

The Influence of Green Banking Activities on Environmental Performance of Listed Banks on the Indonesia Stock Exchange

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ABSTRACT

This study investigates the effect of green banking and green financing on the environmental performance of banks in Indonesia. Green Banking is a banking approach that integrates environmental factors in policies and operations, while green financing is related to environmentally friendly lending. The purpose of this study is to provide an understanding of the concept of Green Banking and its impact on the environmental performance of banks in Indonesia. Similar research has been conducted in several countries, but research in Indonesia is still limited. The results of this study are expected to serve as a basis for banks in implementing better Green Banking practices to achieve sustainable development.

KEYWORDS Green Banking, Green Financing, Bank Environmental Performance



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INTRODUCTION

The issue of climate change is one that is familiar to people today. The warming temperature of the earth has made people aware of the environmental changes of the planet we inhabit. Research conducted by the UK Meteorological Agency found the possibility of an increase in the earth's average annual temperature of more than 1.5 degrees Celsius in the next five years. It is even predicted that the hottest temperature record will occur between 2022 and 2026.

The increasing temperature of the earth is caused by increasing carbon emissions. The world's increasing carbon emissions can cause environmental damage. Based on data from the International Energy Agency (IEA), carbon dioxide (CO₂) emissions from energy combustion and global industrial activities reached 36.8 gigatons in 2022. These emissions increased by about 0.5 gigatons compared to 2021, as well as being a new record high in history as shown in the graph, responding to this, all parties need to make efforts to overcome this environmental problem.

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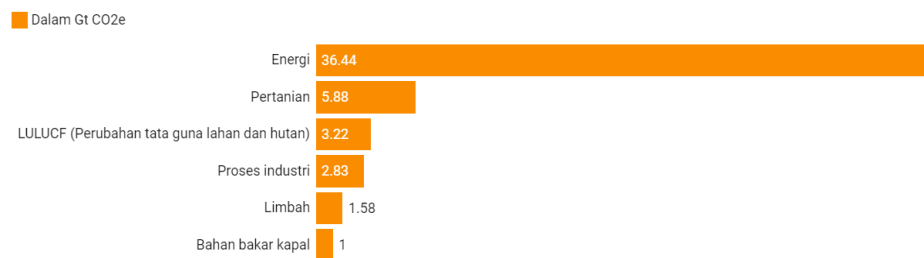


Figure 1. Graph of GHG emission sources by sector
(Source: Climate Watch)

According to Climate Watch data, the electricity sector is the world's largest emitter of carbon dioxide (CO₂). The reason is that 40% of the total CO₂ emissions in the world come from this sector, so to reduce the increase in carbon emissions, the government is currently introducing the term Carbon Pricing. Carbon Pricing is an explicit price for the externality of carbon emissions that is applied by the government and paid by the polluter.

The concepts of sustainability and social responsibility are increasingly becoming a global focus, including in economic growth and the financial system. Banks as institutions that have a major influence in people's lives have an important role to play in addressing these environmental issues through the concept of sustainability. The Indonesian government is currently introducing 'green' policies, so all financial institutions must implement a long-term plan to monitor the environmental impact of their customers to ensure sustainability. One of the things that banks can do to minimize environmental pollution due to their business activities is to implement the concept of green banking.

Green banking is a concept to support environmentally friendly practices and reduce the carbon footprint of banking activities. According to (Chen et al., 2022), Green Banking is a banking activity where banks take the initiative to carry out their daily operations by considering environmental sustainability both internally and externally (Banks that carry out these activities are referred to as socially responsible and sustainable banks). Banks that implement Green Banking, in addition to maintaining the company's internal environmentally friendly activities, also help make the environment green and viable through environmentally friendly financing.

The concept of green banking includes environmentally friendly lending (Green Financing), the use of energy-efficient equipment, environment-based policies, saving the use of paper, and so on. When banks want to minimize the use of paper or paperless, then banks need to transform their business activities into digital. Green Financing is the latest breakthrough for the financial industry to channel and allocate funds to businesses that are oriented towards environmental sustainability. According to Zhang (2022), Green financing is a phenomenon that combines the world of finance and business with environmentally friendly behavior. According to Hoque (2019), "Green financing is a broad term that can refer to financial investments that flow into sustainable development projects and initiatives, environmental products, and policies that promote sustainable economic development".

Green banking and green financing are closely related in improving banks' environmental performance. The synergy between green banking and green financing encourages banks to reduce environmental risks in their operations and portfolios. By implementing green banking practices, such as reducing greenhouse gas emissions, managing waste efficiently, or using renewable energy, banks can reduce negative impacts on the environment and mitigate risks related to climate change or environmental policies.

Indonesia as one of the world's most influential economic growth countries is characterized by its considerable economic, investment and development potential to become a major market, but Indonesia is experiencing the challenges of climate change and its impact on the environment. By 2023, Indonesia is considered to be one of the countries most affected by climate change due to rising global temperatures resulting in economic instability. Indonesia is faced with challenges that hinder the development of Green Banking, thus hindering sustainable economic growth, this is in line with research conducted by Akter (2021) High operating costs, diversification issues, and credit risk are the main challenges to the development of Green Banking in Indonesia, this is in line with research conducted by (Ngwenya & Simatele, 2020). Research conducted Sarker (2020) states that banks must take a significant role related to climate change through green banking.

In 2021, 4 major banks such as PT Bank Mandiri, PT Bank Negara Indonesia, PT Bank Rakyat Indonesia, and PT Bank Central Asia provided funding for coal projects. The total funding provided is Bank Mandiri of 36 trillion, Bank BNI of 27 trillion, Bank BRI of 26 trillion, and Bank BCA of 12 trillion (CNI Indonesia, 2022). As the driving force of the country's economy, banks are required to make an optimal contribution by transforming their behavior and activities (Rehman et al., 2021). Therefore, it is expected that banks can increase attention to project financing that is oriented towards improving the quality of the environment, such as making disclosures related to accountability for environmental-related issues considering that there are still few banks that care about sustainability issues.

Research related to Green Banking Activity, green financing, and banking environmental performance is still very rare, especially in Indonesia because the Green Banking issue is a recently discussed issue and some parties have not seen Green Banking as a priority. Research related to Green Banking has only been conducted in several countries such as Bangladesh Zhang (2022), Rehman, (2021), Africa Ngwenya (2020), and China (Zhou et al., 2020). However, most research related to Green Banking and banking environmental performance is quite a lot in Bangladesh and China. Based on research Zhang (2022), Bangladesh Bank is considered the first bank in the world central bank to promote Green Banking activities through the issuance of Green Banking guidelines.

Green Banking research in Indonesia is still very limited, which is due to Awareness of environmental issues and sustainable banking practices may still be limited in Indonesia compared to more developed countries in this regard and Most research in Indonesia may be more focused on more pressing economic issues, such as poverty, unemployment, and other social problems, this could be the reason why Green Banking has not been the center of significant research attention. This this study will fill the research gap that will examine "The Effect of Green Banking

Activities on the Environmental Performance of Banks Listed on the Indonesia Stock Exchange (Green Financing as a Mediating Variable)".

RESEARCH METHOD

This research is quantitative research with a descriptive format. The data used in this study are primary data obtained from questionnaires distributed to respondents. The data collection method used is to use a questionnaire distributed to bankers or banking employees. The questionnaire distributed contained 3 parts of questions sourced from research. The three parts of the questionnaire are questions related to Green Banking Activities, Green Financing Sources, and Banking Environmental Performance. The questionnaire questions used a Likert scale of 1 to 5. The population in this study were banking employees who worked at commercial banks listed on the SRI KEHATI Index. In this study, the issuers used were only 5 banking issuers consisting of BBKA, BBRI, BMRI, BBNI, and BBTN. This research uses the Structural Equation Model (SEM) with the PLS program.

RESULT AND DISCUSSION

This chapter will discuss the results of research conducted by researchers including respondent demographics with descriptive statistical analysis, measurement model analysis, structural model analysis, as well as discussion of hypothesis testing results and mediation test results.

Table 1. Respondent Profile

Variables	Description	Number of Respondents	Percentage (%)
Gender	Female	61	39.1
	Male	95	60.9
Age	18-25 Years	6	3.8
	26-35 Years	55	35.3
	36-45 Years	38	24.4
	Over 46 Years	57	36.5
Education Level	Bachelor (S1)	142	91.0
	Master (S2)	14	9.0
	Doctor (S3)	0	0
Working Institution	BRI Bank	31	19.9
	BCA Bank	31	19.9
	BNI Bank	30	19.2
	BTN Bank	34	21.8
	Bank Mandiri	30	19.2
Work Experience	Less than 2 years	3	1.9
	3-5 Years	29	29.0

More than 5 years	124	7.0
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Source: (Data Processed SPSS, 2024)

Table 1. provides information related to the demographics of respondents collected in this study totaling 156 respondents. The characteristics of respondents based on gender in table 1. show that respondents in this study were mostly dominated by male respondents, namely 60.1% of respondents. The characteristics of respondents based on age show that most of the respondents were dominated by respondents aged more than 46 years, namely 36.5% of respondents. Furthermore, the characteristics of respondents based on education level, most of the respondents who answered had an undergraduate education level of 91% while employees with a Masters education level were 9%.

In this study, all respondents were employees of 5 banks listed on the SRI KEHATI issuer and each bank was sampled with a minimum of 30 employees including Bank BRI and BCA each by 19.9%, Bank BNI and Mandiri 19.2%, and Bank BTN by 21.8%. Finally, in the characteristics of respondents based on the length of work experience, most of them were answered by respondents who had worked above 5 years by 79%, 3-5 years by 18.6%, and less than 2 years only 1.9% of respondents.

Data Analysis Test Results

Outer Model Output

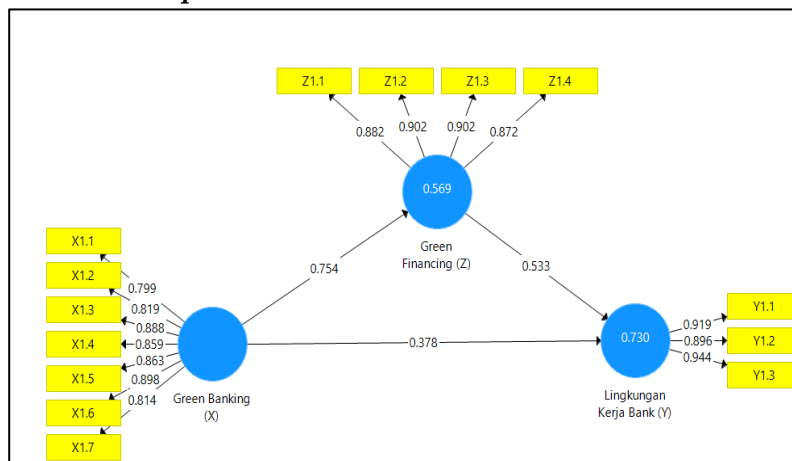


Figure 2. Outer Model Results

Source: SmartPLS 3.2.9 Output

a. Convergent Validity

Based on the picture above, it can be seen that all indicators are greater than the 0.7 criterion, meaning that all indicators of this research variable pass the convergent validity test.

b. Discriminant Validity, CR, and Cronbach's Alpha

The following are the results of the Discriminant Validity, CR, and Cronbach's Alpha tests which will be explained in table 2:

Table 2. Discriminant Validity, CR, and Cronbach's Alpha Test Results

	Cronbach's Alpha	rho_A	Composite Reliability	Average Variance Extracted (AVE)
Green Banking (X)	0.935	0.937	0.948	0.721
Green Financing (Z)	0.912	0.912	0.938	0.791
Bank Environmental Performance (Y)	0.909	0.910	0.943	0.846

Source: SmartPLS 3.2.9 Output Data Processed, 2024)

Based on table 2, all variables have an Average Variance Extracted (AVE) value > 0.5 so that it can be stated that all variables meet the Average Variance Extracted (AVE) requirements and passed the discriminant validity test. The composite reliability value is > 0.7 so that it can be stated that all variables meet the requirements of the composite reliability test. Cronbach alpha value > 0.7 so it can be concluded that all statements are reliable, meaning that they can consistently be trusted to be used in research.

Hypothesis Test Results

In this study, there are direct effects and indirect effects which are explained in the explanation below.

a. Direct Influence

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (O/STDEV)	P Values	Result
Green Banking (X) -> Bank Environmental Performance (Y)	0.378	0.379	0.093	4.071	0.000	<i>Supported</i>
Green Banking (X) -> Green Financing (Z)	0.754	0.758	0.040	18.723	0.000	<i>Supported</i>
Green Financing (Z) -> Bank Environmental Performance (Y)	0.533	0.532	0.113	4.714	0.000	<i>Supported</i>

Source: SmartPLS 3.2.9 output processed, 2024

Hypothesis 1: The test results show a t-statistic value of 4.071 and a P-value of 0.000. From these results, it is stated that the t-statistic is significant because the t-statistic is greater than the t-table > 1.96 with a p-value < 0.05 so that the first hypothesis is supported.

Hypothesis 2: The test results show a t-statistic value of 18.723 and a P-value of 0.000. From these results, it is stated that the t-statistic is significant because the t-statistic is greater than the t-table > 1.96 with a p-value < 0.05 so that the second hypothesis is supported.

Hypothesis 3: The test results show a t-statistic value of 4.714 and a P-value of 0.000. From these results, it is stated that the t-statistic is significant because the t-

statistic is greater than the t-table > 1.96 with a p-value <0.05 so that the third hypothesis is supported.

b. Mediation Test Results

The results of the Mediation Test in this study are as follows:

Table 4. Mediation Test Results

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (O/STDEV)	P Values	Result
Green Banking (X) -> Green Financing (Z) -> Bank Environmental Performance (Y)	0.402	0.402	0.087	4.642	0.000	Supported

Source: SmartPLS 3.2.9 Output Data processed, 2024

Hypothesis 4: Based on the analysis results, the P-value <0.05. So it can be concluded that green financing is able to mediate the effect of green banking on environmental performance and the fourth hypothesis is supported.

The results of data testing on the first hypothesis which states that *Green Banking Activities* affect the environmental performance of banks listed on the Indonesia Stock Exchange are supported. This is in line with research Risal et al. (2018) which shows that green banking practices are generally positively and significantly related to bank environmental performance, especially those related to policies, human resources and bank operations. Research results Shaumya & Arulrajah (2017) stated that green banking practices as a whole have a positive effect on the environmental performance of banks in Sri Lanka, practices related to employees, daily operations, and bank policies also have a positive and significant effect on bank environmental performance.

The second hypothesis which states that *Green Banking Activities* affect *Green Financing* in banks listed on the Indonesia Stock Exchange is supported, this is proven after the data test results are carried out. This is in line with research conducted by Rehman et al. (2021), Nizam (2023) also shows that environmental financing has a positive effect on bank financial performance through loan growth. Other studies that are in line with the results of this study are Zhang et al. (2022a) which states that green banking activities play an important role in the growth and development of green financing in Bangladesh because it helps reduce environmental pollution and achieve sustainable development in Bangladesh.

The results of the data analysis test show that the third hypothesis in this study is supported where Green Financing is able to influence the environmental performance of banks listed on the Indonesia Stock Exchange. This is in line with previous research that has been researched by Kala (2020) stated that green loans, green projects and green policies have a significant impact on the environmental performance of banks, but there are previous studies that are inconsistent, including

Risal et al. (2018) found that green loans and green projects have a negative impact on bank environmental performance in the Nepalese banking sector. Research by Risal et.al (2018) states that despite efforts in the Nepalese banking sector to provide loans and support environmentally friendly projects, lack of supervision, weak law enforcement, or lack of environmental awareness could be the cause of the ineffectiveness of green loans and financing projects (Jain & Sharma, 2023).

The results of the data test on the fourth hypothesis of this study which states that green financing is able to mediate the effect of green banking on the environmental performance of banks listed on the Indonesia Stock Exchange are supported. Green financing can be a mechanism that connects Green Banking commitment with real implementation through financing green projects (Khairunnessa et al., 2021). The results of this study are in line with the research of Zhang et al. (2022) who stated that their findings are the first study to examine the mediating effect of green financing on the relationship between green banking activities and bank environmental performance in the context of commercial banks in Bangladesh. The empirical findings show that green financing has significantly mediated the relationship between green banking activities and bank environmental performance, thus validating Hypothesis 4.

CONCLUSION

This study investigates the effect of Green Banking activities on the environmental performance of banks listed on the Indonesia Stock Exchange, with Green Financing as a mediating variable. The results of this study provide strong evidence of the positive effect of Green Banking activities on the environmental performance of banks listed on the Indonesia Stock Exchange. The concept of Green Banking, which involves the integration of environmental factors in banking policies and operations, as well as Green Financing as a mediating variable, plays an important role in achieving sustainable development. The implementation of green practices, such as the reduction of greenhouse gas emissions, efficient waste management, and the use of renewable energy, can help banks reduce negative environmental impacts and manage risks related to climate change or environmental policies.

The research also emphasizes the importance of synergies between green banking and green financing. Greater financial support for sustainable development projects and environmental initiatives through Green Financing can strengthen green practices within the banking sector. In the context of Indonesia, with its influential economic growth rate, this research provides a basis for banks to implement better Green Banking practices and contribute positively to environmental protection. Although research in Indonesia is still limited, the results of this study provide a better understanding of the importance of Green Banking in achieving sustainable development. The implications of this research are important for banks in adopting more extensive green practices and realizing their social and environmental responsibilities.

Based on the above conclusions, the findings of this study provide several implications for researchers, managers, bankers, government authorities, banking institutions, and investors in Indonesia to stimulate green banking through green project financing to improve banks' environmental performance. Therefore,

banking authorities should focus more on developing Green Banking activities in daily operations by providing online banking facilities, online bill payment facilities, remote deposit, mobile banking, environmentally friendly debit and credit cards, etc., to improve banking performance, environmental performance, as well as profitability.

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