


# Does Green Banking Disclosure Improve Banking Financial Performance In The Asean Region?

Rochman Arif<sup>1</sup>, Bandi<sup>2</sup>, Agung Nur Probohudono<sup>3</sup>, Djuminah<sup>4</sup>

Sebelas Maret University and Universitas Islam Lamongan<sup>1</sup>, Sebelas Maret University<sup>2,3,4</sup>

Article Info	ABSTRACT
<b>Keywords:</b> Green banking disclosure and banking financial performance	This study aims to find empirical evidence of the influence of green banking disclosure on the financial performance of banks in the ASEAN region. This type of research is quantitative research using a statistical approach. The population in this study were banking companies in the ASEAN region, as many as 168 banks from 2018-2023 as samples in this study and 984 observation data were obtained. The data analysis tool in this study used panel data regression with the help of the STATA version 12 tool. The results of the study showed that green banking disclosure had a positive and significant influence on banking performance as measured using ROA and ROE.
This is an open access article under the <a href="#">CC BY-NC</a> license 	<b>Corresponding Author:</b> Rochman Arif Sebelas Maret University and Universitas Islam Lamongan

## INTRODUCTION

The COVID-19 pandemic has hit the ASEAN banking sector through weaker economic growth, resulting in a slowdown in credit growth and leading to a decline in the profitability of the banking industry (Syafina, 2020). In Vietnam, the State Bank of Vietnam will order commercial banks to eliminate, cut, or postpone interest payments on loans to companies struggling with the economic impact of the coronavirus outbreak.(Reni, 2020). In Malaysia, the Central Bank of Malaysia has cut its benchmark interest rate sharply as the country tries to revive its economy amid the coronavirus (COVID-19) pandemic.(Andriani, 2020). Net profits of giant banks in the Southeast Asian region were eroded due to declining credit income (CNBC Indonesia, 2020), for example, the four largest commercial banks in Thailand (Bangkok Bank, Siam Commercial Bank, Krung Thai Bank, and Kasikornbank) will increase provision costs in preparation for bankruptcy due to the COVID-19 pandemic.(Retno & Yolanda, 2020).

*Green banking* or environmentally friendly banking is a long-term business strategy with the main target of achieving sustainable benefits and preserving the environment. (Valencia & Calabuig-Tormo, 2023). Green banking is a new concept that involves environmentally friendly initiatives by banks.(Liu & Wu, 2023). Green banking is a policy innovation that encourages financial institutions to incorporate environmental risks into their

credit management processes.(Luo et al., 2022). This includes efforts to reduce the carbon footprint in both the bank's internal and external operations. (Bose et al., 2018).

Green banking aims to align financial practices with sustainable development goals, promoting environmentally friendly projects and initiatives.(Tan et al., 2024). One of its main objectives is to support the transition to a green economy by encouraging banks to lend to environmentally conscious projects.(Li et al., 2023). Eco-friendly banking will tend to use digital activities in its services to reduce the negative impact on the environment.(Pu et al., 2024).

Eco-friendly innovation is an important strategy for businesses to gain superior competitiveness and achieve long-term sustainable growth.(Zhuo et al., 2024). Green financial policies influence the digital transformation of companies primarily by improving digital outcomes and guiding the strategic direction of management.(Du & Wang, 2023).

The Covid-19 condition threatens the financial performance of banks in the ASEAN region, previous literature explains that green banking policies improve banking performance. This study aims to find empirical evidence related to the influence of green banking disclosures carried out by banks in the ASEAN region on banking financial performance, this study is expected to be a strategic solution for banks in overcoming financial performance problems during the Covid-19 crisis.

### Hypothesis

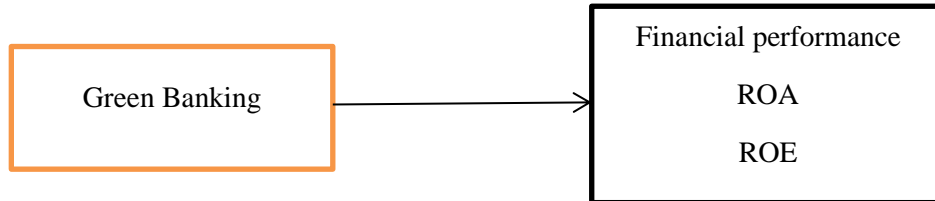
*Green banking* defined as economic activities that support environmental improvement, respond to climate change, conserve and use resources efficiently, and provide comprehensive financial services. (Zhang et al., 2022).Cui et al., (2023) emphasizes the importance of integrating green practices, digitalization, and financial tools to improve regional environmental efficiency and promote sustainable development. Logically, banks that adopt the green concept will prioritize digital activities over physical activities, so that banks that adopt green banking will be more inclusive in providing financial services.

The application of digital tools in green finance can result in increased costs, efficiency and security for banks.(Gu & Wang, 2023). Digitalization can result in more efficient banking operations, reducing the environmental impact of financial services.(Tok et al., 2022). Modern banking systems adopt green banking initiatives and update traditional banking processes.(Pandey et al., 2024). It is important to underline that the most important thing for digital financial service providers is to ensure loyalty and sustainability from an environmentally friendly perspective.(Zhuo et al., 2024).

Based on the literature explained above, it shows that the better the environmentally friendly concept implemented by banks, the more it will directly improve the financial performance of banks, so that from this explanation the following hypothesis can be drawn:

H1a: Green banking disclosure has a positive effect on financial performance (ROA)

H1b: Green banking disclosure has a positive effect on financial performance (ROE)



**Figure 2.1** Framework of thinking

### Research methods

This study is a type of quantitative research that examines the effect of green banking disclosure on the financial performance of the banking sector in the ASEAN region. The population in this study is banking companies in the ASEAN region, while the sampling technique in this study uses a purposive sampling technique with the following criteria:

1. Banking companies that provide company websites.
2. Banking companies that publish annual reports in 2018 – 2023, the reason for taking the 2018 – 2023 sample is because that year reflects two different conditions where 2018-2020 reflects the COVID-19 conditions and 2021-2023 reflects the post-COVID-19 conditions.
3. Companies that present complete information in annual reports and sustainability reports that are in accordance with the indicators in this study.

Banking financial performance in this study was measured using return on assets (ROA), namely net profit divided by total assets and also measured using return on equity (ROE), namely net profit divided by total equity. Green banking measurement was measured using the green banking index adopted from the study.(Bose et al., 2017). . where each bank that submits information according to the index will be given a value of 1 and if it does not submit it will be given a value of 0, while the control variable uses Size which is measured using the natural logarithm of asset value. The data analysis method in this study uses panel data regression with the help of the STATA version 12 application.

**Table 3.3** Green Banking Disclosure Index

GBDI-1	Information that reveals the bank's policy on environmental preservation or the bank's concern and awareness of natural environmental preservation and/or climate change management policies.
GBDI-2	Information on client project financing is not only based on financial criteria but also relies on environmental issues. In addition, information related to financing of environmentally friendly projects, such as renewable energy projects, bio-gas plants, financing for the construction of compressed natural gas (CNG) stations, brick kilns, etc. and monitoring client environmental initiatives such as waste

	treatment plant projects, recycling facilities and smoke and gas capture units.
GBDI-3	Reducing paper waste by encouraging internal communication via email, using double-sided printing and recycled paper.
GBDI-4	Information relating to the implementation of policies and technologies to reduce water and gas waste in the bank's internal operations, for example the use of water-saving taps.
GBDI-5	Information related to the use of environmentally friendly materials, for example recycled paper, use of solar power systems, etc.
GBDI-6	Information related to energy conservation in running business operations, such as saving electricity through the use of energy-saving lamps.
GBDI-7	Information on steps taken to combat climate change and reduce emissions by cutting employee business trips.
GBDI-8	Information about the introduction of various new environmentally friendly products such as online banking, automated teller machines (ATMs) and mobile banking to reduce carbon emissions.
GBDI-9	Reporting information on bank initiatives and involvement in building networks on environmental issues, for example membership or relationships with green groups including government agencies, NGOs, etc.
GBDI-10	Information on whether the bank has conducted or plans to conduct a study on the impact of its potential client's business on the environment before granting a financing facility.
GBDI-11	Information about organizing or planning to hold seminars, workshops or training to increase environmental awareness of citizens.
GBDI-12	Information on whether the bank has received awards for its environmentally friendly activities or contributions to environmental improvement, and excellence in environmental reporting practices.
GBDI-13	Information on the bank's customers and value chain partners who have won awards for their initiatives to preserve the natural environment, where the bank has worked as a joint partner.
GBDI-14	Information on sponsoring environmentally friendly facilities: restoring and preserving heritage buildings/structures and cash or non-cash contributions to beautify cities or villages through tree planting.
GBDI-15	Information on the establishment of a climate change fund.
GBDI-16	Information on preparing green branches.

GBDI-17	Information about internalization of environmentally friendly marketing such as planting trees, Save the Environment ^on bank letterheads and other internal communication media.
GBDI-18	Information about the bank's initiatives and involvement in training its employees on the environmental movement, for example educational programs for bank employees and encouraging them to take an active role in environmentally friendly operations.
GBDI-19	Information on the amount of budget allocated annually for environmentally friendly banking practices.
GBDI-20	Information on the actual amount spent on various green banking activities.
GBDI-21	Use of a separate page for green banking reporting in the annual report.

Source:(Bose et al., 2017).

## RESULTS

**Table 4.1** Research Sample

Country	Bank	2018	2019	2020	2021	2022	2023	Total
Brunei	2	0	2	2	2	2	2	10
Cambodia	6	6	6	6	6	6	6	36
Philippines	20	20	20	20	20	20	20	120
Indonesia	66	66	66	66	66	64	61	389
Laos	8	0	8	8	8	8	8	40
Malaysia	25	25	25	25	25	25	24	149
Myanmar	3	1	3	3	3	3	3	16
Singapore	16	16	16	16	16	16	16	96
Thailand	14	13	14	14	14	14	12	81
East Timor	1	1	1	1	1	1	1	6
Vietnamese	7	6	7	7	7	7	7	41
Total	168	154	168	168	168	166	160	984

Source: Research data processing

From Table 4.1 above, it can be seen that the sample in this study amounted to 984 observation data consisting of 168 banks in the ASEAN region. In 2018, there were 154 observation data, in 2019 there were 168 observation data, in 2020 there were 168 observation data, in 2021 there were 168 observation data, in 2022 there were 166 observation data, and in 2023 there were 160 observation data.

**Table 4.2** Distribution of Green Banking Disclosure Items

Item	2018		2019		2020		2021		2022		2023		Full Data	
	Total	%	Total	%	Total	%	Total	%	Total	%	Total	%	Total	%
GBDI-1 Environmental Policy	80	52%	88	52%	92	55%	95	57%	95	57%	100	63%	550	56%
GBDI-2 Environmentally Friendly Project	58	38%	63	38%	70	42%	85	51%	91	55%	94	59%	461	47%
GBDI-3 Paper Waste Management	32	21%	40	24%	54	32%	59	35%	62	37%	60	38%	307	31%
GBDI-4 Water Saving Policy	16	10%	17	10%	21	13%	28	17%	28	17%	27	17%	137	14%
GBDI-5 Use of solar power systems	16	10%	17	10%	19	11%	25	15%	26	16%	25	16%	128	13%
GBDI-6 Save Electricity	24	16%	25	15%	31	18%	40	24%	42	25%	40	25%	202	21%
GBDI-7 Emission reduction	29	19%	30	18%	38	23%	44	26%	49	30%	46	29%	236	24%
GBDI-8 Availability of Financial Access	81	53%	83	49%	83	49%	83	49%	83	50%	80	50%	493	50%
GBDI-9 Building environmental networks	35	23%	40	24%	45	27%	47	28%	49	30%	48	30%	264	27%
GBDI-10 Green Financing Policy	35	23%	37	22%	41	24%	44	26%	45	27%	45	28%	247	25%
GBDI-11 Environmentally Friendly Award	15	10%	19	11%	20	12%	25	15%	34	20%	34	21%	147	15%
GBDI-12 Environmental Reporting Practices	62	40%	65	39%	70	42%	73	43%	74	45%	73	46%	417	42%
GBDI-13 Joint Partner Award	4	3%	4	2%	4	2%	4	2%	5	3%	4	3%	25	3%

**Table 4.2** Distribution of Green Banking Disclosure Items

Item	2018		2019		2020		2021		2022		2023		Full Data	
	Total	%	Total	%	Total	%	Total	%	Total	%	Total	%	Total	%
GBDI-14 Sponsors green activities	33	21%	36	21%	36	21%	36	21%	40	24%	37	23%	218	22%
GBDI-15 Climate change fund	2	1%	2	1%	2	1%	3	2%	3	2%	3	2%	15	2%
GBDI-16 Prepares Green Branch	8	5%	8	5%	8	5%	9	5%	10	6%	10	6%	53	5%
GBDI-17 Environmentally friendly marketing	19	12%	19	11%	19	11%	21	13%	24	14%	23	14%	125	13%
GBDI-18 Training employees about the environment	57	37%	60	36%	61	36%	62	37%	64	39%	62	39%	366	37%
GBDI-19 environmentally friendly practice budget	8	5%	9	5%	10	6%	10	6%	12	7%	13	8%	62	6%
GBDI-20 Environmental costs	13	8%	13	8%	13	8%	13	8%	13	8%	15	9%	80	8%
GBDI-21 SR with separate Pages	60	39%	61	36%	61	36%	63	38%	64	39%	75	47%	384	39%
Number of Observations	154	100%	168	100%	168	100%	168	100%	166	100%	160	100%	984	100%

Source: processed data (2025)

Table 4.3 Panel data regression

	ROA	ROE
GDBI	0.001***	0.000***
	6,550	74.1400
SIZE	0.725	0.1360
	-0.350	-1.4900
Covid Year	0.647	0.0960
	-0.460	-1.6700
_cons	0.000***	0.000***
	-9,950	-11.9900
Adj. R	0.9558	0.9376
F-Statistics	17,679	15,879
F-Statistic Prob	0.000***	0.000***
N	984	984

Significance Level: \*10%, \*\*5%, \*\*\*1%

From table 4.3 above, it can be seen that the green banking disclosure variable (GDBI) has a positive influence on financial performance (ROA) with a probability value of 0.0000 < 0.001. green banking disclosure (GDBI) has a positive influence on financial performance (ROE) with a probability value of 0.000 < 0.001.

### Discussion

The results of the panel data regression test in Table 4.3 show that green banking disclosure has a positive and significant effect on the financial performance of banks in the ASEAN region, both measured using ROA and ROE. This shows that green banking disclosure increases the influence of banking financial performance, the better banks adopt green policies, the more it will improve banking financial performance.

Another finding shows that banks in the ASEAN region are more likely to provide information on environmental policies, while the disclosure item that is rarely disclosed is information on climate change funds. This shows that the concept of environmental policy will improve the financial performance of banks in the ASEAN region.

The results of this study are in line with research from Kumari et al. (2024) found that modern banking systems adopt green banking initiatives and update traditional banking processes. Zhang et al. (2024) found that green financial policies affect corporate digital transformation mainly by enhancing digitalization and guiding towards more strategic management. Cui et al. (2023) found that it is important to integrate green practices, digitalization, and financial tools to improve regional environmental efficiency and promote sustainable development.



## CONCLUSION

The purpose of this study is to find empirical evidence of the influence of green banking policies on banking financial performance. The results of the study indicate that the disclosure of green banking policies has a significant positive effect on financial performance, both measured using ROA and ROE. The results of this study are expected to be additional literature for further research, especially issues related to green banking on banking financial performance. The results of this study are expected to be a guideline for banking policy makers to further optimize the concept of green banking as the main strategy to improve banking performance.

## REFERENCES

- Andriani, RS (2020). Boosting the Economy, Malaysia's Central Bank Cuts the Reference Interest Rate Big Time. Paper Knowledge . Toward a Media History of Documents. <https://ekonomi.bisnis.com/read/20200505/9/1236731/genjot-perekonomian-bank-sentral-malaysia-pangkas-bunga-acuan-besar-besar>
- Bose, S., Khan, H.Z., Rashid, A., & Islam, S. (2018). What drives green banking disclosure? An institutional and corporate governance perspective. *Asia Pacific Journal of Management*, 35(2), 501–527. <https://doi.org/10.1007/s10490-017-9528-x>
- Cui, J., Wang, W., Chen, Z., Ren, G., & Gao, X. (2023). How do digitalization and financial development impact eco-efficiency? Evidence from China. *Environmental Science and Pollution Research*, 30(2), 3847–3861. <https://doi.org/10.1007/s11356-022-22366-5>
- Du, Y., & Wang, W. (2023). The role of green financing, agricultural development, geopolitical risk, and natural resources on environmental pollution in China. *Resources Policy*, 82. <https://doi.org/10.1016/j.resourpol.2023.103440>
- Gu, X., & Wang, Y. (2023). Green credit policy and digital transformation of polluting firms: a quasi-natural experiment from China. *Frontiers in Environmental Science*, 11. <https://doi.org/10.3389/fenvs.2023.1281165>
- Li, M., Cao, G., Cui, L., Liu, X., & Dai, J. (2023). Examining how government subsidies influence firms' circular supply chain management: The role of eco-innovation and top management teams. *International Journal of Production Economics*, 261. <https://doi.org/10.1016/j.ijpe.2023.108893>
- Liu, C., & Wu, S.S. (2023). Green finance, sustainability disclosure and economic implications. *Fulbright Review of Economics and Policy*, 3(1), 1–24. <https://doi.org/10.1108/frep-03-2022-0021>
- Luo, D., Luo, M., & Lv, J. (2022). Can Digital Finance Contribute to the Promotion of Financial Sustainability? A Financial Efficiency Perspective. *Sustainability (Switzerland)*, 14(7). <https://doi.org/10.3390/su14073979>
- Pandey, D. K., Hassan, M. K., Kumari, V., Zaied, Y. Ben, & Rai, V. K. (2024). Mapping the landscape of FinTech in banking and finance: A bibliometric review. In *Research in*

- International Business and Finance (Vol. 67). Elsevier Ltd.  
<https://doi.org/10.1016/j.ribaf.2023.102116>
- Pu, G., Wong, W.K., Du, Q., Al Shraah, A., Alromaihi, A., & Young, I. (2024). Asymmetric impact of natural resources, fintech, and digital banking on climate change and environmental sustainability in BRICS countries. *Resources Policy*, 91.  
<https://doi.org/10.1016/j.resourpol.2024.104872>
- Reni Lestari. (2020). Impact of Corona, Vietnamese Banks Ordered to Cut and Delay Interest Payments. <https://kabar24.bisnis.com/read/20200221/19/1203968/dampak-corona-bank-vietnam-disyaratkan-potong-dan-tunda-pembayaran-bunga>
- Retno Wulandhari and Friska Yolandha. (2020). Banking in ASEAN Faces the Threat of Bad Debts. <https://repjabar.republika.co.id/berita/qa00kw370/perbankan-di-asean-hadapi-ancaman-kredit-macet>
- Tan, X., Cheng, S., & Liu, Y. (2024). Green digital finance and technology diffusion. *Humanities and Social Sciences Communications*, 11(1). <https://doi.org/10.1057/s41599-024-02902-z>
- Tok, E., Yesuf, A. J., & Mohamed, A. (2022). Sustainable Development Goals and Islamic Social Finance: From Policy Divide to Policy Coherence and Convergence. *Sustainability*, 14(11), 6875. <https://doi.org/10.3390/su14116875>
- Valencia, D. C., & Calabuig-Tormo, C. (2023). The Impact of Green Banking Activities on Banks' Green Financing and Environmental Performance. *Scientific Papers of the University of Pardubice, Series D: Faculty of Economics and Administration*, 31(1).<https://doi.org/10.46585/sp31011681>
- Zhang, L., Berk Saydaliev, H., & Ma, X. (2022). Does green finance investment and technological innovation improve renewable energy efficiency and sustainable development goals. *Renewable Energy*, 193, 991–1000. <https://doi.org/10.1016/j.renene.2022.04.161>
- Zhuo, R., Zhang, Y., Zheng, J., & Xie, H. (2024). Digitalization transformation and enterprise green innovation: empirical evidence from Chinese listed companies. *Frontiers in Environmental Science*, 12. <https://doi.org/10.3389/fenvs.2024.1361576>