

THE INFLUENCE OF GREEN BANKING DISCLOSURE INDEX, PROFITABILITY, AND OPERATIONAL COST EFFICIENCY ON COMPANY VALUE IN INDONESIAN ISLAMIC COMMERCIAL BANKS FOR THE 2022-2024 PERIOD

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ABSTRACT

This study aims to analyze the influence of green banking disclosure, operational efficiency, and profitability on firm value in Islamic commercial banks in Indonesia during the period 2022–2024. This study was conducted to determine the extent to which sustainable banking practices, as reflected in the level of green banking disclosure, contribute to increasing firm value through increased efficiency and profitability. Secondary data were obtained from the annual reports of three Islamic commercial banks: Bank Syariah Indonesia, Bank Tabungan Pensiunan Nasional Syariah, and Bank Panin Dubai Syariah. The analysis was conducted using panel data regression with the assistance of Stata 17 software. The results show that green banking disclosure has a positive effect on firm value, meaning that the better the sustainability and environmental disclosure, the higher the market valuation of the company. Operational efficiency, measured by the operating expense ratio, has a negative effect on firm value, while profitability, measured by return on equity, has a positive and significant effect. These findings emphasize the importance of integrating sustainability performance and financial efficiency in increasing the long-term value of Islamic banks.



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INTRODUCTION

The increasingly competitive global economy has pushed the financial system to adapt to the demands of sustainability and social responsibility. In this context, Islamic banking has emerged as an alternative financial system that emphasizes ethical values, fairness, and balance. Sharia banks, not only focus on financial profit, but also uphold sharia principles, which prohibit riba (usury), maisir (gambling), gharar (unlawful), and other unjust activities. These principles are realized through partnership-based contracts such as mudharabah and musyarakah, which emphasize fairness and profit-sharing in every transaction. The presence of Islamic banks in Indonesia is increasingly important as public awareness of a sustainable financial system aligned with Islamic values grows.

Islamic banking in Indonesia has shown positive growth over the past decade. According to data from the Financial Services Authority (2024), the total assets of Islamic Commercial Banks (BUS) reached IDR 892.16

trillion, a significant increase compared to previous years. This growth is supported by government policies and regulations, such as Law No. 21 of 2008 concerning Islamic Banking. However, amidst these asset increases, a significant challenge remains: how to maintain and enhance company value to remain attractive to investors in the highly dynamic digital economy. Company value reflects market perception of a company's prospects, reputation, and performance. According to Jaya (2020), increasing company value is in line with improved shareholder welfare. One common ratio for measuring company value is Price to Book Value (PBV), which is the comparison between the stock market price and the book value per share. This ratio indicates the extent to which the market values a company relative to its accounting value.

(Haznun & Akbar, 2022) emphasize that PBV has the advantage of being a stable ratio because it is based on accountable book value and can be used across industry sectors. However, although the PBV ratio provides an overview of company value, the factors influencing it in the Islamic banking sector are still diverse and complex. One factor that is gaining increasing attention is green banking disclosure, or the openness of information regarding environmentally friendly banking practices. The implementation of green banking reflects the social and environmental responsibility of financial institutions and supports the achievement of the Sustainable Development Goals (SDGs). According to Millenia et al. (2024), the Financial Services Authority (OJK) has encouraged the implementation of sustainable financing principles by adjusting Risk-Weighted Assets (RWA) regulations to encourage banks to channel funds to environmentally friendly sectors. However, the reality on the ground shows that implementation of this policy remains limited because reporting is still voluntary and lacks strict sanctions (Diah et al., 2019).

Green banking disclosure plays a crucial role as a corporate communication strategy that can boost investor confidence. (Bose et al., 2018) states that the higher the level of green banking disclosure, the greater the market's confidence in the bank's sustainability commitment. In addition to environmental aspects, operational cost efficiency is also a crucial factor in determining a company's value. The Operating Expense to Operating Income (BOPO) ratio reflects a bank's operational efficiency. (Ramadhani, 2018) explains that a low BOPO indicates high efficiency and the potential for increased profits, while a high ratio reflects high costs and the risk of declining profitability. In the context of Islamic banks, cost efficiency is one measure of management's ability to optimally manage funds without sacrificing service quality and sharia principles.

In addition to operational efficiency, profitability is another key indicator of a bank's ability to generate profits. The Return on Equity (ROE) ratio is used to assess the extent to which shareholder capital generates net income. Adolph (2016) and Agustiani (2016) state that a higher ROE increases investor interest because it is considered a reflection of good financial performance. However, in practice, previous research on the relationship between profitability and firm value remains inconsistent. Hellen et al. (2019) found that profitability does not always significantly influence the firm value of Islamic banks, while research by Hanafia and Karim (2020) showed a strong positive relationship between the two. These discrepancies in research findings suggest that the relationship between profitability, efficiency, and firm value is not linear and may be influenced by other factors such as governance and financing policies.

From a green banking perspective, research by Bose et al. (2018) demonstrated that disclosure of green banking practices has a positive impact on firm value. Conversely, research by Xaviera and Rahman (2023) revealed that green banking implementation in Indonesia remains low, with green financing realization below 30% of total sustainable financing. This suggests that although the concept of green banking is widely recognized, its practice has not yet become a top priority in Islamic banks' business strategies. Limited human resources, high implementation costs, and the lack of integration of sustainability strategies into management policies are key obstacles. In fact, green banking disclosure has the potential to increase company value through improved reputation, investor confidence, and long-term cost efficiency.

The inconsistency of previous research findings and the low level of green banking implementation offer significant research opportunities. This study aims to address this gap by analyzing the influence of green banking disclosure, operational cost efficiency, and profitability on firm value in Islamic commercial banks in Indonesia for the 2022–2024 period. This study draws on Haznun and Akbar (2022), Pratiwi et al. (2023), and Bose et al. (2018), but offers a more comprehensive approach by simultaneously combining all three variables. Furthermore, this study utilizes Stata 17 software for data processing, a software rarely used in Islamic banking studies. It is hoped

that this research will provide theoretical contributions to the development of green banking literature and practical contributions to the Islamic banking industry in strengthening firm value through efficiency and sustainability.

RESEARCH METHOD

This study uses an associative quantitative approach to examine the influence of the Green Banking Disclosure Index, Operational Cost Efficiency, and Profitability on Firm Value at Islamic Commercial Banks in Indonesia for the period 2022–2024. The data used is secondary panel data, a combination of time series and cross-sectional data, obtained from annual reports, sustainability reports, and quarterly financial reports published by each Islamic Commercial Bank through their official websites and the Indonesia Stock Exchange.

The population in this study is all Islamic banking companies listed on the Indonesia Stock Exchange. The sample was determined using a purposive sampling method based on the following criteria:

Table 1. Sample Selection Criteria

No.	Description	Amount Bank
1	Number of Islamic Commercial Banks registered with the OJK and BEI	4
2	Islamic Commercial Banks that publish sustainability reports and annual reports consecutively for the period 2022–2024	4
3	Islamic Commercial Banks that publish quarterly financial reports and provide the required data regarding research variables for the 2022–2024 period	4
4	Banks that do not have missing data or abnormal data (extreme outliers) on the main variables studied, so that the analysis results are more accurate and representative.	3
Number of Islamic Commercial Banks that meet the criteria		3
Research period		3x4 =12
Amount of data observed		36

Based on these criteria, the four Islamic commercial banks listed on the Indonesia Stock Exchange in 2024 were Bank Syariah Indonesia, Bank Panin Dubai Syariah, Bank Tabungan Pensiunan Nasional Syariah, and PT Bank Aladin Syariah Tbk. All banks published annual reports, sustainability reports, and quarterly financial reports during the study period. However, after checking for completeness and consistency of data, only three banks had no missing data and no extreme outliers: Bank Syariah Indonesia, Bank Panin Dubai Syariah, and Bank Tabungan Pensiunan Nasional Syariah. Therefore, these three banks were selected as the sample. Thus, the total observations in the study amounted to 36 data points (3 banks × 3 years × 4 quarters).

The research variables consisted of three independent variables: Green Banking Disclosure Index (GBDI), Operational Cost Efficiency (BOPO), and Profitability (ROE), and one dependent variable: Firm Value, proxied by Price to Book Value (PBV). Data analysis was performed using panel data regression with the aid of Stata 17 software. The analysis steps included: descriptive statistics, panel regression model selection using the Chow and Hausman tests, classical assumption testing (normality, multicollinearity, heteroscedasticity, and autocorrelation), and hypothesis testing using the t-test and coefficient of determination (R^2).

The model used in this study was a multiple linear regression model, as follows:

$$PBV = \beta_0 + \beta_1 GBDi + \beta_2 BOPOi + \beta_3 ROEi + \epsilon_i$$

Where:

- PBV = Company Value
- GBD = Green Banking Disclosure
- BOPO = Operational Cost Efficiency (BOPO)
- ROE = Profitability (ROE)
- E = Error Term

RESULTS

This section explains the research results and provides a comprehensive discussion. The results are presented in the form of equations, tables, and descriptions for easy understanding by the reader.

1. Descriptive Statistical Analysis

Variabel	Obs	Mean	Std. dev.	Min	Max
Grand Banking Disclosure (X_1)	36	1.726694	0.853676	0.675	3.386
Profitabilitas (ROE) (X_2)	36	0.143158	0.1052	-0.3176	0.2612
Efisiensi Biaya Operasional (X_3)	36	0.738011	0.092275	0.5754	0.9806

The descriptive statistics output in Table 4.1 shows a total of 36 observations (N) from three samples of Islamic Commercial Banks from 2022 to 2024.

- The average Green Banking Disclosure Index for Islamic Commercial Banks is 0.5855556. The minimum and maximum Green Banking Disclosure values for Islamic Commercial Banks are 0.23 and 0.81, respectively. The standard deviation of Green Banking Disclosure is 0.1862012.
- The average Operational Cost Efficiency value for Islamic Commercial Banks is 0.7380111. The minimum and maximum Green Banking Disclosure values for Islamic Commercial Banks are 0.5754 and 0.9806, respectively. The standard deviation of Green Banking Disclosure is 0.10522002.
- The average value of Sharia Commercial Bank Profitability is 0.1431583 - The minimum and maximum values of Sharia Commercial Bank Profitability are 0.3176 and 0.2612 and the standard deviation of Sharia Commercial Bank is 0.1052002

2. Panel Data Model Selection

• Chow Test

The Chow Test is used to determine which model is more appropriate between the Common Effect Model and the Fixed Effect Model. Model selection is based on the probability value (p-value) of the Cross-Section F. If the p-value is greater than 0.05, the Common Effect Model is the most appropriate model. However, if the p-value is less than 0.05, the Fixed Effect Model is the most appropriate model.

$$\begin{array}{l} F (3, 28) = 5.76 \\ \hline \text{Prob} > F = 0.0034 \end{array}$$

In the chow table test above, the p-value is less than 0.05, so the model chosen for the chow test is the Fixed Effect Model, and continued with the Hausman test.

• Hausman Test

The Hausman test is used to determine which model is more appropriate between the Fixed Effects Model and the Random Effects Model. The choice of this model is based on the probability (p) value of the Random Cross-Section. If the p-value is greater than 0.05, then the Random Effects Model is used. Conversely, if the p-value is less than 0.05, then the Fixed Effects Model is chosen.

$$\begin{array}{l} \text{chi2}(4) = (b-B)'[(V_b-V_B)^{-1}](b-B) \\ \hline \hline = 17.04 \\ \hline \text{Prob} > \text{chi2} = 0.0019 \end{array}$$

In the Hausman table test above, the p-value is less than 0.05, so the model chosen for the Chow test is the Fixed Effect Model. Therefore, the model used in this study is the Fixed Effect Model.

3. Classical Assumption Test

The classical assumption test was conducted to ensure the regression model met the BLUE (Best Linear Unbiased Estimator) criteria. The model met all classical assumptions, making it suitable for use in regression analysis. The test results are shown in Table 4.

Jenis Uji	Metode	Hasil	Kesimpulan
Normality Test	Shapiro-Wilk	0.4310	Data is normally distributed
Multicollinearity Test	VIF	1.69	No multicollinearity
Heteroscedasticity Test	Breusch-Pagan	0.3473	No heteroscedasticity
Autocorrelation Test	Wooldridge	0.2174	No autocorrelation

4. Regression Model Results

Variabel	Koefisien	Std. Error	t-Statistik	Prob.
Grand Banking Disclosure (X ₁)	2.026476	0.6283099	3.23	0.003
Profitabilitas (X ₂)	0.8019623	0.9140074	0.86	0.387
Efisiensi Biaya Operasional (X ₃)	-6.23276	1.250177	3.03	0.005
Konstanta (C)	6.119328	1.282742	4.77	0.011

The relationship and influence of the independent variables on the dependent variable can be seen through the regression equation.

Based on the results of the t-test table, the multiple regression equation obtained is as follows:

$$PBVi = 6.119328 + 2.026476 + 0.8019623 + -6.23276 + \epsilon$$

5. Hypothesis Testing

a. t-Test (Partial)

- The table shows that the Green Banking Disclosure variable has a coefficient value of 2.026476 with a probability value (p-value) of 0.003. This probability value is less than the 0.05 significance level, thus concluding that Green Banking Disclosure has a positive and significant effect on Firm Value in Islamic Commercial Banks. This indicates that the higher the disclosure of environmentally friendly banking activities, the higher the company's value in the eyes of stakeholders.
- The Profitability variable shows a coefficient value of 0.8019623 with a probability value of 0.387, which is below the 0.05 significance level. This indicates that Profitability has no effect on Firm Value in Islamic Commercial Banks. This indicates that Profitability has not been able to directly contribute to increasing firm value.
- The Operational Cost Efficiency variable has a coefficient of -6.23276 with a probability value of 0.005, which means the probability value is smaller than the significance level of 0.05. Thus, it can be concluded that Operational Cost Efficiency has a negative and significant effect on Company Value in Islamic Commercial Banks. This condition indicates that the level of efficiency in managing operational costs has not been able to provide a direct contribution to increasing company value.

b. Coefficient of Determination (R²) Test

$$\text{Adj R-Squared} = 0.6572$$

The coefficient of determination (R²) is a tool to determine the model's capacity to explain the dependent variable. In the table above, the Adj R-Squared value is 0.6572, or 65.72%. This coefficient of determination indicates that the independent variables, consisting of Green Banking Disclosure (X₁), Profitability (X₂), and Operational Cost Efficiency (X₃), have a 65.72% effect on the Firm Value (Y)

variable at Indonesian Sharia Commercial Banks. The remaining 34.28% is explained by other variables not included in this research model.

The discussion in the article aims to: (1) answer research issues; (2) show how the findings were obtained; (3) interpret the findings; (4) relate the findings of the research to an established knowledge structure; and (5) bring up new theories or modifications to existing theories.

In answering research problems, the results of the study should be concluded explicitly. The interpretation of the findings is done using logic and theories. Findings in the form of reality in the field are integrated / associated with the results of the study.

This section should give meaning to the results obtained, show the findings that have been identified, show the results of other studies that have handled similar problems. Compare your results with other studies and highlight differences and novelty in your own results. In this chapter, results should be interpreted comprehensively, analyzed and new knowledge synthesized from analysis. Discussion / analysis is relevant to research results.

DISCUSSION

1. The Effect of Green Banking Disclosure on Firm Value

Based on the regression test results, the coefficient for the Green Banking Disclosure variable is 2.026476 and the probability value is 0.003. Therefore, the null hypothesis (H_{01}) is rejected and the alternative hypothesis (H_{a1}) is accepted. This means that Green Banking Disclosure has a partial, significant effect on firm value. This finding aligns with previous studies by (Murwaningsari & Rachmawati, 2023) and (Riskadani Dea Claduri, Sri Rahayu, 2025), which also concluded that disclosure of green banking activities has a positive effect on firm value.

One of the main reasons for this finding is increased public trust in companies that demonstrate environmental concern. A company's commitment to sustainability is a positive indicator that contributes to improved firm performance. Furthermore, disclosure of information regarding green banking practices can reduce information asymmetry in the market, providing investors with better opportunities to access additional information. This information helps investors more accurately assess a company's financial condition and risks, which can ultimately impact stock prices and increase company value (Bassetti et al., 2021).

Information regarding green banking practices is viewed positively by the public because it reflects the bank's concern for the social environment. When banks actively communicate green banking activities, this can strengthen the trust of the public, customers, and investors. This trust has the potential to increase the value of the banking company. In this regard, disclosing green banking information aligns with legitimacy theory, which explains that a company will gain public legitimacy if its activities are perceived as compliant with prevailing social values, thereby enhancing positive perceptions among capital owners or investors.

2. The Effect of Profitability on Firm Value

Based on the results of the regression test, the profitability coefficient was 0.8019623 and the probability value was 0.0387. Therefore, the null hypothesis (H_{01}) was accepted and hypothesis (H_{a2}) was rejected. This means that profitability has no partial effect on firm value.

This finding indicates that increased profitability, reflected in ROE, has not significantly contributed to increasing firm value. In this context, a high net return on equity ratio does not necessarily increase stock prices, which are the main indicators of firm value. In theory, firm value is closely related to stock prices, where increased profits can drive share prices upwards and ultimately increase firm value. As explained in research by (Budiarta & Dewi, 2023), high profitability reflects a company's ability to generate profits from its business activities and has the potential to attract investors because it is also linked to the company's ability to distribute dividends. Profitability is also considered an important indicator for projecting future company performance.

However, the results of this study indicate that this theory does not fully apply in all cases. ROE does not significantly impact firm value, suggesting that investors may consider other aspects such as growth prospects, operational efficiency, and financial risk when assessing a company. This also reinforces the finding that profitability ratios alone are insufficient as a primary reference for investment decisions. This finding aligns with research (Jonnus & Marsudi, 2021) that found ROE has no impact on firm value. This explains that investors evaluate a company's value not solely based on the rate of return on capital but also consider the company's potential to

attract customers and its growth prospects. Therefore, changes in the ROE ratio cannot significantly impact firm value.

3. The Effect of Operational Cost Efficiency on Company Value

The regression results show that the Operational Cost Efficiency variable has a coefficient of -6.23276 with a probability value of 0.005. Therefore, the null hypothesis (H_{01}) is rejected and the alternative hypothesis (H_{a1}) is accepted. This means that, partially, Operational Cost Efficiency has a significant negative effect on company value.

BOPO is an indicator that measures a bank's operational efficiency, specifically in using costs to generate revenue. When the BOPO ratio increases, it reflects that operational costs are higher than revenue generated, indicating low efficiency. Conversely, a lower BOPO ratio indicates increased operational efficiency, potentially improving financial performance and company value. A low BOPO ratio indicates management's ability to effectively manage operating expenses. This will impact profits and send a positive signal to investors regarding the company's prospects. Consequently, market perception of the company improves, which is then reflected in increased company value.

This finding aligns with studies by Utami (2021) and Agustiani (2016), which showed that BOPO has a negative and significant impact on firm value. The study explained that the more efficient a bank's operations—as reflected in a lower BOPO—the greater investor confidence in the company's business continuity, ultimately driving increased firm value.

CONCLUSION

Based on the results of the discussion and testing conducted, it can be concluded that Green Banking Disclosure (GBD) has a positive and significant effect on firm value (PBV) in Islamic Commercial Banks in Indonesia. This indicates that disclosure of green banking practices can improve corporate image and investor confidence, in line with signaling theory. Profitability (ROE) does not have a significant effect on firm value. This finding indicates that investors may consider factors other than net income, such as financing stability or environmental risks. Operating Cost Efficiency (BOPO) has a negative and significant effect on firm value. A high BOPO ratio (low efficiency) decreases PBV, while good operational efficiency can increase firm value.

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