

Integration of Sustainable Finance in KBMI 4 State-Owned Banks in Indonesia

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Abstract

The Indonesian banking industry faces demands to integrate environmental, social, and governance (ESG) principles in line with OJK regulations and the Sustainable Finance Taxonomy. This study analyzes the implementation of sustainable finance at three state-owned banks in KBMI category 4—Bank Mandiri, BRI, and BNI—during the 2022–2024 period. The method used is content analysis of sustainability reports, quantified using content analysis scoring based on GRI indicators and OJK regulations. The results show that Bank Mandiri excels in green financing, BRI excels in microfinance inclusion, and BNI plays a role as a development agent. Disclosure scores range from 70–77 percent, reflecting formal compliance but suboptimal in depth, transparency, and impact measurement. Theoretical analysis using Sustainable Finance Disclosure Theory, Greenwashing Typology, and the ESG Integration Maturity Model indicates that regulatory pressures, market expectations, and reputational demands influence the quality of ESG reporting. All three banks are still in the transition stage from compliance to impact-based integration. External verification, consistency of quantitative indicators, and measurement of tangible results are required so that sustainability reporting functions not merely as a normative obligation, but as an instrument of strategic legitimacy and ongoing accountability.

Keywords: Sustainable finance, state-owned banks, KBMI 4, ESG, greenwashing.

Article History:

Received : 21 November 2025

Revised : 14 January 2026

Accepted : 14 January 2026

DOI : <https://doi.org/10.56174/jbfb.v2i1.1078>

1. Introduction

The banking industry, which acts as a financial intermediary, is faced with the challenge of internalizing environmental, social, and governance (ESG) aspects into its business governance (Scholtens, 2009). This paradigm shift is driven by global awareness that environmental and social risks can materialize into financial risks (Carney, 2015). In Indonesia, the Financial Services Authority (OJK) issued POJK No. 51/POJK.03/2017 concerning the implementation of sustainable finance, which requires financial services institutions to prepare action plans and annual sustainability reports (OJK, 2021). This regulation is reinforced by POJK 60/2017, which regulates the issuance of green bond instruments, as well as the Indonesian Sustainable Finance Taxonomy Phase II (2022).

This policy emphasizes the importance of the financial system in driving the transition to sustainable development (Weber, 2014). The government and the Financial Services Authority (OJK) also have a strategic goal of implementing sustainable financial practices in the banking sector and other financial institutions (OJK, 2022).

These policies also demonstrate that the government and the Financial Services Authority (OJK) are transforming Indonesia's financial system toward a sustainable, inclusive, and responsible model. The banking industry is expected to be the backbone of national sustainable development. The banking sector plays a central role in promoting sustainability in its operations and governance structures (Sebastião et al., 2024; Tuyon et al., 2023). In addition, Bank Indonesia's green macroprudential policies and the Ministry of Finance's fiscal incentives further complement this ecosystem (Bank Indonesia, 2025). The government's commitment is outlined in Presidential Regulation No. 111 of 2022 concerning the Implementation of the SDGs and the National Action Plan for Development (RAN-PPB) (2019), which maps the role of the financial sector (Government of the Republic of Indonesia, 2023).

OJK Regulation No. 51/POJK.03/2017 requires banks within the Core Capital Banking Group (KBMI) to prepare a Sustainable Finance Action Plan and Sustainability Report. Banks within KBMI 4 have been preparing Sustainable Finance Action Plans and Sustainability Reports since 2019.

Table 1. Regulations Supporting Sustainable Finance in Indonesia

Regulations/Instruments	Name & Year	Publisher	Main Focus
Core Regulations	POJK 51/2017	OJK	Sustainability Implementation and Reporting
Financing Instruments	POJK 60/2017	OJK	Green Bond Issuance
Classification	Indonesian Sustainable Finance Taxonomy Phase 1 and 2 (2019, 2022)	OJK, Ministry of Finance	Categorization of Sustainable Activities
Fiscal & Macroprudential Policy	Various Policies	BI, Ministry of Finance	Green Incentives & Stimulus

National Commitment	Presidential Decree 111/2022 (TPB/SDGs)	President	Implementation of SDGs
Action Plan	RAN-PPB (2019)	Ministry of Finance OJK	Sustainable Financing , Roadmap

Source: OJK (2024), BI (2024), Ministry of Finance (2022)

KBMI 4 is the classification of banks with the largest business scale and the highest complexity within the Indonesian banking system. Banks in KBMI 4 have core capital exceeding IDR 70 trillion. Three state-owned banks are included in KBMI 4: Bank Mandiri, BRI, and BNI. These three state-owned banks each manage assets exceeding IDR 1,500 trillion. Their significant exposure makes these three banks spearheading the decarbonization of Indonesia's financial sector. Weber (2014) states that financial institutions, particularly banks, are under increasing pressure to internalize environmental and social risks in their governance and decision-making processes.

This study aims to analyze the performance of three state-owned banks, KBMI 4, in implementing the sustainable finance regulatory framework. This study examines their business strategies and achievements in supporting national development goals. The analysis will assess their formal compliance with regulations achieved during the 2022–2024 period. Busch et al. (2016) provide a conceptual basis for examining the transparency and quality of sustainability reporting by emphasizing that ESG disclosure is not simply a communication tool but also a mechanism for reducing information asymmetry between banks and stakeholders. Content analysis -based measurement , based on the transparency principle at the heart of the theory, can ensure that the depth and consistency of information reflect the level of sustainability integration into corporate strategy (Amel-Zadeh & Serafeim, 2018).

Furthermore, to assess the legitimacy risks arising from the gap between narrative and actual actions in sustainability reporting, de Freitas Netto et al. (2020) offer a typology of greenwashing that distinguishes between symbolic and substantive communication, helping to identify the extent to which banks' ESG reporting is informative or merely rhetorical. Torelli et al. (2021) assert that greenwashing practices in the financial sector can erode public trust and reduce banks' credibility as agents of sustainable change. Bofo et al. (2023) and Eccles & Klimenko (2019) then provide a framework for mapping each bank's maturity level in integrating ESG principles into its business model. This model allows researchers to assess the stages of a financial institution's evolution, from formal compliance to impact-driven sustainability leadership. This model can also be used to evaluate the effectiveness of initiatives such as green financing , green bond issuance, and support for a low-carbon economy, as they are truly internalized into strategic policies and governance structures.

2. Theoretical Study

2.1 Sustainable Finance Disclosure Theory

Sustainable Finance Disclosure theory asserts that sustainability disclosure serves as a coordination mechanism between financial institutions, investors, and regulators. Busch et al. (2016) state that ESG disclosure strengthens market efficiency by reducing information asymmetry between companies and stakeholders. Amel-Zadeh & Serafeim (2018) add that investors increasingly rely on ESG information to assess long-term risk and company stability. Therefore, accurate and measurable disclosure is fundamental to banks' social and financial legitimacy.

This theory will serve as the foundation for developing content analysis scoring to assess the sustainability reporting quality of three state-owned banks, KBMI 4. The level of openness, depth of narrative, and the availability of verified data are key indicators of transparency, reflecting the effectiveness of sustainable finance implementation (Sorongan et al., 2025). High disclosure is not only a form of compliance but also a reflection of the integration of ESG values into the bank's strategic governance. Eccles & Klimenko (2019) state that credible ESG transparency is a key element in building market trust and the reputation of modern financial institutions.

2.2 Greenwashing Typology

Greenwashing Typology concept provides a framework for assessing legitimacy risks in corporate sustainability practices. According to de Freitas Netto et al. (2020), Greenwashing is classified into dimensions of intensity (intentional vs. unintentional) and form (symbolic vs. substantive). Greenwashing in banking institutions occurs when financial institutions project an environmentally friendly image through sustainability reports without supporting credible quantitative evidence. Torelli et al. (2021) emphasize that the gap between narrative and data creates legitimacy risk, which can undermine public trust in financial institutions. Risk of greenwashing has significant reputational implications, particularly for state-owned banks, which serve as symbols of the government's commitment to sustainable development. Montgomery et al. (2024) warn that financial institutions that fail to avoid symbolic sustainability will face long-term credibility challenges in the eyes of investors and regulators.

2.3 ESG Integration Maturity Model

The ESG Integration Maturity Model describes the stages of evolution of financial institutions in internalizing environmental, social, and governance principles into their business strategies. Boafo et al. (2023) identified four main stages: compliance, strategic alignment, value integration, and impact leadership. In the initial stage, financial institutions focused on regulatory compliance. The next stage marked a shift to strategic integration, where ESG began to be considered a competitive factor. Eccles & Klimenko (2019) asserted that modern investors assess companies based on the extent to which ESG is part of their risk management systems and long-term value creation.

3. Research Methods

This study uses a qualitative approach through content analysis of regulatory documents and sustainability reports. The data is then quantified using content analysis scoring techniques. This combination of approaches will provide an overview of the implementation of sustainable finance by three state-owned banks in KBMI category 4. Mixed methods approaches are often used in sustainable finance research to combine the power of numerical data with contextual understanding (Creswell & Clark, 2017).

3.1. Research Data

Data is sourced from the sustainability reports of Bank Mandiri, BRI, and BNI for the period 2022 to 2024. This period was selected based on considerations of the post-COVID-19 pandemic phase, when banks are faced with the demands of economic recovery while simultaneously integrating sustainability aspects into business governance. Qualitative data is derived from bank sustainability reports and regulatory documents, including POJK No. 51/2017, POJK No. 60/2017, and the 2022 Indonesian Green Taxonomy.

3.2. Thematic Analysis

Thematic analysis techniques were used to identify patterns in sustainable finance implementation. Thematic analysis allows for the systematic identification of meaning patterns in text data (Braun & Clarke, 2006). Bank reports will be reviewed based on the principles of POJK 51/2017 and the Green Taxonomy.

The credibility of the theme will be tested by comparing disclosures between banks. Miles & Huberman (1994) emphasize the validity of qualitative research findings based on iterative analysis to ensure depth and consistency of data interpretation.

3.3. Content Analysis Scoring

Quantitative content analysis was conducted using content analysis scoring techniques. This technique was used to measure the extent to which banks disclose sustainability information. This model assesses the content of disclosure and the quality of the information at a specific point in time. A content analysis is a systematic method for making valid inferences from text to a broader social context. (Krippendorff, 2018). The disclosure score is calculated using the following formula:

$$CS_i = \frac{\sum_{j=1}^n S_{ij}}{n} \times 100$$

Explanation :

- CS_i = Content Score of bank i
- S_{ij} = S score of the (j)th item at the i -th bank (1 = disclosed, 0 = not disclosed, or weight 0–3 for quality)
- n = number of disclosure indicators

Disclosure indicators follow the GRI (Global Reporting Initiative) standards, POJK 51/2017, and the Indonesian Green Taxonomy 2022. A score of 0 means no disclosure, a score of 1 means descriptive disclosure, a score of 2 means quantitative disclosure, and a score of 3 means third-party verified disclosure.

Content analysis indicators include: compliance with POJK 51/2017, conformity with GRI Standards, and the materiality of disclosed ESG issues. The assessment also includes narrative depth (Krippendorff, 2018), quantitative indicators such as emissions and green financing (Michelon et al., 2015), consistency of disclosures between years, and the existence of independent verification, according to Boiral & Henri (2017). enhance the credibility of the report. Furthermore, the strength of governance, transparency of internal policies, environmental and social impact indicators, and the level of ESG integration into the strategy are also assessed, referring to the ESG Integration Maturity Model (Boafo et al., 2023; Eccles & Klimenko, 2019). The use of these indicators allows for a more comprehensive assessment of whether a bank's disclosures are symbolic or substantive, as emphasized by Busch et al. (2016).

This quantification method has been used by Michelin et al. (2015) to assess the quality of sustainability reporting of European companies. According to Boiral & Henri (2017) Measuring reporting quality with content analysis is important because not all sustainability reports provide equivalent or comparable information across organizations.

4. Results

Bank Mandiri, BRI, and BNI integrate sustainability principles in different ways. The implementation of sustainability principles by Bank Mandiri, BRI, and BNI demonstrates that state-owned banks have a strategic role in the transition to a low-carbon economy and financial inclusion. These three state-owned banks also have varying levels of maturity in sustainable finance.

4.1. Comparison of Sustainability Strategies of State-Owned Bank KBMI 4

Bank Mandiri, BRI, and BNI have developed Sustainable Finance Action Plans that integrate environmental, social, and governance (ESG) principles into their core operations and businesses. Bank Mandiri, for example, has a vision of "Leading with Impact: Becoming Indonesia's Sustainability Champion." Its 2024 Sustainability Report demonstrates that it integrates ESG principles into all aspects of its business. BRI has strategic initiatives for sustainable business growth, focusing on digital and cultural transformation. BNI is committed to being an "agent of development," with a focus on collaboration and support for the low-carbon economic transition.

Table 2. Implementation of Sustainable Finance Strategy in Three State-Owned Banks

Bank	Strategic Focus	Main Implementation
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Mandiri Bank	Pioneer of sustainability in Indonesia.	Integrating ESG principles across the business; issuing <i>Green Bonds</i> to finance renewable energy projects.
BRI	Encourage equitable economic growth.	Digital and cultural transformation; focus on good corporate governance and risk management.
BNI	Becoming a development agent that creates impact.	Helping borrowers transition to a low-carbon economy; strengthening digital financial literacy and inclusion .

While these three banks have demonstrated a commitment to integrating ESG principles, the main challenge lies in consistent and measurable implementation. Indonesia has seen significant growth in green financing , but there is a gap between announced commitments and implementation on the ground. (Larasati, 2024) . This highlights the importance of effective monitoring and evaluation mechanisms to ensure that action plans are not only declarative but also measurable and transparently monitored .

The three state-owned banks in KBMI Category 4 also demonstrate different approaches to implementing sustainable finance. Bank Mandiri focuses on market instruments, BRI prioritizes micro-inclusion, and BNI emphasizes its role as a development agent through collaboration, financial literacy, and digital innovation. Busch et al. (2016) view sustainability reporting not simply as a compliance obligation, but as a signaling and legitimation mechanism shaped by three main institutional pressures: regulation (coercive), investor expectations (normative), and reputational risk (mimetic). Regulatory pressure from the Financial Services Authority (OJK) through POJK 51/2017 drives formal compliance, while normative pressure comes from increasing investor expectations for credible ESG transparency (Amel-zadeh & Serafeim , 2018). On the other hand, mimetic pressure, as proposed by Maggio & Powell (1983) , This has encouraged large banks such as Mandiri, BRI, and BNI to emulate global best practices in sustainability reporting to maintain institutional legitimacy and reputation.

Differences in sustainability strategies between banks can be understood as variations in the degree to which these institutional pressures are internalized. Bank Mandiri demonstrates regulatory compliance and strong market signals through the issuance of third-party verified Green Bonds, while BRI demonstrates normative adaptation by expanding financial inclusion as a form of social responsibility. BNI, through its support for the low-carbon economic transition, strengthens its institutional legitimacy as a development agent. Busch et al. (2016) emphasize that the credibility of ESG reporting is determined by the consistency between the signals sent and verifiable actions. Therefore, the variation in content analysis scores (70–77%) reflects the extent to which these three banks successfully balance compliance, transparency, and social legitimacy.

Bank Mandiri demonstrated its commitment to sustainability by issuing a Rp 10 trillion Green Bond, which was used to finance environmentally friendly projects such as renewable energy and green infrastructure. The issuance of the green bond demonstrates the bank's active role in supporting the transition to a low-carbon economy. The issuance of the green bond by Bank Mandiri has had a significant positive impact on the implementation of sustainable finance principles, attracting investor interest, and supporting projects that have a positive impact on the environment and society. (Mukhry & Khadafi, 2024).

BRI has established a financial inclusion strategy with a focus on the micro and ultra-micro segments, which is reflected in the Ultra Micro Holding initiative that integrates BRI, Pegadaian, and PNM. By December 2023, this initiative had integrated 37 million borrowers, reducing the number of those without financial access from 30 million in 2018 to around 14 million in 2023. This initiative not only increases financial inclusion but also empowers women entrepreneurs in the ultra-micro segment through PNM Mekaar. Digital financial inclusion directly contributes to the emergence of an inclusive digital economy, by providing affordable and accessible financial services to previously underserved populations.

BNI acts as a "development agent" by building strong relationships with all stakeholders and is committed to assisting borrowers in the transition to a low-carbon economy. Through digital innovation, BNI also strives to expand access to financial literacy and inclusion. According to Basnayake et al. (2024), digital financial inclusion significantly promotes economic growth in Asia-Pacific countries by reducing carbon emissions and improving the quality of economic growth through the adoption of clean technologies.

Table 3 Comparison of Green Financing Values (Rp. Trillion)

Bank	2023	2024	2025 Target
Mandiri Bank	129	293	294
BNI	181.1	190.5	199.67
BRI	82.3	86.6	150

Source: Bank Mandiri, BNI, BRI (2025)

These three state-owned banks are also actively allocating green financing to support Indonesia's economic transition towards sustainability. In 2024, Bank Mandiri focused on financing renewable energy and natural resource management, supported by the issuance of Green Bond Phase I in 2023. This financing aims to provide 122,256 households with renewable energy by 2024.

Bank Mandiri has allocated Rp293 trillion to its green portfolio in 2024. BNI recorded an increase, with total sustainable financing reaching Rp190.5 trillion by the end of 2024, and is targeting Rp199.67 trillion by the end of 2025.

BRI integrates sustainability principles into its financing, particularly for the micro and ultra-micro segments, with a focus on equitable business growth. In 2024, BRI disbursed IDR 86.6 trillion in green financing, with this figure set to increase further in 2025.

These three banks have fulfilled their periodic reporting obligations by publishing Sustainability Reports, which outline their economic, social, and environmental performance. These reports are prepared in accordance with international standards, fostering transparency and accountability. The publication of these periodic reports demonstrates these banks' compliance with regulations and their commitment to ESG principles. While regular reporting demonstrates transparency, a key challenge is the quality and depth of the information presented. UNCTAD (2023) states that while many financial institutions report their ESG activities, there are significant differences in the quality of the data and the methodologies used. This indicates the need for more uniform reporting standards and more robust methodologies to ensure that the information presented truly reflects their real impacts and contributions to sustainability.

A portion of the Social and Environmental Responsibility (TJSL) funds is allocated to activities supporting sustainable finance. BRI allocates funds to empower the micro and ultra-micro segments, supporting sustainable economic growth. BNI uses its funds to support borrowers' transition to a low-carbon economy. Bank Mandiri allocates funds to renewable energy projects, demonstrating the alignment between the bank's social activities and sustainability goals. While the allocation of CSR funds demonstrates a commitment to sustainability, the primary challenge is the effectiveness and efficiency of their use. However, UNCTAD (2023) cautions that the increased allocation of funds to green projects raises concerns about the lack of impact evaluation and long-term sustainability of these projects. This highlights the importance of robust evaluation mechanisms to ensure that allocated funds truly have a significant positive impact on the environment and society.

The 2024 Sustainability Report shows that Bank Mandiri, BNI, and BRI are at a mature implementation stage. (BNI, 2024; BRI, 2024; Bank Mandiri, 2024) . They have gone beyond the initial phase and are proactively integrating sustainability into their strategies. Their readiness is evident in the comprehensiveness of their reports and strategies, indicating that they are on track to meet their full implementation target by 2025. However, the main challenges in implementation are consistency and adaptation to regulatory changes and market dynamics. According to Valentina & Yasarani (2025) , although many financial institutions have reached a mature implementation stage, there are challenges in maintaining momentum and adapting strategies to regulatory changes and dynamic market conditions. This highlights the importance of flexibility and adaptability in sustainable finance implementation strategies.

4.2. Reducing Greenhouse Gas (GHG) Emissions

The three state-owned Mandiri, BRI, and BNI—have demonstrated their commitment to reducing GHG emissions through various initiatives in their sustainability reports. However, to ensure the effectiveness and sustainability of these efforts, more in-depth evaluation and the implementation of measurable and realistic action plans are needed. This aligns with findings from Weber (2012). which emphasizes the importance of transparency and accountability in reporting GHG emissions by financial institutions.

Mandiri Bank reported a 33% reduction in Scope 1 and 2 GHG emissions since 2019, from 359 tCO_{2e} to 239 tCO_{2e} in 2024. This reduction was achieved through energy efficiency, renewable energy use, and the implementation of Digital Carbon

Tracking. However, it is not yet known The characteristics of these reductions are structural or temporary. According to Carè et al. (2024) , emission reductions that are not accompanied by structural changes in a company's operations tend not to be sustainable. Therefore, further evaluation is needed to ensure that Bank Mandiri's efforts result in long-term changes in emission reductions.

BRI has set a Net Zero Emission target for Scope 1, 2, and 3 emissions by 2050, using 2022 as the baseline. Emission reduction efforts are carried out through various business and operational initiatives. Setting a Net Zero Emission target by 2050 demonstrates a long-term commitment. However, the main challenge is consistent and measurable implementation. According to Carè et al. (2024) and Tay et al. (2022) , many companies set long-term targets without clear and measurable action plans, which can hinder their achievement. Therefore, BRI needs to ensure that every step towards Net Zero Emissions is supported by a concrete action plan that can be monitored regularly.

BNI estimates that the Light Rail Transit (LRT) project funded through Green Bonds will avoid GHG emissions of 55,414 tCO_{2e} per year. The project is expected to save 791,630 GJ of energy and involve 2,295 employees. The LRT project shows significant emission reduction potential . However, Chi et al. (2016) stated that estimates of the environmental impact of infrastructure projects are often overly optimistic and do not consider external factors that can influence outcomes. BNI needs to conduct a more in-depth and realistic evaluation of the environmental impact of projects funded through *Green Bonds* .

Table 4 Greenhouse Gas Emission Reduction Performance

Bank	2024 GHG emissions (tCO _{2e})	Reduction Initiative	Analysis
Mandiri Bank	239 (Scope 1 & 2)	Energy efficiency, renewable energy use, Digital Carbon Tracking	A significant decrease since 2019 (359 tCO _{2e}) . However, an evaluation is needed to determine whether the decrease is structural or temporary (NGFS, 2024) .
BRI	Scope 1, 2, 3: Net Zero Target 2050 (baseline 2022)	Sustainable operational & business initiatives, digital transformation	Ambitious long-term targets. Challenges in consistent and measurable implementation; action plans must be concrete and monitored (Kedla et al., 2025)
BNI	Estimated reduction of 55,414 per LRT project	Green Bond for LRT, energy saving 791,630 GJ	Estimates are significant, but need to be ensured to be realistic and take into account external factors that influence the results (Chi et al., 2016)

Source: Sustainability reports of Bank Mandiri, BRI, BNI (2024)

However, analyzing the risk of greenwashing in emissions reductions needs to be an integral part of performance evaluations of these initiatives. de Freitas Netto et al. (2020) offer a useful typology framework to distinguish vocal or symbolic sustainability claims from those with substantial evidence of execution and results. In the reports of Bank Mandiri, BRI, and BNI, this typology forces an examination of three key aspects: the consistency of the narrative with quantitative data, the existence of independent verification, and the extent of reporting on indirect effects.

Torelli et al. (2021) added the dimension of perceptual consequences, namely how exaggerated green claims shape public and investor expectations, so that if these claims are not met, they can trigger systemic reputational erosion. Therefore, reported emission reductions must be tested not only on absolute figures but also on their methodological validity attributes; to ensure that emissions data sources are based on direct measurements, model estimates, or proxy calculations that are prone to bias (Torelli et al., 2021).

Sebastião et al., (2024) emphasize that the banking sector presents a particular vulnerability to greenwashing practices for two reasons: first, financial intermediary relationships produce derivative impact outputs that are difficult to trace directly; second, marketing incentives and the need for institutional legitimacy encourage concise and easily communicated sustainability messages, while operational evidence is scattered across the various projects financed. The practical implication is the need for audit mechanisms that go beyond internal document verification, namely audits of project outcomes and third-party assessments of emissions avoidance claims. In the case of BNI, for example, the estimate of 55,414 tCO₂e attributed to the LRT project must be tested against assumptions of usage, mode substitution, and rebound factors, as highlighted by previous environmental infrastructure research (Chi et al., 2016).

Greenwashing analysis also requires attention to the temporality of claims. Longitudinal data analysis is crucial for detecting patterns of selective disclosure, namely the tendency to highlight good years while obscuring less profitable periods. Therefore, Bank Mandiri's reduction in emissions from 359 tCO₂e to 239 tCO₂e should be viewed within a medium-term data set to determine whether the decline is sustainable or merely influenced by temporary factors such as changes in reporting scope or operational anomalies. External verification will increase the credibility of claims and reduce the risk of perceived greenwashing among institutional investors. Best practices recommended by the literature include a combination of methodological transparency, publication of granular scope 1, 2, and 3 data, and independent audits that test the underlying assumptions of emission estimates (de Freitas Netto et al., 2020; Sebastião et al., 2024; Torelli et al., 2021).

4.3. Content Analysis Scoring Results

A quantitative content analysis of Bank Mandiri, BNI, and BRI's sustainability reports for the 2022–2024 period shows that all three banks have achieved relatively good levels of disclosure, with scores ranging from 70–77. This indicates compliance with regulations (POJK 51/2017) and adoption of international standards (GRI), although the depth and quality of information varies among banks.

Based on the perspective of Sustainable Finance Disclosure Theory (Busch et al., 2016), the score achievement indicates that the three banks have implemented the reporting function as a signaling mechanism to investors and regulators, not merely as an administrative compliance tool. However, the effectiveness of disclosure Sustainability is also determined by the level of materiality, consistency, and independent verification of the disclosed data. While the sustainability reports of Bank Mandiri, BNI, and BRI demonstrate compliance with regulatory institutional pressures from the Financial Services Authority (OJK), they remain limited in meeting the global market's normative expectations for impact-based transparency. Descriptive transparency without strong quantification indicates compliance signaling that has not yet fully transformed into performance-based legitimacy (Amel-Zadeh & Serafeim, 2018).

Table 5. Content Analysis Scores of Bank Mandiri, BNI, and BRI (2022–2024)

BANK	2022	2023	2024	Average	Main description
Independent	72.0%	74.5%	77.0%	74.5%	Excelling in green financing & net zero targets with quantitative indicators
BNI	71.5%	73.0%	75.5%	73.3%	Strong on internal governance & policies, but environmental impact is not fully measurable
BRI	70.5%	72.0%	74.0%	72.2%	Focus on financial inclusion & MSMEs, but external verification aspects are still weak

Source: Results of data processing from Bank Mandiri, BNI, BRI (2025)

Bank Mandiri achieved the highest average score (74.5%), reflecting its relative leadership in green financing disclosure and climate indicators. BNI ranked in the middle (73.3%), with strengths in governance and policy transparency, although lacking in-depth quantitative emissions reporting. BRI recorded the lowest score (72.2%), while still showing positive trends, particularly in financial inclusion, but remaining weak in third-party verification and environmental indicators.

The score range of 70–77 shows that the three banks are in the good disclosure category. However, they have not yet achieved the high-quality disclosure rate that, according to Adams (2017), should be above 80%. Thus, they are on the right track towards sustainability integration, but need to increase the depth, quantification, and verification of data to meet international standards.

Greenwashing typology by de Freitas Netto et al. (2020), the results of this content analysis also indicate the potential for “selective” and “compliance greenwashing” patterns. Selective greenwashing is seen when the sustainability narrative focuses on indicators that are easily communicated to the public, such as green financing or micro-programs, while the complex dimensions of environmental and social impacts are less quantitatively explained. Compliance greenwashing is seen in

formal compliance with reporting obligations without demonstrating independent verification of program effectiveness.

Torelli et al. (2021) warns that this situation could create long-term legitimacy risks, with the public and investors viewing sustainability reports as rhetorical symbols rather than evidence of actual performance. However, this does not mean that these banks are manipulating data, but rather indicates limitations in the maturity level of their ESG integration. According to the model by Bofo et al., (2023), and Eccles & Klimenko (2019) , Bank Mandiri appears to be at the “ strategic alignment ” stage towards “ value integration ” which positions ESG as a strategic element in value creation.

BNI is in the strategic alignment phase, focusing on internal governance and policies, while BRI is still in the compliance phase , focusing on regulatory compliance and financial inclusion. A disclosure score of 70–77 aligns with the characteristics of this transition phase: formal adoption of sustainability principles but a lack of consistently measurable impact metrics.

The content analysis findings, which showed a score range of 70–77%, reinforce the indication that the reporting practices of the three banks are still at the compliance signaling stage, namely formal compliance with regulations without being followed by strengthening data depth and independent verification. According to de Freitas Netto et al. (2020) , regarding selective greenwashing , organizations tend to disclose positive aspects that are easy to communicate while other material elements—such as indirect environmental impacts or carbon credit risks—are less quantitatively discussed. Pattern is common in the financial sector, which is in a phase of ESG transition, where reputational pressures drive more narrative than discursive reporting. (Montgomery et al., 2024) . Lack of external verification on most indicators creating the risk of a legitimacy gap in the form of a discrepancy between sustainability claims and testable empirical evidence (Torelli et al., 2021) . Thus, a score of 70–77% can be interpreted not only as an achievement, but also as a signal of reliance on symbolic disclosure , which is not yet fully oriented towards measuring real impacts as recommended by Sustainable Finance Disclosure Theory. (Amel-zadeh & Serafeim, 2018; Busch et al., 2016).

5. Conclusion and Suggestion

State-owned banks in KBMI category 4, namely Bank Mandiri, BNI, and BRI, have significant capacity to drive the transformation agenda of Indonesia's financial system towards sustainability. The implementation of sustainable finance by these three banks is crucial to supporting the achievement of national development goals and strengthening their positions as responsible financial institutions.

The three banks have demonstrated their commitment through various policies and instruments. By 2024, Bank Mandiri reported a green financing portfolio worth IDR 293 trillion, BNI IDR 190.5 trillion, and BRI IDR 86.6 trillion. These achievements contribute to closing the large national green financing gap. However, consistent implementation and effective target achievement remain key challenges. Barkemeyer et al. (2014) reminding that the value of sustainability does not lie in the size of the numbers, but in the materiality of the impact produced.

The three state-owned banks have also fulfilled their reporting obligations under POJK No. 51/2017. However, compliance with regulators' and government expectations remains suboptimal. Transparency in social and environmental impact measurement methodologies remains limited. Sustainability reports, however, tend to emphasize positive narratives without critical reflection on program effectiveness. (UNCTAD, 2023) notes that reporting practices are often ritualistic and lack transformative substance. Several studies have suggested that sustainability reports are often cosmetic in nature. (Feghali et al., 2025; Montgomery et al., 2024; Moodaley & Telukdarie, 2023).

Overall, the three state-owned banks in the KBMI 4 category have formally met regulatory expectations. *Content analysis scoring* evaluations show that Bank Mandiri, BNI, and BRI are already on track to implementing sustainable finance. Their disclosure scores range from 70 % to 77 %, indicating formal compliance with regulations and transparency efforts. However, gaps remain in information quality, particularly regarding impact measurement methodology and data verifiability.

Mandiri excels in green financing, BNI is stronger in governance, and BRI demonstrates strengths in financial literacy and inclusion. However, none of them have yet achieved full leadership in sustainability reporting. This supports Scholtens' (2009) view that banks in developing countries tend to remain stuck at the intermediate level due to limited green market infrastructure and evaluation standards.

These findings reinforce the view that sustainability reporting in the Indonesian banking sector is still semi-transitional. *Sustainable Finance Disclosure Theory* explains that improving disclosure quality will depend on simultaneous pressure from three institutional actors: regulators, the market, and public opinion. *The Greenwashing Typology* helps identify areas of reputational risk resulting from an imbalance between narrative and evidence. Meanwhile, *the ESG Integration Maturity Model* provides a clear evolutionary path for state-owned banks to move from formal compliance to impact leadership.

To improve *the outcomes* and *impact* of green financing, banks need to strengthen impact measurement through verified methodologies, not just reporting green credit output (UNCTAD, 2023). ESG integration should be deepened through more stringent environmental-social risk management (Weber, 2012) as well as independent verification to enhance credibility and prevent *greenwashing*. (Boiral & Henri, 2017).

Furthermore, strengthening digital inclusion and transition financing can broaden economic and environmental impacts, as regional studies on the inclusion-sustainability nexus have shown (Basnayake et al., 2024; Tay et al., 2022). These steps are necessary for banks to not only meet regulatory compliance, but move towards ESG integration that results in real change in line with the ESG Integration Maturity Model (Boafo et al., 2023; Eccles & Klimenko, 2019).

In the medium term, improving the quality of *disclosure* based on external verification and measuring socio-environmental impacts will determine the quality of sustainability reports. Improving *disclosure quality* can help sustainability reports become truly instruments of strategic legitimacy, rather than simply normative compliance within the annual reporting cycle (Boafo et al., 2023; Sebastião et al., 2024).

The three state-owned banks need to achieve international standards by improving the quality of disclosure through stronger external verification, consistent use of quantitative indicators, and integration of *outcomes* and *impacts* in reporting, not just outputs. Thus, *content analysis scoring* not only serves as a compliance measurement tool, but also as an instrument to encourage the depth of sustainability integration in the bank's business strategy.

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