

THE INFLUENCE OF SUSTAINABILITY REPORTING AND RISK MANAGEMENT ON THE PROFITABILITY OF PUBLICLY LISTED BANKS

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Article Info	Abstract
<p>Article History: Submission : 09-08-2025 Accepted : 21-01-2026 Online Publication : 26-01-2026</p> <hr/> <p>Keywords: <i>sustainability reporting, risk management, profitability, financial performance, banking sector</i></p> <hr/> <p>Citation: Janice, L., & Handoko, J. (2026). The Influence of Sustainability Reporting and Risk Management on the Profitability of Publicly Listed Banks. <i>Jurnal Akuntansi</i>, 14(2), 184-196.</p> <hr/> <p>DOI https://doi.org/10.46806/ja.v14i2.1495</p> <hr/> <p>URL: https://jurnal.kwikkiangie.ac.id/index.php/JA/article/view/1495</p>	<p><i>This study examines the influence of sustainability reporting and risk management on the profitability of Indonesian publicly listed banks on the Indonesia Stock Exchange (IDX) during 2019 to 2023. The study evaluates the causal relationship between dependent variable, which is the profitability (measured by ROA and ROE) and independent variables, including sustainability reporting disclosure and CAR, NPL, and LDR. This study also uses control variables, such as leverage (DER), bank size, and COVID-19 period. By exploring whether banks' commitment to sustainability reporting and effective risk management practices contribute to their profitability, the study provides valuable insights for stakeholders, policymakers, and investors seeking to improve corporate performance. The research data are analyzed using descriptive statistics and panel regression with SPSS. Through purposive sampling, 70 banking companies were selected. The findings reveal that sustainability reporting does not significantly impact the profitability of Indonesian publicly listed banks. While risk management was measured with three proxies, with NPL having a significant impact, CAR and LDR showed mixed findings with significance and nonsignificance on profitability. Additionally, bank size and the COVID-19 period which serve as control variables significantly influenced the relationship between the independent and dependent variables.</i></p>



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1. Introduction

The banking sector, including Indonesia, is widely recognized as the core of any country's financial system due to its critical role in economic development and stability. This statement is supported by Levine (1997), who believes that well-developed financial systems are crucial for fostering economic growth. Advanced financial systems, including robust banking sectors, tend to accelerate and sustain economic growth. Consequently, countries with more enhanced financial systems will experience more rapid and stable economic growth and are more likely to have stable economies (Levine, 1997; Strobbe et al., 2023). Economic stability is fundamental to a country's overall health and growth. To advance the financial sector in Indonesia, new policies and institutional reforms are continuously upgraded and adjusted to enhance the fundamental part of the finance sector in supporting the real economy. These include increasing the funding base, expanding the usage of financial services, ensuring that savings are channelled into productive investments, and maintaining financial stability through a conducive financial sector architecture (Strobbe et al., 2023).

Economic stability, including in Indonesia, is significantly influenced by the banking industry's financial performance (Ketaren & Haryanto, 2020; Effendi, 2021). Financial performance is a critical indicator of economic stability because it reflects how effectively banks collect funds from the public and companies

and channel them into productive activities across various economic sectors, thereby boosting national and community income. Optimal and efficient management of fund-raising and lending activities directly contributes to a bank's profitability, aligning with its primary goal of achieving profitability (Ramadhanti et al., 2019). Assessing this performance provides valuable insights into the country's broader economic landscape.

A stable banking sector can cushion the economy against shocks and contribute to sustainable economic growth (Levine, 1997). Profitability is frequently used to assess the financial performance of banking institutions as it can show level of effectivity on how a bank is using its assets and equity to create profits, with Return on Assets (ROA) and Return on Equity (ROE) being the key indicators of the stability in banking sector (Ali et al., 2021; Nathanael et al., 2023). These metrics provide insights into understanding banks' ability to generate income, manage risks, and sustain operations in the face of economic fluctuations (Abdurrohman et al., 2020; Sunaryo, 2020; Fachri et al., 2022). High profitability in banks attracts foreign investment, fosters economic confidence, and supports the government's economic policies. On the other hand, weak performance can deter investment, trigger capital flight, and destabilize the economy (Harb et al., 2022; Keter et al., 2024).

Given this focus, it is essential for banks to adapt to the evolving expectations of stakeholders. Global awareness about sustainability and concerns about risk management have become pivotal in response to growing demands for greater stakeholder transparency and accountability (Baldissera, 2023; Ahmad & Teo, 2024). These factors are crucial for maintaining financial health and competitive advantage in the banking sector, thereby shaping the financial performance of banking institutions (Oncioiu et al., 2020; Effendi, 2021). Thus, integrating sustainability reporting and strong risk management practices is essential for enhancing the profitability of banks in Indonesia (Buallay, 2020; Oncioiu et al., 2020; Ramadhanti et al., 2019; Ali et al., 2021; Harb et al., 2022; Sunaryo, 2020; Nathanael et al., 2023).

This study will explore the influence of sustainability reporting and risk management from two theories. First is stakeholder theory, which posits that organizations must create value for all stakeholders, not just shareholders, which is particularly relevant in this context. This theory, initially articulated by Freeman and McVea (2001), highlights how crucial it is to strike a balance between the interests of different groups, including employees, customers, suppliers, communities, government bodies, and the environment, in order to achieve sustainable long-term success. Hence, to address stakeholder concerns by showing the company's dedication to sustainable practice, therefore making sustainability reporting is a crucial instrument (Buallay, 2020).

Second is the agency theory which inspect the correlation between principals (owners/shareholders) and agents (managers), proposed by Jensen & Meckling (1976), which potentially can lead to a conflict of interests due to differing objectives. Thus, risk management metrics such as the Loan-to-Deposit Ratio (LDR), Non-Performing Loan (NPL) ratio, and Capital Adequacy Ratio (CAR) are crucial in matching the interests of agents (managers) with those of principals (shareholders) to enhance profitability. These metrics serve as tools for monitoring bank's risk and ensuring managers operate within risk levels acceptable to shareholders. Thus, implementing effective risk management can align agents' actions with the principals' goal of optimizing profitability while maintaining acceptable risk levels (Sitompul & Nasution, 2019).

In recent years, the publishment of sustainability reporting in the banking sector has gained significant attention, particularly the Indonesian Financial Services Authority (OJK), which has made it clear that sustainability reporting is not just a voluntary initiative but a regulatory requirement. OJK Regulation No. 51/POJK .03/2017 requires that banks and other sectors publicly listed in Indonesia to publish sustainability reports, reflecting a growing global recognition of the need for transparency and accountability in managing environmental, social, and governance (ESG) risks. These reports provide stakeholders with clear insights into how banks seriously measure sustainability issues, which are increasingly critical to public image and reputation as well as competitive advantage, ultimately to attract investors to invest in transparent entities (Oncioiu et al., 2020; Almunadiya & Widyawati, 2023).

This push for disclosure is grounded in the understanding that transparency in sustainability reporting positively impacts company performance. Success is more achievable when companies commit to sustainably addressing environmental, social, and economic interests, creating a long-term value for all stakeholders (Almunadiya & Widyawati, 2023). However, despite this regulatory push, the adoption of sustainability reporting across Indonesia's banking sector has yet to be fully implemented. While some banks have embraced the initiative, recognizing its potential to enhance corporate reputation and stakeholder trust and align with global trends, others have been slow to comply. Thus, the challenge lies in bridging the gap between regulatory requirements and the actual integration of sustainability practices within the core operations of firms (Buallay, 2020; Baldissera, 2023).

The effect of publishing sustainability reporting on banks' financial performance has been the subject of earlier research, aside from enhancing the bank's reputation and building stakeholder trust, which can lead to increased investment. Sustainability reporting can drive operational efficiencies by encouraging companies to optimize resource use and reduce waste, lowering costs and improving margins, ultimately leading to improved profitability (Buallay, 2020; Oncioiu et al., 2020). However previous researches have presented mixed findings on the importance of bank's sustainability reporting on profitability, which resulted in contradictory findings. For instance, the study by Oncioiu et al. (2020) and Almunadiya & Widyawati (2023) concluded that CSR reporting can enhance financial performance by reflecting corporate social responsibility practices and promoting efficient CSR practices. There is a positive relation between corporate sustainability reporting and financial performance, which suggests that banks that engage in sustainability practices tend to have higher ROA as the proxy. And a contradictory study by Buallay (2020) reported that a higher level of ESG has a negative influence on ROA as the proxy for bank's financial performance.

Risk management is a variable that is believed affect the rise and fall of banking profitability performance. Risk management is identifying and evaluating the loss liability that a business entity may face and then adopting appropriate strategies to address that liability (Ali et al., 2021). All banking sectors, therefore, require an adequate and effective risk management system in effect to protect investors' profits, attract new investors, and eventually enhance profitability (Harb et al., 2022).

Risk that can impact on banking sector is comprised of credit risk, market risk, liquidity risk, operational risk, legal risk, reputation risk, strategic risk, and compliance risk, per PBI No. 11/25/PBI/2009. However, in this study, only credit risk and liquidity risks are further discussed through Harb et al.'s (2022) study that revealed liquidity risk management and credit risk management are important during financial crisis. On the other hand, capital adequacy was selected because it protects banks by taking on losses, which can positively affect stability and help to prevent negative consequences from unstable banks (Nathanael et al., 2023). Based on this focus, risk management is identified from the credit risk ratio, liquidity ratio, and capital adequacy to make sure the stability and sustainability of banks (Ramadhanti et al., 2019; Saputra et al., 2020; Ali et al., 2021; Harb et al., 2022).

Since credit risk arises when a client obtains a credit facility but is unable to make full payment, the non-performing loans ratio is used as a stand-in for determining the percentage of loans in a bank's portfolio that are in default (Saputra et al., 2020). A high NPL ratio means negatively impact the bank's profitability as banks suffered losses when the customer cannot pay back the credit (Ramadhanti et al., 2019; Nathanael et al., 2023).

The capital adequacy ratio is a proxy for analyzing a proper management of banks' sufficient capital in case of losses (Saputra et al., 2020; Harb et al., 2022). The capital adequacy depends on the assets portfolio. A higher CAR indicates the healthier the bank is as it has sufficient capital to channel more credit, which leads to the bank generating profit from its lending activities (Ramadhanti et al., 2019; Harb et al., 2022).

Loan to deposit ratio is the proxy for liquidity risk as it can be used to see how well a bank utilizing the money received from customer deposits to generate credit facility in order to fulfill customer's credit requests (Saputra et al., 2020; Nathanael et al., 2023). According to Ramadhanti et al. (2019) and Sunaryo (2020), a higher LDR indicates that the bank holds many liquid assets, meaning the bank can channel more funds to give credit facilities to increase profitability through loan interest.

As effective risk management is a cornerstone of financial stability, where the ability to navigate economic turbulence can mean the difference between resilience and collapse. In Indonesia, Bank Indonesia (BI) has established critical regulatory standards, including the Capital Adequacy Ratio (CAR), Non-Performing Loan (NPL) ratio, and Loan-to-Deposit Ratio (LDR), to ensure the resilience of banking institutions. These regulations are designed not merely as formalities but as essential tools for safeguarding the banking system. By requiring banks to hold sufficient capital against their risks, manage credit quality diligently, and balance liquidity needs, BI's framework is essential in maintaining the health and stability of the financial sector, especially during periods of economic uncertainty.

The significance of these regulatory requirements was particularly evident during the time of COVID-19 pandemic, a period for severe economic disruptions and heightened financial uncertainty. As many businesses and people struggled during the COVID-19 pandemic, banks were at great danger of default, which resulted in banks' operations being disrupted (Chodnicka-Jaworska, 2023). If banks adhered to BI's standards by maintaining strong CAR, controlled NPL ratios, and balanced LDR, they would be better positioned to weather the storm. Because of the regulation, these institutions were supposed to be able to absorb losses, maintain liquidity, and continue lending, thereby playing a crucial role in stabilizing the economy during a time of crisis (Ghenimi et al., 2017; Chodnicka-Jaworska, 2023).

However, the pandemic also highlighted disparities in how well banks adhered to these regulatory standards. Those with weaker risk management practices faced more significant challenges in maintaining solvency and liquidity, exposing them to higher risks during the economic downturn. This phenomenon underscores the critical importance of regulatory compliance, not just as a legal obligation but as a fundamental aspect of financial health and crisis preparedness. Strengthening risk management activities is needed for the bank's survival and stability, particularly during this pandemic (Effendi, 2021).

Given this context, this paper explores the role of Bank Indonesia's regulations on CAR, NPL, and LDR in shaping the risk management practices of Indonesian banks, using the COVID-19 pandemic as an example of study. By analyzing the impact of these standards during the pandemic, this study seeks to illustrate how well risk management frameworks can safeguard banks against economic downturns and contribute to the overall stability of the financial system. By noting that COVID-19 period has effect on bank's operation, this study will use COVID-19 as control variable to assess the resilience of Indonesian banks's profitability in the amidst of financial uncertainty (Effendi, 2021; Sakinah & Pangestuti, 2023). By doing so, this study will explore more about the robust risk management practices, which are believed vital for reducing possible risks that can have an effect on financial performance (Catherine, 2020; Ahmed et al., 2021), particularly during crises COVID-19.

Numerous research endeavors have examined the correlation between risk mitigation in banking and financial performance, yielding diverse findings (Ramadhanti et al., 2019; Ali et al., 2021; Harb et al., 2022; Sunaryo, 2020; Nathanael et al., 2023), revealed divergent impacts of risk management practices, capital adequacy, and liquidity on the banks' financial performance, suggesting divergent outcomes. Given those contradictory findings, a further research to understand the relationship between sustainability report system, risk management practices, and bank profitability better is a necessity. The research objects will be Indonesian banking sectors, as specific studies focusing on Indonesian banking institutions are limited, with 2019-2023 firm years as a five years period can see the different between before, during, and after COVID-19.

In order to close this research gap, this study looks at how sustainability reporting and risk management influence Indonesian banking companies' profitability on the IDX. Thus, stakeholders including creditors, investors, regulators, and the banking sector will find valuable information in the study's findings. In addition to COVID-19 period as control variable, this study will also use specific aspects that might affect profitability such as bank size and Debt to Equity Ratio as the proxy for leverage as control variables (Harb et al., 2022). Bank size is referred to the size of a bank's assets or wealth owned by the bank according to Nathanael et al. (2023). Natural logarithm of total bank assets is measurement for bank size. The size of a bank may impact many aspects of its operations and strategy. Large banks have a significant capacity to provide various financial services and significantly impact the financial sector. On the other hand, leverage measured by the DER, reflects the bank's capital structure and its risk management approach. A higher DER indicates a greater reliance on debt, which can affect the bank's profitability (Arayssi & Jizi, 2019).

On that note, this study seeks to answer the following research questions: Does sustainability reporting affect the profitability of Indonesian publicly listed banks on the IDX, and do risk management practices affect the profitability of Indonesian publicly listed banks on the IDX?

2. Literature Review

2.1. Stakeholder Theory

Stakeholder theory, articulated by Freeman and McVea (2001), states businesses should create value and take into account the interests of all parties involved, not just shareholders, in their decision-making. Stakeholders consist of any group or individual impacted by the organization's activities, such as employees, customers, suppliers, communities, government bodies, and the environment. Traditionally, businesses only prioritized shareholders' interests, focusing on maximizing profits. However, this limited perspective may lead to short-term decision-making and ignore broader social and environmental impacts. As businesses face increased scrutiny for their social and environmental effects, the need for sustainable and ethical business practices has become apparent (Freeman and McVea, 2001).

Committing to stakeholder interests involves implementing fair labour practices, adopting environmentally friendly processes, and maintaining transparent communication with stakeholders (Baldissera, 2023). This approach encourages businesses to consider their long-term impacts on society and the environment, which is particularly relevant in today's business environment, where sustainability is a critical component of corporate strategy (Buallay, 2020).

Publishing sustainability reports is a key aspect of stakeholder theory, as these reports provide transparency and communication about environmental, social, and governance (ESG) performance of an

organization. This transparency promotes trust and credibility for all stakeholders—investors, employees, customers, regulators, and local communities (Oncioiu et al., 2020; Almunadiya & Widyawati, 2023). Sustainability reporting often leads to improved internal processes, aligning with stakeholder theory's emphasis on creating value for all stakeholders and driving positive changes in corporate behaviour and strategy (Buallay, 2020).

In the banking sector, disclosing sustainability initiatives can attract environmentally and socially conscious customers and investors, enhance the bank's reputation, and foster stakeholder trust. This comprehensive sustainability reporting can lead to increased business opportunities and improved profitability (Oncioiu et al., 2020; Almunadiya & Widyawati, 2023).

2.2. Agency Theory

Jensen & Meckling's (1976) investigation of agency theory looks at the interaction between principals (owners/shareholders) and agents (managers). This theory suggests that while agents are hired to act on behalf of principals, differences in interests and information asymmetry can lead to agents not always acting in the best interests of principals. When agents know more about their company's operations and financial situation than principals do, information asymmetry unfolds, creating opportunities for managers to prioritize personal interests over shareholders' goals. Effective risk management is crucial to align the interests of managers and shareholders, mitigating risks caused by information asymmetry through robust frameworks that ensure responsible and transparent management (Jensen & Meckling, 1976).

In the context of publicly listed banks, agency theory highlights potential conflicts between bank managers and shareholders and the role of information asymmetry in shaping bank practices and performance. Managers often have more detailed information about the bank's loan portfolio quality, risk exposure, and overall financial health than shareholders, leading to moral hazard where banks might take on excessive risk. This situation can result in financial crises and loss of public trust. Regulatory bodies impose strict risk management practices on banks to mitigate these risks, emphasizing transparency and accountability (Harb et al., 2022; Chen, 2023; Irawati & Maksum, 2018).

Banks must proactively manage these risks to maintain stability and improve profitability. Risk management is critical in addressing conflicts of interest between management and shareholders by ensuring transparency and accountability, aligning interests, and mitigating agency problems. A strong risk management framework provides several benefits, including reducing exposure to unexpected financial losses, fostering stakeholder trust, supporting better decision-making, and maintaining optimal capital levels and liquidity (Chen, 2023; Ahmed et al., 2021; Harb et al., 2022). Overall, risk management practices in publicly listed banks are essential for aligning managers' actions with shareholders' interests, ensuring long-term stability and profitability despite challenges and opportunities (Sitompul & Nasution, 2019).

2.3. Financial Performance

Financial performance calculates a company's financial health and the capability to earn profit, providing insights into how well it manages assets and liabilities (Keter et al., 2024). Key financial performance indicators include profitability, liquidity, solvency, and efficiency, assessed using financial metrics and ratios from financial statements (Ramadhanti et al., 2019). These metrics assist stakeholders in assessing the company's capability to control risks, preserve liquidity, and produce sustainable returns.

Profitability, as a reliable indicator, reflects a company's efficiency in generating profit compared to its revenue, assets, and equity (Ahmed et al., 2021). Metrics like Return on Assets (ROA) and Return on Equity (ROE) are critical for assessing profitability. ROA assesses operational efficiency, while the bank's capacity to produce returns on invested capital is indicated by ROE (Ali et al., 2021; Sunaryo, 2020; Nathanael et al., 2023). Strong profitability attracts investment, builds public confidence, and supports economic stability (Catherine, 2020; Ramadhanti et al., 2019).

High ROA suggests efficient resource utilization, while high ROE demonstrates effective equity leverage (Buallay, 2020; Effendi, 2021). These metrics provide stakeholders with valuable insights into the institution's financial resilience, influencing informed decision-making.

2.4. Sustainability Reporting

In financial reporting, mandatory reporting involves legally required disclosures, such as financial statements, to ensure transparency and accountability, with failure to comply resulting in penalties (Suwardjono, 2005). Voluntary reporting, like sustainability reporting, goes beyond these requirements to

enhance transparency and build stakeholder trust (Suwardjono, 2005). Sustainability reporting has been gaining prominence as stakeholders increasingly consider ESG factors in decision-making (Almunadiya & Widyawati, 2023; Baldissera, 2023).

Sustainability reporting has evolved into a strategic tool for disclosing ESG performance, fostering transparency, accountability, and stakeholder trust, which enhances corporate reputation (Oncioiu et al., 2020). Regular reporting helps identify operational inefficiencies, attract socially conscious investors, ensure compliance, and drive innovation, positioning businesses for long-term success (Buallay, 2020; Oncioiu et al., 2020; Almunadiya & Widyawati, 2023). As regulatory requirements and stakeholder expectations evolve, comprehensive sustainability reporting becomes integral to corporate strategy, helping organizations navigate challenges and maintain trust (Buallay, 2020; Oncioiu et al., 2020).

2.5. Risk Management

Risk management helps businesses identify, assess, and mitigate risks that could negatively impact the organization and its stakeholders. It should consider all potential effects, not just financial risks to shareholders, to support organizational stability and long-term success (Chen, 2023; Ahmed et al., 2021). Effective risk management enables informed decision-making, efficient resource allocation, and the ability to navigate uncertainties confidently (Chen, 2023). Companies that proactively address risks can better anticipate challenges, adapt to market changes, and seize opportunities (Ali et al., 2021; Chen, 2023).

Risk management provides numerous benefits, including enhanced decision-making, organizational preparedness, and investor confidence. Transparent risk reporting builds credibility with shareholders and attracts investors (Ahmed et al., 2021; Harb et al., 2022). Main risk categories include financial, operational, strategic, and compliance risks (Ahmad & Teo, 2024). In banking, key risks are market, credit, and liquidity risks (Chen, 2023).

In order to preserve financial stability, profitability, and regulatory compliance, these risks must be effectively managed (Harb et al., 2022; Chen, 2023). This study measures risks quantitatively using proxies: Capital Adequacy Ratio (CAR) for financial health, Non-Performing Loan (NPL) ratio for credit risk management, and Loan to Deposit Ratio (LDR) for liquidity assessment (Abdurrohman et al., 2020; Saputra et al., 2020; Fachri et al., 2022; Nathanael et al., 2023).

2.6. Leverage, Bank Size, and Reseach Data Period

The correlation between ESG disclosure practices, financial structure, and profitability is examined by the leverage theory. Implementing ESG initiatives often requires substantial financial investment, impacting short-term profitability (Risal et al., 2024). Companies with higher Debt to Equity Ratios face increased pressure to maintain transparent ESG practices to sustain investor confidence (Arayssi & Jizi, 2019). This suggests that successful ESG implementation requires a careful balance between financial structure and sustainability commitments, with companies needing to strategically align their ESG disclosure practices with their overall financial capacity and risk management objectives (Arayssi & Jizi, 2019; Risal et al., 2024).

A bank's size is determined using the natural logarithm of its total assets, influences operational capabilities and performance. Larger banks can achieve economies of scale and greater operational efficiency. However, beyond certain thresholds, they may face operational challenges and regulatory requirements (Nathanael et al., 2023; Harb et al., 2022; Risal et al., 2024). Larger banks must manage complex structures, affecting risk management capabilities (Irawati & Maksum, 2018).

The COVID-19 pandemic significantly impacted global banking operations, including in Indonesia. The pandemic introduced challenges such as reduced business activities and higher impairment. Effective risk management during the pandemic is crucial for banks to meet regulatory requirements and ensure survival (Chodnicka-Jaworska, 2023; Effendi, 2021). Banks with better regulatory environments and institutional quality showed resilience to pandemic-related shocks (Sakinah & Pangestuti, 2023).

2.7. Hyphotesis Development

2.7.1. Sustainability Reporting's Impact on Bank Profitability

Many research studies have recommended that companies must take action in disclosing non-financial information to increase the value companies which is by now, the trend is publishing sustainability reporting (Oncioiu et al., 2020; Almunadiya & Widyawati, 2023; Baldissera, 2023). The scope and caliber of banks' sustainability reporting practices are reflected in the disclosure index of the GRI standards. A higher index score indicates more comprehensive and transparent sustainability reporting, which is believed to positively

influence financial performance through enhanced public image and reputation to improve sustainability (Oncioiu et al., 2020). Thus, it's expected that a company's financial performance is positively impacted when environmental, social, and governance factors are disclosed in sustainability reports because this builds stakeholder trust and satisfaction (Oncioiu et al., 2020). The following is how the hypothesis can be developed in light of the above explanation:

H1. Sustainability reporting has a positive effect on the bank's profitability.

2.7.2. The Impact of Risk Management on Bank Profitability Using Capital Adequacy Ratio (CAR), Non-Performing Loan (NPL) Ratio, and Loan to Debt Ratio (LDR) as Proxies

Managing risks well is essential to maintaining profitability. This statement is evidenced by the study of Harb et al. (2022) which said that a high-risk management practice will have a positive effect on profitability, demonstrating that banks with robust risk management frameworks are better equipped to gain a competitive advantage, and as a result, a higher profitability. This study will use three proxies for measuring bank's risk management, they are: Capital Adequacy Ratio (CAR), Non-Performing Loan (NPL) ratio, and Loan to Debt Ratio (LDR).

The Capital Adequacy Ratio (CAR) is a crucial indicator of a bank's financial performance, specifically in relation to its profitability. Greater capital base and decreased insolvency risk are the signs shown by a higher CAR, suggesting a better risk management capability. Studies have consistently shown that a higher CAR positively impacts bank performance, as measured by ROA (Ramadhanti et al., 2019; Sunaryo, 2020; Ketaren & Haryanto, 2020; Nathanael et al., 2023). This relationship often goes along with aiding banks maintain enough capital to cover possible losses, which is related to CAR's role. This improves banks' financial stability as well as their ability to effectively manage risks. Consequently, a high CAR reflects strong risk management practices, which ultimately contribute to improved profitability by enabling banks to navigate financial challenges more effectively and capitalize on growth opportunities with greater confidence. Consequently, the following is the formulation of the hypothesis:

H2a. Capital Adequacy Ratio (CAR) has a positive effect on the bank's profitability.

The second proxy is Non-Performing Loan (NPL), is a credit that is not able to be paid back due to circumstances beyond the debtor's control. Non-performing loan (NPL) ratios are generally negatively correlated with return on assets (ROA) because higher NPL ratios indicate a larger percentage of a bank's loan portfolio is at risk of default. The bank's profitability (ROA) is lowered as a result of the increased loan loss provisions, higher risk management expenses, and lower interest income from non-performing assets brought on by the increase in default risk. Consequently, a high NPL means poor asset quality and a higher risk of financial instability, reflecting a lower financial performance. This adverse relationship is supported by studies of Ramadhanti et al. (2019), Ketaren & Haryanto (2020), and Nathanael et al. (2023). Therefore, a low NPL ratio is indicative of strong risk management practices within a bank, as it suggests effective loan assessment, monitoring, and recovery processes. By maintaining a low NPL ratio, banks can minimize potential losses, reduce associated costs, and maintain a healthier loan portfolio, which ultimately enhances their profitability and overall financial stability. Therefore, the following is how the hypothesis can be developed:

H2b. Non-Performing Loan (NPL) ratio has a negative effect on the bank's profitability.

The Loan to Debt Ratio (LDR) compares the amount of credit that has been extended to the total amount of public and private capital utilized (Fachri et al., 2022). An increased LDR indicates that a bank is lending out a larger portion of its deposits, which can increase profitability (ROA) by increasing loan interest income. A very high LDR, however, could also be a sign of likely liquidity problems, which could have a negative impact on profitability. Thus, it is essential to have the ideal LDR in order to keep profitability and liquidity risk in control. A research done by Nathanael et al. (2023) found a positive effect, suggesting that efficient lending practices might enhance profitability. Therefore, a high LDR, when carefully managed within appropriate limits, reflects strong risk management practices. It demonstrates a bank's ability to maximize its lending capacity while maintaining adequate liquidity, effectively balancing the pursuit of profitability with the management of potential risks. This balanced approach ultimately enhances the bank's overall financial performance and stability. Due to this, the hypothesis can be developed in the following ways:

H2c. Loan to Debt Ratio (LDR) has a positive result on the bank's profitability.

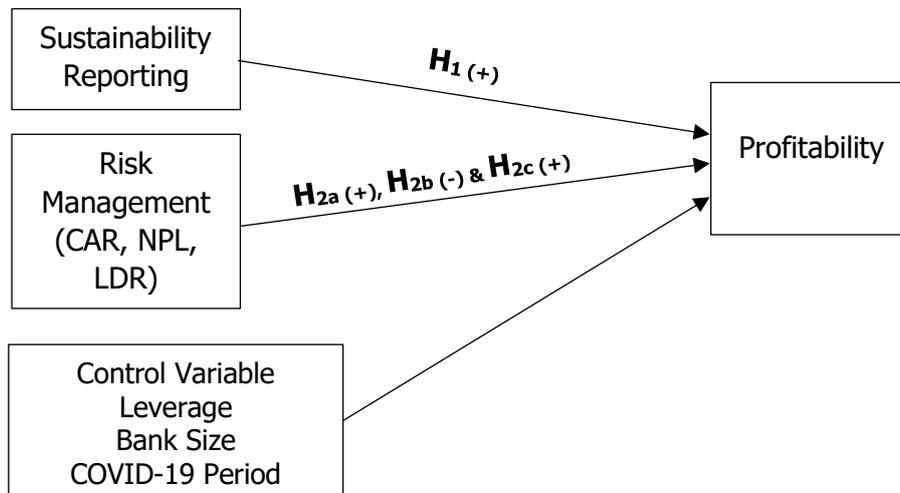


Figure 1. Research Model. Source: Research, 2024

3. Research Methodology

The research design for this paper tests the causal relationship in two steps: first using ROA to investigate the correlation between independent and control variables, then using the same methodology with ROE as the dependent variable. The methodology employs quantitative approach, utilizing secondary data sources, specifically the publicly listed banking companies' annual reports and sustainability reports from Indonesia Stock Exchange (BEI) for the years 2019-2023 along with Bloomberg database, using purposive sampling as the sampling technique, which is shown in the Tabel 1.

Table 1. Purposive Sampling

Description	Total
Banking companies that are listed in IDX	47
Unqualified criteria:	
a. Banking companies listed on the Indonesia Stock Exchange (IDX) for the 2019–2023 period	(4)
b. Banking companies that have continuously published sustainability reports from 2019–2023	(18)
c. Complete data (no missing data for ESG Score for 5 years in constructive)	(11)
Number of companies that met criteria	14
Observation period	5
Number of observations	70
Outlier data	(12)
Number of samples to be processed	58

Source: Banking companies official website, IDX, Bloomberg (2023)

The quantitative secondary data used in this study was gathered from the annual reports of banking companies that were listed between 2019 and 2023 on the Indonesia Stock Exchange (IDX). The financial data is obtained from www.idx.co.id, the official IDX website, and the respective banks' official websites. Additionally, sustainability reporting disclosures are measured using Bloomberg's ESG scores to ensure reliability in measuring environmental, social, and governance (ESG) performance.

In 2023, there are 47 banking companies that was listed on the Indonesia Stock Exchange (IDX). Based on predefined sampling criteria, 14 companies met the requirements, resulting in a total of 70 company-year observations over the 2019–2023 period. However, after conducting classical assumption tests, 12 outlier observations were identified and removed, leaving a final sample of 58 observations for analysis.

The data analysis was performed using SPSS to remove the 12 outlier data, which starting from descriptive statistics to summarize the dataset in order to give a comprehensive data distribution, and frequency statistics to describe the dummy variable, enabling a better understanding before proceeding to more complex analyses. After that, a panel regression analysis was conducted twice to gain an understanding into how the

independent and dependent variables (ROA and ROE) related to each other. These independent variables include ESG disclosure, Capital Adequacy Ratio (CAR), Non-Performing Loan ratio (NPL), Loan to Deposit Ratio (LDR), Debt to Equity Ratio (DER), bank size, and the COVID-19 period. Therefore, the regression model equations are designed to predict how these independent variables influence profitability outcomes. The data analysis also assessed the regression model's validity and reliability through classical assumption tests and the appropriateness of the regression model using feasibility tests (Ghozali, 2021).

The regression model equation is expressed as follows:

$$ROA_{i,t} = \alpha + \beta_1 ESG_{i,t} + \beta_2 CAR_{i,t} + \beta_3 NPL_{i,t} + \beta_4 LDR_{i,t} + \beta_5 DER_{i,t} + \beta_6 SIZE_{i,t} + \beta_7 COVID_{i,t} + \epsilon_{i,t}$$

$$ROE_{i,t} = \alpha + \beta_1 ESG_{i,t} + \beta_2 CAR_{i,t} + \beta_3 NPL_{i,t} + \beta_4 LDR_{i,t} + \beta_5 DER_{i,t} + \beta_6 SIZE_{i,t} + \beta_7 COVID_{i,t} + \epsilon_{i,t}$$

Where:

ROA	= Return on Assets	CAR	= Capital Adequacy Ratio
ROE	= Return on Equity	NPL	= Non-Performing Loan ratio
i	= Company	LDR	= Loan to Deposit Ratio
t	= Period	DER	= Debt to Equity Ratio
α	= Constant	SIZE	= Bank size
β	= Regression coefficient	COVID	= COVID-19 period
ESG	= Sustainability reporting disclosure	ϵ	= error

4. Results and Discussion

Natural logarithms are used in this study to transform data in order to complete the requirements of classical assumption tests, such as heteroscedasticity, autocorrelation, multicollinearity, and normality. These tests are used to guarantee the validity, objectivity, and dependability of the regression model for testing hypotheses. Overall, the hypotheses and results are not in the same direction, which resulting in the rejection of hypotheses, even though the regression model is assumed to be valid to be used according to the feasibility test.

Table 2. T-test Result for ROA Model

Variable (s)	Coefficient (β)	Significance	Results
ESG	0.003	0.602	Not accepted
CAR	-0.008	0.709	Not accepted
NPL	-0.842	0.000	Accepted
LDR	-0.013	0.059	Not accepted
DER	0.000	0.791	Not accepted
SIZE	0.300	0.002	Accepted
COVID	-0.444	0.019	Accepted

Table 3. T-test Result for ROE Model

Variable (s)	Coefficient (β)	Significance	Results
ESG	-0.016	0.520	Not accepted
CAR	-0.368	0.001	Not accepted
NPL	-4.744	0.000	Accepted
LDR	-0.174	0.000	Not accepted
DER	-0.001	0.701	Accepted
SIZE	2.290	0.000	Accepted
COVID	-2.458	0.011	Accepted

The research investigated the relationship between ESG reporting and bank profitability implementing two key financial metrics: ROA and ROE. For both models, the first hypothesis test was rejected. The ESG disclosure data revealed considerable variation among the sampled banks. All the reasons are because the absence of ESG scores for the most recent year contributed to the minimum value. The data range suggests

varying levels of commitment to ESG practices, potentially influenced by differences in regulatory requirements, corporate strategies, and stakeholder expectations.

In the ROA analysis, the positive relationship between ESG reporting and profitability was found, but it proved statistically insignificant, 0.602 which exceeds the 0.05 threshold. This finding aligned with Setiawati & Hidayat's (2023) recent research but diverged from Buallay's (2020) 80 countries' research, which found a significant negative impact on ROA. The ROE model similarly showed no significant relationship with ESG reporting with a significance value of 0.520. The analysis revealed a negative coefficient, suggesting a potential inverse relationship between ESG reporting and shareholder returns, though this relationship was not statistically significant. While the result aligned with Buallay's (2020) research, they contrasted with Oncioiu et al.'s (2020) study of Romanian banks, which found a positive correlation between sustainability reporting and ROA. Aside from different countries' research, there are also differences in the research methodology; which could possibly impact the contrasting results. Additionally, the study acknowledges that ESG initiatives often demand significant upfront investments, which may affect short-term financial performance while potentially building long-term reputational value and stakeholder trust.

The research used ROA and ROE models to examine the correlation between risk-based management and bank ability to create profit. The second hypothesis, which proposed that risk management positively influences bank profitability, was generally rejected for both models. As among the three risk management proxies tested—Capital Adequacy Ratio (CAR), Non-Performing Loans (NPL), and Loan-to-Deposit Ratio (LDR) - only NPL showed consistent outcome with the hypothesis.

For the Capital Adequacy Ratio analysis, the findings revealed no significant effect on ROA in Indonesian publicly listed banks, though there was a slight negative relationship. However, CAR showed a significant negative impact on ROE, suggesting that while higher capital levels reflect financial resilience, they may indicate underutilized capital, leading to reduced profitability. These findings contrasted with studies by Ali et al. (2021), Harb et al. (2022), and Nathanael et al. (2023) but aligned with Abdurrohman et al.'s (2020) research who mentioned the possibility of banks that have large enough capital but have not been able to allocate their capital to generate profits effectively, making the capital has not yet significantly affected profitability.

The Non-Performing Loans ratio emerged as a significant factor affecting ROA and ROE, demonstrating a strong negative correlation with profitability. This finding supports the hypothesis and aligns with Ali et al. (2021), Harb et al. (2022), and Nathanael et al.' (2023) previous studies. The results emphasize that higher levels of non-performing loans directly impact revenue through increased provisioning for loan losses, where the crucial role of effective credit risk management is highlighted.

The Loan-to-Deposit Ratio showed varying results between the two models. For ROA, LDR demonstrated a negative but insignificant relationship, suggesting minimal impact on profitability. However, LDR showed a significant negative relationship for ROE, indicating that imbalances between loans and deposits can adversely affect profitability. These findings aligned with studies by Sunaryo (2020), Ketaren & Haryanto (2020), and Abdurrohman et al. (2020), which examined Indonesian banking and concluded that lending derived from third-party funds doesn't necessarily guarantee greater efficiency in generating profits. It is worth noting that an excessively high LDR could signify over-aggressive lending practices, potentially leading to liquidity risks, while an excessively low LDR might indicate underutilization of available funds, both of which can ultimately diminish overall profitability.

The analysis examined three control variables – Debt to Equity Ratio (DER), bank size, and the COVID-19 pandemic - and their impact on bank profitability which are measured by ROA and ROE. The findings revealed varying significance levels among these variables in influencing bank performance. Among the three control variables examined, only bank size and COVID-19 emerged as significant factors affecting the relation between independent and dependent variables. On the other side, DER showed no meaningful impact on bank profitability.

The Debt-to-Equity Ratio (DER) analysis reveals no significant effect on ROA and ROE in Indonesian publicly listed banks, with significance values of 0.791 and 0.701, respectively, exceeding the 0.05 threshold. This suggests that the ratio of debt financing relative to equity does not meaningfully impact profitability. The findings indicate that within the observed range, the banks' financial leverage neither enhances nor diminishes their ability to generate returns, suggesting a balanced approach to debt and equity financing among the sampled institutions. Therefore, DER is concluded not to affect Indonesian publicly listed banks as a control variable significantly.

Bank size, measured by total assets, emerged as a remarkable positive effect on ROA and ROE, with significance values of 0.002 and 0.000, respectively, well below the 0.05 threshold. This finding indicates that

larger banks consistently achieve higher profitability across both metrics. The advantage of larger banks can be attributed to several factors: economies of scale, greater diversification of income streams, increased market influence, and enhanced ability to leverage their size for cost efficiencies and client attraction. This finding aligns with Harb et al. (2022) research on the MENA region banking sector.

The COVID-19 pandemic demonstrated a significant negative impact on ROA and ROE, with significance values of 0.019 and 0.011, respectively, falling below the 0.05 threshold. This finding highlights how external shocks can substantially affect bank performance, with the pandemic period characterized by increased credit risk, reduced economic activity, and heightened uncertainty. The results align with Sakinah & Pangestuti (2023) research on Indonesian banks, confirming the widespread pandemic's impact on the banking sector performance.

5. Conclusion

The study reveals that sustainability reporting, measured by ESG scores, does not significantly influence the profitability (ROA and ROE) of Indonesian publicly listed banks. This indicates a disconnect between ESG activities and short-term financial performance, likely due to the upfront costs of ESG implementation. However, aligned with agency theory, such practices may contribute to long-term value through improved stakeholder trust and reputation.

Risk management variables show mixed effects. The Capital Adequacy Ratio (CAR) negatively affects ROE but not ROA, suggesting underutilized capital. The Non-Performing Loan (NPL) ratio consistently shows a significant negative impact on both ROA and ROE, underscoring the importance of credit risk management. The Loan-to-Deposit Ratio (LDR) negatively impacts ROE but not ROA, indicating possible inefficiencies in liquidity management. While some findings support agency theory's emphasis on effective resource and risk management, others highlight potential deviations from optimal resource allocation principles.

The implications of this study underscore the strategic importance of integrating sustainability reporting and risk management into the core frameworks of banks. Improving the quality of voluntary sustainability disclosures, aligned with global standards such as the Global Reporting Initiative (GRI), boosts credibility and attracts environmentally conscious investors, offering a competitive edge in an ESG-driven global market. Moreover, effective risk management is essential for enhancing long-term organizational resilience by addressing stakeholder concerns and positioning banks to adapt to market changes and emerging risks. Ultimately, the findings are valuable for environmentally conscious investors and creditors seeking to align their portfolios by considering the mitigation risk of banking sector.

Future studies should consider gaining more access to ESG score data for sustainability reporting disclosure, which would enable a larger sample size, as this study was limited by the unavailability of complete ESG data for 2023. Additionally, future research should compare findings with those from other emerging economies or regions with similar regulatory and economic contexts to enhance generalizability and contribute to the global discourse on sustainable banking practices. Researchers may also explore different variable measurements by incorporating additional banking ratios such as Net Interest Margin (NIM) and Operational Efficiency Ratio (OER/BOPO), which are commonly used in banking sector studies.

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