STIESIA
Sekolah Tinggi Ilmu Ekonomi Indonesia Surabaya
4th INTERNATIONAL CONFERENCE ON BUSINESS & SOCIAL SCIENCES
BUSINESS REVIVAL THROUGH DIGITAL TECHNOLOGY TRANSFORMATION
ICOBUSS INTERNATIONAL CONFERENCE ON BUSINESS & SOCIAL SCIENCES
e-ISSN 2746-5667

THE INFLUENCE OF GREEN BANKING IMPLEMENTATION, ISLAMIC SOCIAL REPORTING AND COVID-19 CRISIS ON PROFITABILITY WITH BANK SIZE AS A MODERATING VARIABLE IN ISLAMIC GENERAL BANK PERIOD 2016-2023

Nur Aisyah Indarningsih[1*], Rokhimah[2]

[1,2]State Islamic Institute, Sorong, Indonesia

*Corresponding Author: nuraisyahindarningsih0@gmail.com, rokhimah@iainsorong.ac.id,

Abstract: This study uses bank size as a moderating variable to examine the effects of the Covid-19 crisis, Islamic social reporting, and the deployment of green banking on profitability in Indonesian Islamic commercial banks. In this work, panel data regression and moderated regression analysis are used as data analysis methods. Eleven Indonesian Islamic commercial banks that were registered with the OJK between 2016 and 2023 used as the study's sample. The study's findings show that Islamic commercial banks' profitability is significantly and favorably impacted by ISR. Profitability (ROE) is significantly impacted negatively by the Covid-19 situation, but not ROA. In the meantime, Islamic commercial banks' profitability is unaffected by green banking. The association between green banking and profitability may be moderated by the moderating variable of bank size. This research highlights how crucial risk management, responsibility, and openness are in a period of unpredictable economic times. In the context of Islamic banking, the impact of ISR procedures and reactions to financial crises like COVID-19 is quite significant. Islamic banks should see an improvement in their financial performance in the future by strengthening their ISR management and comprehending the implications of green banking.

Keywords: Green Banking, Islamic Social Reporting (ISR), Covid-19 Crisis, Bank Size, Profitability

1. Introduction

Resources for economic growth are largely provided by the financial sector, particularly for the banking industry (Manoj & Kumari, 2023). Islamic banking included in this sector provides financial services in accordance with sharia principles, namely justice, transparency, and sustainability. It is well known that the assets of Indonesia's Islamic banking industry have consistently increased year over year, showing that Islamic banks can coexist peacefully with conventional banks (Rachmawati & Praptiningsih, 2024).

The total assets of Islamic Commercial Banks were IDR 316,691 billion in 2018. In 2019, IDR 350 billion, in 2020, IDR 379 billion, and in 2021, IDR 441 billion were added to this amount. This shows that Islamic Commercial Banks are on a positive growth path, strengthening their position in the Islamic banking sector in Indonesia. It turns out, though, that Islamic banks are now not performing up to par. The performance of Islamic banking still has to be improved, even if it has surpassed the banking market share target of more than 5% (LPPI, 2021). According to data from the Central Statistics Agency (BPS), in 2021 the share of Islamic bank assets to those of conventional banks was 4.37 percent. Compared to conventional banks, which have funds of Rp 1,360 trillion, sharia banks presently have equity capital of just Rp 47 billion.

As a result, banking has started to shift from being focused on profits to being focused on stakeholders and paying greater attention to social and environmental responsibilities.

Business operational practices that consider environmental issues for banking are known as green banking (Rahma & Wedari, 2024). In order to support government initiatives to preserve the environment and develop the environment, the use of green banking is especially crucial (Putri et al., 2022). A bank's dedication to environmental concerns is crucial. It must be the banking industry's duty to keep an eye on and control the environmental effects of its operations. By employing online transactions for everyday activities like internet banking, SMS banking, and ATMs, banks can avoid using paper by applying green banking (Ratnasari et al., 2021). In addition to having a positive effect on the environment, green banking also helps banks make more money because of how quickly transactions can be completed through online banking and mobile applications, which boosts operational efficiency (Al-Kubaisi & Khalaf, 2023). The impact of green compliance on potential benefits is substantially higher for Islamic banks than for conventional banks, according to research by Sharmeen & Yeaman (2020). This is as a result Islamic ideals are reinforced by the greater benefits that green finance offers.

Islamic Social Reporting (ISR) is a type of environmental performance that is consistent with the adoption of green banking and has the potential to impact bank profitability (Rachmawati & Praptiningsih, 2024). Islamic banks have an obligation to generate societal benefits, hence they must exercise social responsibility in their operations. Islamic Social Reporting (ISR) is an index that combines elements related to investments, money, goods, and services for this reason (Hosen et al., 2019). ISR is a reporting framework that aims to communicate the bank's social responsibility and ethical performance based on sharia principles. ISR includes reporting on the bank's contribution to social activities, philanthropy, and compliance with Islamic ethical standards. It is thought that effective ISR implementation can boost public confidence, enhance the standing of sharia banks, and eventually improve financial performance (Marzuki et al., 2023).

According to Rahma & Wedari (2024), bank profitability (ROE) is significantly increased by green banking. Wongso et al. (2023) demonstrates that the volume of transactions conducted through e-channels internet, mobile, and SMS banking has a major impact on return on assets (ROA) in Indonesian general banks. (Jain & Sharma, 2023) discovered a strong correlation between the profitability of banks and their environmental performance. As such, green banking policies have a big impact on funding or investment in green initiatives as well as daily operations. According to Ramdani et al. (2023) there is a noteworthy correlation between the profitability of Islamic banks in Indonesia and the adoption of Green Banking as the primary determinant.

On the other hand, studies by Al-Kubaisi & Khalaf (2023) indicate that there is no correlation between bank return on equity and the availability of green banking. Similarly, studies by Putri et al. (2022) show that the bank's return on assets (ROA) is unaffected by the adoption of green banking. Green banking can actually be implemented more efficiently by using technological advancements in its operations, resulting in a decrease in energy consumption and an increase in paperless transactions. This will lead to an increase in bank earnings and a decrease in operational costs.

Rachmawati & Praptiningsih (2024) shows that Islamic Bank Social Responsibility (ISR) has a negative impact on bank profitability. Marzuki et al. (2023) also mentioned that Corporate social responsibility is very important to improve banking sustainability. However Hosen et al. (2019) did a study which indicates that Islamic banks should focus on achieving mashlahah (public interest) instead of using ISR as their primary metric of accomplishment. The application of sharia and maslahah in financial institutions, like an Islamic bank, is not only

invariably linked to high levels of profit but also promotes social welfare and safeguards the vulnerable.

Taking note of this occurrence, this study attempts to close the knowledge gap by examining how Islamic Commercial Banks' profitability was affected from 2016 to 2023 by the adoption of green banking and Islamic Social Reporting (ISR). Numerous nations have investigated how green banking affects bank profitability. However, studies on the implementation of green banking are still limited (Ratnasari et al., 2021 dan Wongso et al., 2023), especially research on Islamic banking (Ramdani et al., 2023 dan Sharmeen & Yeaman, 2020). In addition, because the period in this study contains a crisis period, additional analysis was conducted to see whether the Covid-19 crisis affected the profitability of Islamic banks. This study is expected to enrich the empirical literature on Islamic banking in Indonesia, offering evidence that sustainability practices and social transparency can improve bank image and profitability. In addition, this study provides recommendations for Islamic banking policies to strengthen profitability aspects while fulfilling Islamic principles and maintaining social and environmental responsibility.

2. Literature Review

Stakeholder Theory

Stakeholder Theory is a theory that states that the success of a company is not only determined by the interests of shareholders, but also by the interests of various parties related to or affected by the company's operations, called stakeholders (Freeman & McVea, 2005). R. Edward Freeman proposed this idea in 1984, and it highlights the need for businesses to take into account the interests of all people involved in their operation, whether directly or indirectly. Shareholders, staff members, clients, vendors, the government, regional communities, and even the environment are examples of stakeholders. In this context, companies are not only responsible for making a profit, but must also fulfill social and ethical responsibilities to other stakeholders. Business decision making must be done in a balanced way, considering the impact on all stakeholders (Almulhim & Aljughaiman, 2023). Thus, this approach not only seeks short-term welfare for shareholders, but also encourages the long-term sustainability of the company by maintaining good relationships with all parties involved.

Legitimacy Theory

Legitimacy Theory according to (Mousa, et. al., 2015) explains that companies seek to gain, maintain, or improve their legitimacy by using social and environmental reporting. In this context, legitimacy means that there is a fit between the company's values and the broader social values in society. When there is a threat to the company's legitimacy, they use strategies such as increased transparency and social reporting to improve their public image, especially in terms of social and environmental responsibility. This reporting is also used as a means to assert that the company's operations are in line with prevailing social expectations (Al-Homaidi et al., 2020).

Green Banking on Banking Profitability

A concept in banking known as "green banking" combines elements of environmental sustainability with traditional financial practices. The inception of the green finance concept originated in Western nations (Weber, 2016). In 2003, green banking was formally formed with the objective of safeguarding the environment. Since paper is produced by cutting down

trees, the original concept behind "green banking," or "green banking," was to decrease the quantity of paper needed in financial activities. Paper naturally causes the atmosphere's levels of carbon dioxide and oxygen to rise (Saputri et al., 2024). This case, Islamic banks that implement green banking practices focus on reducing carbon emissions, financing environmentally friendly projects, and energy efficiency, which not only aim to support environmental sustainability but also increase profitability (Inegbedion, 2024)

The profitability of Islamic banks, which is usually measured through indicators such as Return on Assets (ROA) and Return on Equity (ROE), is greatly influenced by operational efficiency and the bank's reputation in the eyes of customers. The implementation of green banking through environmentally friendly technology and digitalization increases the operational efficiency of banks by reducing the use of energy and resources, as well as optimizing banking processes(McKinsey, 2022). This technology reduces operational costs and increases profitability, for example through the use of e-statements and online banking services that reduce physical needs, such as paper. Studies show that banks that implement green technology innovations are able to significantly reduce operational costs and increase their profits so that the implementation of green banking can increase efficiency through the adoption of environmentally friendly technology and digitalization, which leads to lower operational costs and increased profits (Hossain et al., 2024).

In addition, Islamic banks that support green banking tend to gain more trust from customers and investors because they are considered to be in line with Islamic ethical principles, which pay attention to social and environmental balance. This increased reputation contributes to increased customer loyalty and profitability growth (Bouteraa et al., 2020). (Al-Kubaisi & Khalaf, 2023) mentioned that green banking is one of the most effective ways to reduce banking costs, which will ultimately increase bank profitability. However, not all banks are affected equally, for various reasons.

Several previous studies have investigated the impact of green banking implementation on bank financial performance or profitability. Research by (Jan et al., 2018) revealed that banks implementing environmentally friendly sustainability practices experienced increased customer loyalty, which had a positive impact on financial performance. The findings suggest that green banking disclosure improves banks' financial performance. (Buallay, 2019) who conducted a study on banks registered in European Union member countries and found that environmental concerns carried out by banks can increase bank profitability. This shows that the implementation of green banking in banking can increase operational efficiency and profitability in the long term. In addition, a study by (Rahma & Wedari, 2024) shows that the disclosure of green banking index has a significant positive impact on profitability. Research by (Inegbedion, 2024). (Khan et al., 2024) shows that green banking disclosure has a significant positive effect on bank profitability. In addition, this disclosure also strengthens the reputation and improves the operational efficiency of the bank, which overall contributes to the growth of bank profitability through increasing trust and loyalty from customers and investors. Based on these results, the hypothesis proposed is

H1: Green banking disclosure has a positive and significant impact on the profitability of Islamic Commercial Banks in Indonesia.

Islamic Social Reportingon Banking Profitability

Islamic Social Reporting (ISR) is a social responsibility implemented based on Islamic sharia principles, which includes economic, social and spiritual aspects (Ridwan & Mayapada, 2022). In Islamic banking, ISR includes compliance with sharia, social involvement, business ethics,

and economic empowerment. ISR in Islamic banks is not only aimed at seeking financial gain, but also contributes to the development of social welfare through programs such as zakat, infaq, and other philanthropic activities (Marzuki et al., 2023). So that consistent implementation of ISR can improve reputation and positive image in the eyes of the public, which ultimately has the potential to increase bank profitability.

Theoretically, the relationship between ISR and profitability can be explained through several approaches. First, the Legitimacy Theory states that by implementing ISR, Islamic banks gain legitimacy from the community which can increase customer trust and loyalty, thus supporting long-term financial performance (Cantia Lambada et al., 2022). Second, Stakeholder Theory explains that banks have responsibilities to various parties, such as customers, employees, and the community. By meeting their expectations through the implementation of ISR, banks can improve their profitability performance (Mukhibad et al., 2022).

The influence of ISR on the profitability of Islamic banks in Indonesia can be seen through several mechanisms. The implementation of ISR can increase public trust and strengthen the positive image of the bank, which has an impact on increasing the number of customers and investors. In addition, ISR also contributes to increasing the operational efficiency of banks through compliance with sharia principles, which can ultimately reduce operational costs and increase profits (Ben Abdallah & Bahloul, 2023). Thus, good implementation of ISR can have a positive impact on the profitability of Islamic banks, especially in the long term (Khémiri & Alsulami, 2023).

According to research, Islamic banks that implement ISR consistently show increased financial performance. This is proven through studies that show that there is a positive relationship between compliance with ISR principles and good financial performance, including increased return on assets (ROA) and return on equity (ROE) (Ben Abdallah & Bahloul, 2023) (LambadA et al., 2022). Besides that (Romadhoni & Rusmita, 2021) who conducted research on Islamic commercial banks in Indonesia for the period 2016-2020 revealed that the results of ISR disclosure have a significant positive effect on the financial performance of Islamic banks. Thus, the implementation of ISR not only fulfills social responsibility but also makes a significant contribution to the profitability of Islamic banks in Indonesia. Based on these results, the hypothesis proposed is:

H2: Disclosure of Islamic Social Reporting has a positive and significant influence on the profitability of Islamic Commercial Banks in Indonesia.

Covid-19 Crisis on Sharia Bank Profitability

The COVID-19 pandemic has had a significant impact on banking profitability through several mechanisms. The financial crisis theory explains that the pandemic increases the risk of bad debt and reduces market confidence, which has an impact on the decline in the quality of banking assets (Nugroho & Trinugroho, 2023). Bank liquidity theory suggests that the crisis also worsens liquidity conditions, forcing banks to hold larger reserves, which lowers profits, although income diversification can help banks survive, the crisis also affects non-interest income such as fee-based income (Hardiyanti & Aziz, 2021). (Pamuncak & Wijaya, 2022) examined the relationship between corporate profitability and the COVID-19 crisis in previous research on the subject. According to their analysis, COVID-19 has had a negative impact on the profitability of Indonesian companies. Thus, for many countries around the world, COVID-19 has caused not only medical problems but also economic problems, especially in the banking sector (Ramdani et al., 2023). The results in line were also expressed by (Syafitri & Khalifaturofi'ah, 2023), which shows that the impact of the COVID-19 crisis has a negative

impact on the condition of the financial sector in Indonesia. Based on these results, the hypothesis proposed is:

H3: The Covid-19 crisis has a negative and significant impact on the profitability of Islamic Commercial Banks in Indonesia.

The Influence of Green Banking on Banking Profitability with Bank Size as a Moderating Variable

The influence of green banking on banking profitability can be explained through the perspective of Stakeholder Theory and Legitimacy Theory, which highlight the importance of maintaining relationships with various stakeholders and gaining social legitimacy through practices that comply with environmental norms (Aerts & Cormier, 2009). In implementing green banking, banks strive to integrate environmentally friendly practices into their operations in response to pressure from stakeholders who are increasingly concerned about sustainability and environmental issues. By doing so, banks not only meet stakeholder expectations, but also strengthen their social legitimacy, which can increase public trust and ultimately have a positive impact on profitability (Wrespatiningsih & Mahyuni, 2022).

However, the effect of green banking on profitability can be influenced by the size of the bank. Larger banks have stronger resources to implement green banking initiatives effectively and widely. Bank size can also increase the visibility of green banking programs in the eyes of stakeholders, so that the legitimacy gained through these practices will be more significant (Lavin & Montecinos-Pearce, 2021). (Platonova et al., 2018) states that large banks have easier access to capital sources, which allows them to obtain more funding. With more resources, large banks are better equipped to handle sustainability projects and support green financing. Large banks can also be more responsive to stakeholder demands, potentially improving their financial performance (Platonova et al., 2018). Therefore, bank size can moderate the relationship between green banking and profitability, where larger banks tend to gain greater financial benefits from implementing green banking compared to smaller banks (Rahma & Wedari, 2024). Based on this, the hypothesis that can be put forward is:

H4: Bank size can moderate the relationship between green banking disclosure and the profitability of Islamic Commercial Banks in Indonesia.

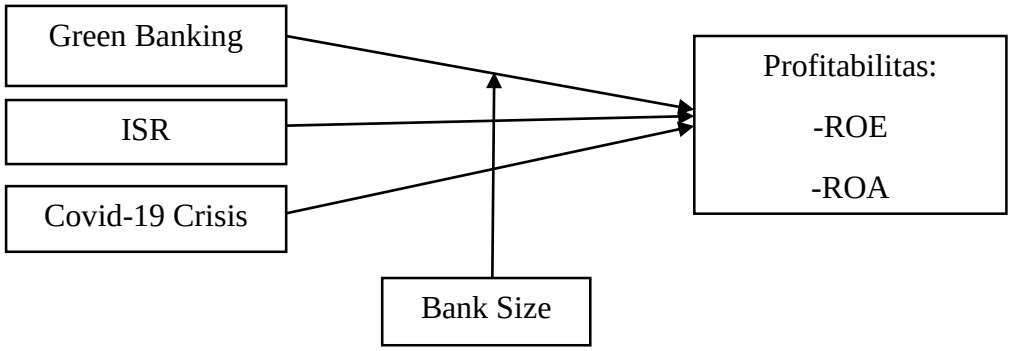

Figure 1: Conceptual Framework

3. Method

Population and Sample

In research, the term population refers to a complete collection of people, objects, or events that are the subject of research and have similar characteristics (Hair, 2006). The population in

this study is all Islamic Commercial Banks (BUS) registered with the OJK in the period 2016–2023. Therefore, the selection of representative samples and using selection procedures is needed to generalize the results. Purposive sampling, which is sampling based on predetermined standards that are modified to meet the goals of the study, was used to choose the sample. The following criteria are applied while choosing a sample:

a. Islamic Commercial Banks that are registered and supervised by the Otoritas Jasa Keuangan (OJK)
b. Islamic Commercial Banks that published financial reports during the research period 2016-2023.

So that the total sample in this study is 11 Islamic Commercial Banks. The research data was obtained from secondary sources such as the Indonesia Stock Exchange and annual reports of banking companies. Panel data regression is a data analysis technique used to determine the effect of independent variables on dependent variables. The level of significance determined in this study is 5%, which indicates that the probability of valid results is 95% based on the conclusions drawn. The data used uses time-series and cross-sectional data. Time-series data covers the period 2016 to 2023, while cross-section data covers 11 Islamic banking companies. Panel data regression analysis and moderated regression analysis (MRA) are the data analysis methods employed in this study. Descriptive statistical analysis, panel data regression analysis, classical assumption test, the determination coefficient, the F test and the the T test make up the testing stage.

Research Instruments

Research variables are variations in the properties of an object or activity that are determined by researchers to determine their conclusions. The variables used in this study are divided into:

Table 1. Research Instruments

Variables	Operational Definition	Measurement	Scale	Source
Profitability	The ratio used to measure a company's ability to generate profits.	ROA = (Net Income) / Total Assets) x 100% ROE = (Net Income) / Equity) x 100%	%	(Siswanto, 2019)
Green Banking	A banking concept that integrates environmental sustainability aspects into banking operations.	The green baking ratio is defined as the ratio of the green coin rating of total Islamic banks to total indicators of green coin rating.	%	(Ramdani et al., 2023)
ISR	Social responsibility is implemented based on Islamic sharia principles, which include economic,	Islamic Disclosure = (Disclosure Item / 48) x 100%	%	(Hosen et al., 2019)

Variables	Operational Definition	Measurement	Scale	Source
Covid-19 Crisis	social and spiritual aspects. The pandemic increased the risk of bad debts and reduced market confidence, which resulted in a decline in the quality of banking assets.	Measuring Crisis 0 = Pre COVID-19 1 = Post COVID-19	Dummy	(Ramdani et al., 2023)
Bank Size	The scale of a bank's size can be measured using total assets, total sales, or total capital.	LN (Total Assets)	%	(Nur et al., 2024)

The regression equation used in this study is as follows:

$$\gamma 1 = \alpha + \beta 1x1 + \beta 2x2 + \beta 3x3 + +e \quad (1)$$

$$\gamma 2 = \alpha + \beta 1x1 + \beta 2x2 + \beta 3x3 + +e \quad (2)$$

Meanwhile, for Moderated Regression Analysis, namely:

$$Y1 = \alpha + \beta 1x1*Z + +e \quad (3)$$

$$Y2 = \alpha + \beta 1x1*Z + +e \quad (4)$$

Information:
Y1 = ROE
Y2 = ROA
α = coefisient
β1x1 = Green Coin
β2x2 = ISR
β2x3 = Krisis Covid-19
e = Eror
Z = Bank size

4. Result and Discussion

Descriptive Statistics

Descriptive statistical analysis shows that the financial performance of the companies varies, with some experiencing losses (negative ROA), although ROE is generally positive. Banks' engagement in Green Banking Coin (GC) tends to be moderate with considerable variation, while Islamic social reporting (ISR) is relatively consistent across companies. Around 37.5% of banks were affected by the Covid-19 (C19) Crisis, indicating a significant impact on some banks, while others were unaffected. Bank sizes (SB) vary, but are mostly in a similar range.

Table 2. Descriptive Statistics

	ROA	ROE	GC	ISR	C19	SB
Mean	-0.124395	1.028182	3.066381	4.304256	0.375000	29.56045
Median	0.095310	1.205000	3.279949	4.317488	0.000000	29.98500
Maximum	2.610070	3.600000	4.514589	4.495169	1,000,000	33.45000
Minimum	-3.912023	-4.610000	0.000000	4.066174	0.000000	19.96000
Std. Dev.	1.602620	1.805183	0.828069	0.122018	0.486897	2.409207
Observations	88	88	88	88	88	88

Source: Eviews, 2024

Classical Assumptions

Data Normality Test

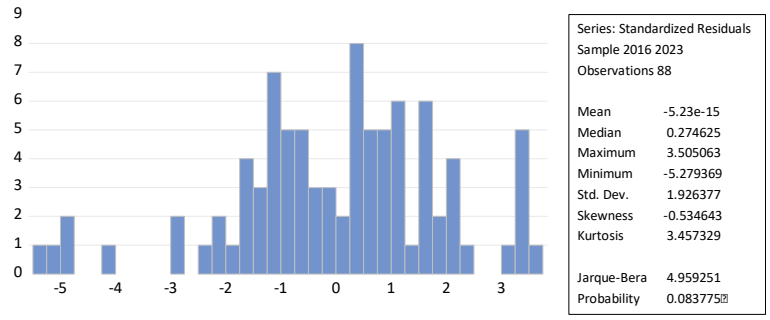

Figure 2: Results of ROE Normality Test
Source: Eviews, 2024

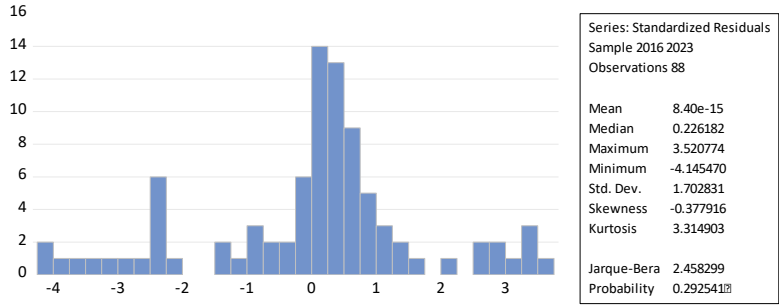

Figure 3: Results of ROA Normality Test
Source: Eviews, 2024

The image above shows that the probability value of each ROE and ROA variable is 0.083775 and 0.292541 > (0.05), so it can be said that H0 is accepted, which means that both models in this study have residuals and are normally distributed so that the normality assumption is met.

Autocorrelation Test

Referring to the table above, the results of the Fixed Effect Model (FEM) or the model selected as the best model, can be seen from the Durbin-Watson stat value of 1.660879 > -2 and 1.660879 < 2. While the results of the Random Effect Model (REM) have a Durbin-Watson stat value of 1.238734 > -2 and 1.238734 < 2. So that both values can be concluded that there is no autocorrelation problem or this study is free from autocorrelation problems.

Table 3. Autocorrelation Test Results

	Durbin-Watson stat
FEM	1.660879
BRAKE	1.238734

Source: Eviews, 2024

Panel Data Regression Analysis

In panel data regression analysis, it is important to determine the appropriate model using panel data. This testing process involves three main stages, namely the Chow Test, the Hausman Test, and the Lagrange Multiplier (LM) Test.

Table 4. Chow Test and Hausman Test ROE

	Prob.	Information	Conclusion
Chow Test	0.0000	< 0.05 H0 is rejected	FEM
Hausman test	0.0309	< 0.05 H0 is rejected	FEM

Source: Eviews, 2024

The table above shows that the value of both is smaller than alpha (0.05), with the results of the Chow and Hausman tests of 0.0000 and 0.0309, respectively. Therefore, H0 is rejected, so the Fixed Effect Model (FEM) is more appropriate to use compared to the Common Effect Model (CEM) and Random Effect Model (REM). Thus, it is concluded that FEM is the most appropriate model for panel data analysis. After the test was completed, this study decided to use FEM.

Table 5. Chow Test, Hausman Test and LM ROA Test

	Prob.	Information	Conclusion
Chow Test	0.0000	< 0.05 H0 is rejected	FEM
Hausman test	1.0000	> 0.05 H0 accepted	REM
LM Test	0.0000	<0.05 H0 is rejected	REM

Source: Eviews, 2024

Table 3 shows that the value of both is smaller than alpha (0.05), amounting to 0.0000, then the decision H0 is rejected, so that REM becomes a more appropriate model in estimating panel data compared to the CEM model. Based on the Chou, Housman and LM tests, it can be concluded that REM is a good model to use than CEM and FEM. Whatever is chosen, either REM or CEM, the test has been completed, thus this study uses REM.

Hypothesis Test Results

F Test (Simultaneous)

Table 6. F Test (Simultaneous)

	F-statistic	Prob (F-statistic)
FEM	14.72996	0.00000
BRAKE	2.247797	0.003410

Source: Eviews, 2024

Based on the results of panel data regression with the Fixed Effect Model (FEM), the F-statistic probability of 0.00 which is smaller than 0.05 indicates that this model is significant. This indicates that the variables Green Banking, Islamic Social Reporting and the Covid-19 Crisis have a significant effect on the dependent variable, namely Return on Equity (ROE) simultaneously or together. In addition, the results of panel data regression using the Random Effect Model (REM) also show an F-statistic probability of 0.003 which is smaller than 0.05 so that this indicates that the variables Green Banking, Islamic Social Reporting and the Covid-19 Crisis have a significant effect on the dependent variable, namely Return on Asset (ROA) simultaneously or together.

t-Test (Partial)

Table 7. ROE t-test (Partial)

Variables	Coefficient	Probability	Information
Green Banking	0.2845	0.2301	H1 Rejected
Islamic Social Reporting	5.1142	0.0354	H2 Accepted
Covid-19 Crisis	-0.5787	0.0193	H3 Accepted

Source: Eviews, 2024

a. The results of the Fixed Effect Model (FEM) panel data regression show a probability value of 0.2301 > compared to the alpha value (0.05). So the conclusion is that the green banking variable does not have a significant effect on banking profitability proxied by ROE.
b. The results of the Fixed Effect Model (FEM) panel data regression show a probability value of 0.0354 < compared to the alpha value (0.05). So the conclusion is that the Islamic Social Reporting variable has a positive and significant influence on banking profitability which is proxied by ROE.
c. The results of the Fixed Effect Model (FEM) panel data regression show a probability value of 0.0193 < compared to the alpha value (0.05). So the conclusion is that the Covid-19 crisis variable has a negative and significant effect on banking profitability as proxied by ROE.

Table 8. ROA t-test (Partial)

Variables	Coefficient	Probability	Information
Green Banking	-0.2669	0.1480	H1 Rejected
Islamic Social Reporting	4.6473	0.0091	H2 Accepted
Covid-19 Crisis	-0.0460	0.8112	H3 Rejected

Source: Eviews, 2024

a. The results of the Random Effect Model (REM) panel data regression show a probability value of 0.1480 > compared to the alpha value (0.05). So the conclusion is that the green banking variable does not have a significant effect on banking profitability proxied by ROA.
b. The results of the Random Effect Model (REM) panel data regression show a probability value of 0.0091 < compared to the alpha value (0.05). So the conclusion is that the Islamic Social Reporting variable has a positive and significant influence on banking profitability which is proxied by ROA.
c. The results of the Random Effect Model (REM) panel data regression show a probability value of 0.8112 > compared to the alpha value (0.05). So the conclusion is that the covid-19 crisis variable does not have a significant effect on banking profitability as proxied by ROA.

Coefficient of Determination (R2)

Table 9. Coefficient of Determination Test (R2)

	R-squared	Adjusted R-squared
FEM	0.721270	0.672303
BRAKE	0.743130	0.412521

Source: Eviews, 2024

The results of panel data regression using the Fixed Effect Model (FEM) method show an Adjusted R-square value of 0.67 or 67%. This means that the variables Green Banking, Islamic Social Reporting, and the Covid-19 Crisis together are able to explain 67% of the variation in the dependent variable, namely Return on Equity (ROE). The remaining 33% is explained by other factors not included in this research model.
Meanwhile, the results of panel data regression using the Random Effect Model (REM) method show an Adjusted R-square value of 0.41 or 41%. This means that the variables Green Banking, Islamic Social Reporting, and the Covid-19 Crisis together are able to explain 4% of the variation in the dependent variable, namely Return on Assets (ROA). The remaining 59% is explained by other factors not included in this research model.

MRA Regression Analysis

Based on the results of the tests that have been carried out to test the ability of the moderating variables in moderating the independent variables in this case green banking on financial performance (ROE and ROA) as dependent variables.The researcher has attached the results of the analysis that has been done. This study uses Bank Size as a moderating variable. To see the relationship of the moderating variables, the researcher presents it in the table below:

Table 10. Moderated Regression Analysis (MRA) Test

Model	Prob	Adj R-Square (Before Moderation)	Adj R-Square (After Moderation)	Information
Bank Size (Z) does not moderate Green Banking (X1) on ROE (Y)	0.0070	0.672303	0.617601	Moderating
Bank Size (Z) does not moderate Green Banking (X1) on ROA (Y)	0.0002	0.41252	0.139928	Moderating

Source: Eviews, 2024

Green banking and banking profitability, which is measured by Return on Equity (ROE) and Return in Asset (ROA), have a connection that can be moderated by the Bank Size variable, according to the MRA test findings in the above table. Thus, it may be said that H4 is acceptable and that Bank Size can be utilized as a moderating variable.

Discussion

The Influence of Green Banking on the Profitability of Islamic Commercial Banks

Based on the findings in panel data regression using fixed effect model and random effect model, it shows that green banking does not affect the profitability (ROE and ROA) of Islamic

commercial banks. This is evident from the probability values of 0.2301 and 0.1480 respectively > 0.05 so that H1 is rejected. These results indicate that the role of green banking has not significantly affected profit or profitability, because economic factors play a greater role. (Trisnawati et al., 2023) strengthens this finding, stating that the implementation of green banking is still less than optimal, because bank operations still depend on electricity and paper. In Indonesia, public institutions have not fully implemented green banking practices, and some banks do not have certification for green coins, indicating a less than optimal contribution to green banking. In line with research conducted by (Putri et al., 2022) (Al-Kubaisi & Khalaf, 2023) which shows that green banking implemented by banks will incur high costs ranging from operational costs to maintenance costs, which will ultimately reduce the bank's profit level.

The Influence of Islamic Social Responsibility on the Profitability of Islamic Commercial Banks

The results of panel data regression employing both random and fixed effect models demonstrate that the ISR variable significantly boosts the profitability of Islamic commercial banks. H2 is approved as a result of the corresponding probability values of 0.0091 <0.05 and 0.0354. This shows a positive correlation between the implementation of ISR principles and the achievement of profitable financial results, such as increased return on equity and return on assets (ROA and ROE) (Ben Abdallah & Bahloul, 2023) (Lambada et al., 2022). This result is in line with (Romadhoni & Rusmita, 2021) (Marzuki et al., 2023) who conducted research on banks, revealed that the results of ISR disclosure have a significant positive effect on the financial performance of Islamic banks. Thus, the implementation of ISR not only fulfills social responsibility, but also makes a significant contribution to banking profitability.

The influence of ISR on the profitability of Islamic banks in Indonesia can be seen through several mechanisms. The implementation of ISR can increase public trust and strengthen the positive image of the bank, which has an impact on increasing the number of customers and investors. In addition, ISR also contributes to increasing the operational efficiency of banks through compliance with sharia principles, which can ultimately reduce operational costs and increase profits (Ben Abdallah & Bahloul, 2023). Thus, good implementation of ISR can have a positive impact on the profitability of Islamic banks, especially in the long term (Khémiri & Alsulami, 2023).

The Impact of the Covid-19 Crisis on the Profitability of Islamic Commercial Banks

The findings in the data regression using the fixed effect model (FEM) show that the Covid-19 Crisis variable has a negative and significant effect on the profitability (ROE) of Islamic commercial banks. This is proven by 0.0193 <0.05. so that H3 is accepted. Pamuncak & Wijaya, 2022) examined the relationship between corporate profitability and the COVID-19 crisis, according to their analysis, COVID-19 had a negative impact on the profitability of Indonesian companies. The results were also expressed by (Syafitri & Khalifaturofi'ah, 2023) which shows that the impact of the COVID-19 crisis has had a negative impact on the condition of the financial sector in Indonesia. (Ramdani et al., 2023)said that during the Covid-19 outbreak, the national economic growth rate declined negatively, causing a decline in various sectors including Islamic banking.

However, the results of the study show that the Covid-19 Crisis has no effect on the profitability (ROA) of Islamic commercial banks in a negative direction. This result is in line with research conducted by (Mateev et al., 2024) which states that banks are more resilient during the global

financial crisis (Covid-19) and emphasizes the importance of bank regulatory reforms that increase efficiency in dealing with the negative consequences of the crisis (Covid-19). In addition, it can be explained that the profitability of the ROA of Islamic commercial banks during the observation period shows that the bank's ROA level tends to be small and stable in each period. A small but stable ROA indicates that Islamic banks tend to focus more on stability and risk management than pursuing maximum profits. Although the pandemic has disrupted many sectors, the unique structure of Islamic banking and policy support make its impact on ROA relatively small (Mateev et al., 2024)

The Influence of Green Banking on Banking Profitability with Bank Size as a Moderating Variable

Regression results Moderated Regression Analysis(MRA) shows that the Bank Size variable cannot moderate the relationship between green banking and the profitability of Islamic commercial banks. (Platonova et al., 2018) states that large banks have easier access to capital sources, which allows them to obtain more funding. Hörisch et al. (2015) adding that large banks have greater access to human resources that allow them to develop expertise in sustainability management systems. With more resources, large banks are better equipped to handle sustainability projects and support green financing. Large banks can also be more responsive to stakeholder demands, potentially improving their financial performance (Platonova et al., 2018). Therefore, bank size can moderate the relationship between green banking and profitability, where larger banks tend to gain greater financial benefits from implementing green banking compared to smaller banks (Rahma & Wedari, 2024).

5. Conclusion

This study uses bank size as a moderating variable to examine the effects of the Covid-19 Crisis, Islamic social reporting, and the deployment of green banking on profitability in Indonesian Islamic commercial banks. The green coin is used to measure green banking; the ISR index is used to measure Islamic social reporting; a dummy variable is used to bracket the Covid-19 Crisis and the natural logarithm of total assets is used to measure bank size. The study's findings show that Islamic commercial banks' profitability is significantly and favorably impacted by ISR. Profitability (ROE) is significantly impacted negatively by the Covid-19 Crisis, but not ROA. However, Islamic commercial banks' profitability is unaffected by green banking. The association between green banking and profitability may be moderated by the existence of bank size as a moderating variable. This suggests that bigger banks could be more successful in putting green banking policies into reality, which might boost earnings. These results highlight how crucial risk management, accountability, and openness are in a period of unpredictable economic times. In the context of Islamic banking, the impact of ISR procedures and reactions to financial crises like COVID-19 is quite significant. Islamic banks should see an improvement in their financial performance in the future by strengthening their ISR management and comprehending the implications of green banking.

References

Aerts, W., & Cormier, D. (2009). Media legitimacy and corporate environmental communication. *Accounting, Organizations and Society*, *34*(1), 1–27. https://doi.org/10.1016/j.aos.2008.02.005

Al-Homaidi, E. A., Tabash, M. I., & Ahmad, A. (2020). The profitability of islamic banks and voluntary disclosure: empirical insights from Yemen. *Cogent Economics and Finance*, *8*(1). https://doi.org/10.1080/23322039.2020.1778406

Al-Kubaisi, M. K., & Khalaf, B. A. (2023). Does Green Banking Affect Banks' Profitability? *Journal of Governance and Regulation*, *12*(4), 157–164. https://doi.org/10.22495/jgrv12i4art15

Almulhim, A. A., & Aljughaiman, A. A. (2023). Corporate Sustainability and Financial Performance: The Moderating Effect of CEO Characteristics. *Sustainability (Switzerland)*, *15*(16). https://doi.org/10.3390/su151612664

Asakdiyah, S. (2015). Manajemen Keuangan I: Alat Analisis dan Aplikasi. *Universitas Ahmad Dahlan*, 1–163.

Ben Abdallah, M., & Bahloul, S. (2023). Further evidence on the effect of financial performance and governance on the Islamic banks' disclosure. *Asian Journal of Accounting Research*, *8*(2), 110–121. https://doi.org/10.1108/AJAR-09-2021-0156

Bouteraa, M., Hisham, R. R. I. bin R., & Zainol, Z. (2020). Green Banking Practices From Islamic and Western Perspectives. *International Journal of Business, Economics and Law*, *21*(5), 1–11.

Buallay, A. (2019). Is sustainability reporting (ESG) associated with performance? Evidence from the European banking sector. *Management of Environmental Quality: An International Journal*, *30*(1), 98–115. https://doi.org/10.1108/MEQ-12-2017-0149

Cantia Lambada, O. M., Lindrianasari, L., Widiyanti, A., & Andi, K. (2022). The Effect of Bank Soundness Ratio on Profitability With Islamic Social Responsibility (ISR) Disclosure as Moderating Variable. *International Journal of Business and Economic Studies*, *4*(2), 86–101. https://doi.org/10.54821/uiecd.1124164

Freeman, R. E. E., & McVea, J. (2005). A Stakeholder Approach to Strategic Management. *SSRN Electronic Journal*, *January 2001*. https://doi.org/10.2139/ssrn.263511

Hair, J. F. (2006). *Multivariate Data Analysis* (5th ed.). Gramedia Pustaka Utama.

Hardiyanti, S. E., & Aziz, L. H. (2021). The case of COVID-19 impact on the level of non-performing loans of conventional commercial banks in Indonesia. *Banks and Bank Systems*, *16*(1), 62–68. https://doi.org/10.21511/bbs.16(1).2021.06

Hosen, M. N., Jie, F., Muhari, S., & Khairman, M. (2019). The Effect of Financial Ratios, Maqasid Sharia Index, and Index of Islamic Social Reporting to Profitability of Islamic Bank in Indonesia. *Al-Iqtishad: Jurnal Ilmu Ekonomi Syariah*, *11*(2), 201–222. https://doi.org/10.15408/aiq.v11i2.11588

Hossain, M. R., Rao, A., Sharma, G. D., Dev, D., & Kharbanda, A. (2024). Empowering energy transition: Green innovation, digital finance, and the path to sustainable prosperity through green finance initiatives. *Energy Economics*, *136*(June), 107736. https://doi.org/10.1016/j.eneco.2024.107736

Inegbedion, H. (2024). Green banking and profitability of banks in Nigeria: Opinions and attitudes. *Heliyon*, *10*(14), e34303. https://doi.org/10.1016/j.heliyon.2024.e34303

Jain, P., & Sharma, B. K. (2023). Impact of Green Banking Practices on Sustainable Environmental Performance and Profitability of Private Sector Banks. *International Journal of Social Ecology and Sustainable Development*, *14*(1), 1–19. https://doi.org/10.4018/IJSESD.330135

Jan, A., Marimuthu, M., Mohd, M. P. bin, & Isa, M. (2018). Sustainability Practices and Banks Financial Performance: A Conceptual Review from the Islamic Banking Industry in Malaysia. *International Journal of Business and Management*, *13*(11), 61.

https://doi.org/10.5539/ijbm.v13n11p61

Khan, U. I., Hameed, Z., Khan, U. S., & Khan, A. M. (2024). Green banking practices, bank reputation, and environmental awareness: evidence from Islamic banks in a developing economy. *Environment, Development and Sustainability*, *26*(6), 16073–16093. https://doi.org/10.1007/s10668-023-03288-9

Khémiri, W., & Alsulami, F. (2023). Corporate social responsibility disclosure and Islamic bank stability in GCC countries: Do governance practices matter? *Cogent Business and Management*, *10*(3). https://doi.org/10.1080/23311975.2023.2260559

Lavin, J. F., & Montecinos-Pearce, A. A. (2021). Esg disclosure in an emerging market: An empirical analysis of the influence of board characteristics and ownership structure. *Sustainability (Switzerland)*, *13*(19). https://doi.org/10.3390/su131910498

LPPI. (2021). *MENDONGKRAK KINERJA BANK SYARIAH MELALUI MERGER*. Lembaga Pengembangan Perbankan Indonesia. https://lppi.or.id/site/assets/files/1874/riset_-_mendongkrak_kinerja_bank_syariah_melalui_merger.pdf

Manoj, S., & Kumari, P. V. P. (2023). Green Banking Practices and Strategies for Sustainable. *Res Militaris*, *13*(1), 380–392.

Marzuki, M. M., Majid, W. Z. N. A., & Rosman, R. (2023). Corporate social responsibility and Islamic social finance impact on banking sustainability post-COVID-19 pandemic. *Heliyon*, *9*(10), e20501. https://doi.org/10.1016/j.heliyon.2023.e20501

Mateev, M., Sahyouni, A., & Al Masaeid, T. (2024). Bank performance before and during the COVID-19 crisis: Does efficiency play a role? In *Review of Managerial Science* (Vol. 18, Issue 1). Springer Berlin Heidelberg. https://doi.org/10.1007/s11846-022-00611-y

McKinsey. (2022). *Managing financed emissions: How banks can support the net-zero transition*. Financial Service Pratice.

Modigliani, F., & Miller, M. H. (1958). The Cost of Capital, Corporation Finance and the Theory of Investment. *The American Economic Review*, *48*(3), 261–297. http://www.jstor.org/stable/1809766

Mohammad Bintang Pamuncak, & Arland Pratama Wijaya. (2022). Investigating the Determinants of Shariah-Compliant Firms Profitability in Indonesia: Does COVID-19 Play an Essential Role? *Al-Muzara'Ah*, *2022*, 31–41. https://doi.org/10.29244/jam.specialissue2022.31-41

Mousa, et. al., G. A. (2015). Legitimacy Theory and Environmental Practices: Short Notes. *International Journal of Business and Statistical Analysis*, *2*(1), 41–53. https://doi.org/10.12785/ijbsa/020104

Mukhibad, H., Yudo Jayanto, P., Suryarini, T., & Bagas Hapsoro, B. (2022). Corporate governance and Islamic bank accountability based on disclosure—a study on Islamic banks in Indonesia. *Cogent Business and Management*, *9*(1). https://doi.org/10.1080/23311975.2022.2080151

Ningsih, N., Alimuddin, Nagu, N., & Madein, A. (2022). The Effect of Corporate Social Responsibility on Return on Assets, Return on Equity, and Net Profit Margin: Study of Food and Beverage Sub-Sector Companies Listed in the Indonesia Stock Exchange, 2016-2021. *European Journal of Business and Management Research*, *7*(6), 297–303. https://doi.org/10.24018/ejbmr.2022.7.6.1759

Nugroho, S. P., & Trinugroho, I. (2023). Restrukturisasi Pembiayaan Nasabah Terdampak Covid-19 Terhadap Kinerja Dan Risiko Pembiayaan Bank Pembiayaan Rakyat Syariah (Bprs). *NISBAH: Jurnal Perbankan Syariah*, *9*(1), 43–52. https://doi.org/10.30997/jn.v9i1.9513

Nur, P., Rahma, M., & Wedari, L. K. (2024). Green Banking and Bank Performance in ASEAN: The Moderating Role of Bank Size. *Journal of Logistics, Informatics and Service Science*, *11*(9), 162–181. https://doi.org/10.33168/jliss.2024.0911

Platonova, E., Asutay, M., Dixon, R., & Mohammad, S. (2018). The Impact of Corporate Social Responsibility Disclosure on Financial Performance: Evidence from the GCC Islamic Banking Sector. *Journal of Business Ethics*, *151*(2), 451–471. https://doi.org/10.1007/s10551-016-3229-0

Putri, P. I., Rahayu K, N., Rahmayani, D., & Siregar, M. E. S. (2022). The Effect of Green Banking and Financial Performance on Banking Profitability. *Quality - Access to Success*, *23*(191), 38–45. https://doi.org/10.47750/QAS/23.191.05

Rachmawati, A., & Praptiningsih. (2024). Unlocking Profitability Potential: Investigating the Impact of Social Responsibility, Financial Disclosure, and Good Governance in Islamic Banking in Indonesia. *KnE Social Sciences*, *2024*, 1–16. https://doi.org/10.18502/kss.v9i20.16466

Rahma, M. N. P., & Wedari, N. B. (2024). Green Banking and Bank Performance in ASEAN: The Moderating Role of Bank Size. *Journal of Logistics, Informatics and Service Science*, *11*(9), 162–181. https://doi.org/10.33168/jliss.2024.0911

Ramdani, R., Mawardi, I., & Sulaeman, S. (2023). Impact of Green Banking Implementation, Financial Performance, and Covid-19 Crisis on Islamic Bank Profitability in Indonesia. *International Journal of Islamic Economics and Finance (IJIEF)*, *6*(2), 225–246. https://doi.org/10.18196/ijief.v6i2.16802

Ratnasari, T., Surwanti, A., & Pribadi, F. (2021). Implementation of green banking and financial performance on commercial banks in indonesia. *International Symposia in Economic Theory and Econometrics*, *28*(March 2021), 323–336. https://doi.org/10.1108/S1571-038620210000028018

Ridwan, R., & Mayapada, A. G. (2022). Does sharia governance influence corporate social responsibility disclosure in Indonesia Islamic banks? *Journal of Sustainable Finance and Investment*, *12*(2), 299–318. https://doi.org/10.1080/20430795.2020.1749819

Romadhoni, M., & Rusmita, S. A. (2021). Dampak Pengungkapan Islamic Corporate Social Responsibility Tiap Dimensi Individu Terhadap Profitabilitas. *Jurnal Ekonomi Syariah Teori Dan Terapan*, *8*(5), 641. https://doi.org/10.20473/vol8iss20215pp641-654

Sadewo, D., & Saputra, D. (2024). The Effect of Return on Asset (RoA), Earning Management and Audit Committee on Audit Delay with Managerial Ownership as a Moderating Variable. *International Journal of Science and Society*, *6*(1), 10–23. https://doi.org/10.54783/ijsoc.v6i1.991

Sharmeen, K., & Yeaman, A. M. (2020). Benefits That Islamic and Conventional Banks Can Attain By Implementing Green Banking. *Journal of Islamic Monetary Economics and Finance*, *6*(4), 833–860. https://doi.org/10.21098/jimf.v6i4.1134

Siswanto, E. (2019). manajemen Keuangan Dasar. In *Sustainability (Switzerland)* (Vol. 11, Issue 1). http://scioteca.caf.com/bitstream/handle/123456789/1091/RED2017-Eng-8ene.pdf?sequence=12&isAllowed=y%0Ahttp://dx.doi.org/10.1016/j.regsciurbeco.2008.06.005%0Ahttps://www.researchgate.net/publication/305320484_SISTEM_PEMBETUNGAN_TERPUSAT_STRATEGI_MELESTARI

Syafitri, E. D., & Khalifaturofi'ah, S. O. (2023). Dampak pandemi Covid-19 terhadap kinerja keuangan perusahaan manufaktur yang terdaftar di BEI. *Journal of Business & Banking*, *13*(1), 33. https://doi.org/10.14414/jbb.v13i1.3734

Trisnawati, N. L. D. E., Wahyuni, D. K. I., & Sarbaeni. (2023). Analysis of the Impact of Green

Banking, Inflation Rates, and Bad Loans on the Profit Growth of Banking Companies Listed on the IDX. *International Journal of Economics Development Research*, *4*(3), 2023–1598. www.ojk.go.id

Veronika Saputri, D., Iqbal Fasa, M., & . S. (2024). Analysis of Green Banking Implementation in the Banking Industry in Indonesia (2018-2022 Period). *KnE Social Sciences*, *2024*, 448–455. https://doi.org/10.18502/kss.v9i16.16263

Weber, O. (2016). the Impact of Green Banking Guidelines on the Performance of Banks. *Centre for International Governance Innovation*, *79*(2), 79–86.

Wongso, B. C., Helsa, S., & Panggabean, R. R. (2023). Examining the Implementation of Green Banking and Intellectual Capital on Bank's Profitability in Indonesia. *E3S Web of Conferences*, *426*. https://doi.org/10.1051/e3sconf/202342602120

Wrespatiningsih, H. M., & Mahyuni, L. P. (2022). Praktik Green Banking dalam Memediasi Pengaruh Corporate Social Responsibility terhadap Kinerja Perusahaan Perbankan. *JABI (Jurnal Akuntansi Berkelanjutan Indonesia)*, *5*(1), 29–44. https://doi.org/10.32493/jabi.v1i1.y2022.p29-44