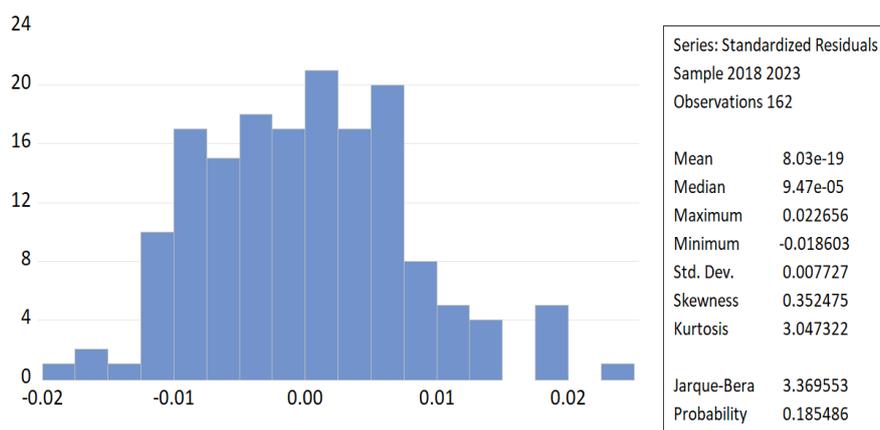


Figure 1. Result of the Normality Test
 Source: 2025 processed original data

Test of Multicollinearity

Table 6. Results of the Multicollinearity Test		
	Green Banking	Financial Inclusion
Green Banking	1.000	0.308
Financial Inclusion	0.308	1.000

Source: 2025 processed original data

The purpose of conducting a multicollinearity test is to identify the presence of strong linear relationships among the independent variables within a regression model. A widely used technique for detecting multicollinearity involves analyzing the correlation coefficients between these variables. When the correlation value between two independent variables exceeds 0.80, it strongly indicates the potential presence of multicollinearity. Based on the correlation analysis between the variables green banking (X1) and financial inclusion (X2), the correlation coefficient was found to be 0.308. This value is well below the 0.80 threshold, indicating no multicollinearity problem

between the two variables. Therefore, it can be concluded that the regression model is free from multicollinearity, and each independent variable can be included in the model without exerting an excessive influence on the other.

Test of Heteroscedasticity

Table 7. Results of the Heteroscedasticity Test

Variable	Coefficient	Std. Error	t-Statistic	Prob.
Green Banking	4.89E-05	0.000640	0.076439	0.9392
Financial Inclusion	0.000934	0.000640	1.460235	0.1462

Source: 2025 processed original data

The heteroskedasticity test is used to assess whether the residuals in a regression model exhibit unequal variance across different observations. If heteroskedasticity is present, the regression estimates become inefficient, although they remain unbiased. In this study, the results of the heteroskedasticity test presented in Table 7 indicate that the t-statistics of all independent variables have probability values greater than the 0.05 significance level. This suggests that there is no significant relationship between the absolute values of the residuals and the independent variables. Therefore, it can be concluded that the regression model does not suffer from heteroskedasticity. In other words, the assumption of homoskedasticity is satisfied, indicating that the model is appropriate for further statistical testing.

Analysis of Regression

Table 8. Results of Multiple Linear Regression

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.005637	0.001730	3.258525	0.0014
X1_N	0.005587	0.001757	3.179756	0.0018
X2_N	0.122269	0.039717	3.078535	0.0025

Source: 2025 processed original data

Based on the regression result presented in the Tabel 8, in regression equation is as follows:

$$Y = 0.005 + 0.005 \text{ Green Banking} + 0.122 \text{ Financial Inclusion} + \epsilon$$

The constant value of 0.005 indicates that when both green banking and financial inclusion are zero, the predicted financial performance (Y) equals 0.005. The green banking variable (X1) has a coefficient of 0.005 with a probability value of 0.001, which is less than the 0.05 significance level. This implies that green banking exerts a positive and statistically significant effect on bank profitability. In other words, enhancing green banking practices tends to improve banks' financial performance. Additionally, the financial inclusion variable (X2) has a coefficient of 0.122 with a probability value of 0.002, also below the 0.05 threshold, indicating a positive and significant influence on profitability. This finding suggests that a higher level of financial inclusion contributes significantly to enhancing the financial performance of banks.

Godness Of Fit Test

Fractional Parameter Centrality Test (t-Test)

The results of the partial significance test (t-test) presented in Table 8 indicate that green banking (X1) significantly influences the financial performance of banks. This is evidenced by a coefficient of 0.005 and a t-statistic of 3.138. The corresponding p-value of 0.001, which is less than the 0.05 significance level, confirms that the effect is statistically significant. Similarly, another variable, financial inclusion (X2), shows a coefficient of 0.122, a t-statistic of 3.078, and a p-value of 0.002, further confirming a positive and significant relationship. These findings suggest that both green banking and financial inclusion are key determinants of bank profitability in Indonesia.

F-Test

The F-test is used to evaluate whether the group of independent variables in the model jointly affects the dependent variable. As presented in Table 8, the F-statistic is 10.381 with a significance value

(p-value) of 0.000. Given that this value is less than the 5% significance level, it indicates that green banking and financial inclusion have a significant simultaneous effect on the financial performance of banks. This finding suggests that the regression model, as a whole, is valid in explaining how these variables collectively influence bank performance.

Coefficient of Determination (R Square)

According to Table 8, the R-squared value is 0.115, indicating that green banking and financial inclusion collectively explain approximately 11.55% of the variability in bank profitability. Although this value is modest, the remaining 88.45% is influenced by other variables not included in the current analysis. This suggests that bank profitability is also shaped by various complex factors that should be explored in future research.

4. Discussions

Green Banking and Financial Performance

The coefficient value for the Green Banking (X1_N) variable is 0.005587, with a t-statistic of 3.179756 and a corresponding p-value of 0.0018. Since the p-value is below the 0.05 significance threshold, H1 is accepted. This finding indicates that green banking exerts a positive and statistically significant effect on bank profitability. The result suggests that the implementation of environmentally responsible banking practices enhances the financial performance of banks in Indonesia by improving efficiency, reputation, and risk management. This supports the idea that integrating sustainability into banking operations can positively contribute to financial success. In line with stakeholder theory, banks hold responsibility not only to shareholders but also to the broader community and the environment. Green banking demonstrates a commitment to environmental and social issues, thereby building public trust and enhancing reputation—both of which are key drivers of customer loyalty and investor confidence. Such trust can, in turn, increase third-party funds, stimulate financial transactions, and promote sustainable financing, ultimately improving profitability. These findings are consistent with those of Bose et al. (2021) and Appiah et al. (2025), who also identified a positive relationship between green banking practices and financial performance.

Financial Inclusion and Financial Performance

The Financial Inclusion (X2_N) variable has a coefficient of 0.122269, a t-statistic of 3.078535, and a p-value of 0.0025. As the p-value is also lower than 0.05, H2 is accepted. This implies that financial inclusion has a positive and significant influence on bank profitability. In other words, expanding access to financial services—such as through branch network development—contributes to greater financial stability and performance by broadening the customer base and increasing deposit mobilization. The study also found that financial inclusion, as measured by the number of bank branches, has a significant impact on bank performance. Broader branch networks enhance customer outreach, including in remote areas, by facilitating savings mobilization, credit access, and financial transactions. This expansion increases the overall volume of banking activities and contributes to higher revenue generation. These findings are consistent with those of Liang et al. (2024) and Kuehn (2020) who observed that a greater number of branches expands market share, leading to higher savings, lending, and overall bank income. This result also aligns with stakeholder theory, which underscores the importance of addressing community interests. Expanding physical access to banking services strengthens financial inclusion, which, in turn, enhances deposit growth, credit distribution, and overall bank profitability.

5. Conclusion

This study provides empirical evidence that green banking and financial inclusion significantly enhance the financial performance of banks in Indonesia. The findings confirm that the integration of sustainability principles into banking operations not only fulfills environmental and social responsibilities but also contributes directly to profitability. Banks that adopt green banking practices—including environmentally responsible financing, operational efficiency, and transparent sustainability reporting—achieve stronger financial outcomes. This supports the premise of stakeholder and legitimacy theories, which emphasize that banks must create value not only for

shareholders but also for society and the environment. The results also demonstrate that financial inclusion, represented by the number of bank branches, exerts a positive and significant influence on profitability. Expanding branch networks increases public access to financial services, particularly in underserved areas, thereby promoting savings, credit utilization, and transaction volumes. These findings suggest that inclusive banking practices strengthen both the social role and financial sustainability of banks, highlighting the synergistic relationship between profitability and inclusivity in achieving sustainable economic development.

Despite its contributions, the study acknowledges a limitation in its explanatory power, suggesting that other factors—such as digital transformation, corporate governance, or risk management—may further influence bank performance. Future research should explore these dimensions and extend the analysis to cross-country comparisons to capture institutional and regulatory diversity. This study contributes to the growing discourse on sustainable finance by bridging the empirical gap between green banking and financial inclusion. The findings offer practical insights for policymakers and banking practitioners, emphasizing that long-term financial success increasingly depends on the alignment of profitability with environmental stewardship and inclusive growth.

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