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THE IMPACT OF BANKING DIGITALIZATION ON GREEN ACCOUNTING IMPLEMENTATION AND FINANCIAL PERFORMANCE OF BANKS LISTED IN THE SRI-KEHATI INDEX (2021–2024)

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ABSTRACT

The advancement of banking digitalization has reshaped how financial institutions deliver services, allowing greater efficiency and accessibility for customers. However, its impact on environmental commitment (green accounting) and financial performance remains a subject of debate. Against this backdrop, this study explores the relationship between banking digitalization, green accounting practices, and financial performance as measured by Return on Assets (ROA) among banks included in the SRI-KEHATI Index during 2021–2024. The study population consists of banks consistently listed in this sustainability index, with a total of 16 observations over four years. In this study, ROA takes center stage as the dependent variable, while banking digitalization drives the analysis and green accounting bridges the connection between them. A quantitative framework is employed, using path analysis to assess both direct and indirect relationships among the research variables. Empirical evidence suggests that increasing levels of banking digitalization are linked to lower allocations of environmental costs, suggesting a weakening in green accounting intensity. Furthermore, green accounting is also found to have a negative influence on ROA, indicating that environmental costs still burden short-term profitability. Overall, digitalization does not directly affect ROA but has an indirect effect through green accounting. These findings reveal how banks must walk a tightrope between embracing digital efficiency and honoring their promises to sustainability.

Keywords: ***banking digitalization, green accounting, financial performance, ROA, sustainability.***

INTRODUCTION

Since the global health crisis caused by COVID-19, the Indonesian banking sector has been experiencing accelerated adoption of digital technology. This acceleration is driven by OJK policies through the 2020–2025 Banking Digital Transformation Blueprint and the Indonesian Payment System Blueprint (2025). Digital services such as mobile banking, e-branch, open APIs, and electronic payment systems are being developed to improve operational efficiency, service quality, and expand financial inclusion. By 2023, the value of digital banking transactions is estimated to reach IDR 58,478 trillion, with an annual growth rate of 13.48 % (Bank Indonesia, 2023).

Digitalization not only improves customer service but also supports environmental conservation. This is evident in the reduction of paper use through paperless banking, increased energy efficiency with *cloud computing* , and reduced carbon emissions due to reduced activity at physical branch offices (Febriani & Zultilisna, 2023). The digital ecosystem also encourages the implementation of *green accounting* , namely the integration of environmental costs and benefits, as

well as environmentally friendly investments, into financial reporting to increase corporate transparency and ecological accountability (Pratiwi & Subroto, 2022).

The SRI-KEHATI Index serves as a benchmark for sustainable investment in Indonesia, featuring selected companies based on *Sustainable and Responsible Investment* (SRI) principles (KEHATI Foundation, 2021). This index applies strict selection criteria related to ESG (*Environmental, Social, Governance*) practices, including carbon emission management, green financing, and transparency of environmental reporting (Prasetyo, 2021). For SRI-KEHATI banks, digitalization offers a strategic opportunity to enhance green accounting through *real-time reporting* and integrated ESG dashboards, enhancing transparency (Nasution, 2021). Implementing these practices has the potential to improve banks' financial performance, particularly as reflected in Return on Assets (ROA), given that investor preference is increasingly shifting toward companies demonstrating strong ESG performance (Hakimi et al., 2023).

But on the other hand , the fact in the field This indicates a disparity in the level of implementation between banks . Budget allocation for environmental programs (CSR) among SRI-KEHATI banks tends to stagnate and even decline to below 2% of total net profit (Setiawan et al., 2023), even though digital-based operational efficiency should create greater fiscal capacity for environmental investment. Bank Rakyat Indonesia (BRI) has proven successful in allocating this digital efficiency to financing environmental programs, while other banking institutions still tend to prioritize profit maximization and position green accounting as a cost center (Lestari & Gunawan, 2022). This dynamic raises critical questions about the effectiveness of digitalization in accelerating the implementation of *green accounting.* real *accounting in banking operations.*

The results of the study of previous research show that there are variations in empirical findings that are heterogeneous. Research conducted by Siahaan & Ginting (2022) and Siswanti et al. (2024) identified a positive influence of digitalization on *Return on Assets* (ROA). However, they did not explore the role of *green accounting* as a potential mediating variable to explain the heterogeneity of these findings.

In contrast, research by Wijaya (2023) and Firmansyah et al. (2024) shows that the direct effect of digitalization on ROA is relatively insignificant. However, these studies still emphasize the direct impact pathway and fail to consider the possibility that operational efficiencies resulting from digitalization are diverted to other strategic interests, such as controlling environmental costs.

Regarding green accounting, research shows that accounting practices focused on environmental aspects have been shown to contribute significantly to increased corporate profitability, indicating that environmentally conscious financial practices contribute to increased profitability (Kholmi & Nafiza, 2022; Budiono & Dura, 2021), although discussions regarding the function of digitalization as a reinforcing variable are still relatively limited. However , findings by Mutiara et al. (2024), Indriastuti & Chariri (2021), and Setiawan et al. (2023) indicate that a significant increase in the allocation of environmental costs has the potential to depress short-term profitability, thus reflecting a strategic trade- *off* that *requires* management attention.

This study examines the mediation model by positioning digitalization as the independent variable, *green accounting* as the mediating variable, and financial performance proxied by *Return on Assets* (ROA) in banks included in the SRI-KEHATI index during the 2021–2024 period as the dependent variable. The results of this study are expected to provide strategic recommendations for regulatory authorities, particularly the Financial Services Authority and Bank Indonesia, in designing sustainability-oriented digital transformation policies, as well as providing operational guidance for banking management in optimizing the implementation of *Environmental, Social, and Governance* (ESG) to increase competitiveness in the capital market.

This study limits the measurement of green accounting to the environmental cost aspect as a representation of financial commitment, so it does not reflect the entire banking sustainability

practice. Thus, this study fills the literature gap by examining the mediating role of green accounting in the relationship between digitalization and financial performance at SRI-KEHATI Bank for the 2021–2024 period.

Legitimacy *Theory*

Legitimacy theory (Deegan, 2002) recognizes that organizations in society require a " *social license* " to operate, namely social acceptance from their communities and stakeholders. In sustainable banking, allocating resources to environmental programs is an important social signal, even though in the short term it may reduce the company's profitability.

Resource -*Based View* (*RBV*)

In the RBV perspective, organizations build competitive advantages that are obtained through the utilization of internal resources that have strategic value, are rare, and are not easily replicated (Barney, 1991). In the banking sector, digital technology infrastructure represents a strategic asset that can generate operational efficiencies and facilitate sustainability initiatives.

Stakeholder *Theory*

This theory emphasizes that the success of a corporate organization depends heavily on its ability to manage and balance the interests of various stakeholders, including investors, customers, regulators, and society at large (Freeman, 1984) . The implementation of green accounting reflects a form of accountability of banking institutions to stakeholders who pay attention to Environmental, Social, and Governance (ESG) aspects (Lestari & Gunawan, 2022). However, allocating resources for environmental sustainability commitments presents a strategic dilemma, as benefits such as increased customer loyalty and easier access to funding are generally only felt in the long term, while the resulting costs have the potential to depress short-term profitability (Mutiara et al., 2024; Indriastuti & Chariri, 2021).

Research Variable Concept

Banking Digitalization

Banking digitalization refers to the fundamental transformation of business models from a conventional paradigm to a digital ecosystem that utilizes information technology to optimize customer experience, operational efficiency, and innovation in product and service development (OJK, 2021). In the context of this research, the level of digitalization is operationalized through the Digital Banking Transactions (TDP) per Total Assets indicator, which represents the ratio of digital transaction value to a banking institution's total assets. Manifestations of digital service adoption include the utilization of mobile banking platforms, internet banking, and the Laku Pandai agent network as an alternative distribution channel (Siahaan & Ginting, 2022).

Green Accounting

The environmental accounting approach (green accounting) incorporates ecological costs and benefits as an integral part of a company's financial reporting system. Haryanto (2021) explains that this information is crucial for stakeholders to evaluate a company's overall contribution to environmental sustainability. This study operationalizes this concept by measuring the allocation of environmental development costs and CSR programs as indicators of banks' financial commitment to environmental responsibility.

Banking Financial Performance

Financial performance represents the financial condition of a banking institution over a specific period, encompassing the dimensions of fund mobilization (funding) and credit intermediation (lending). In this study, banking financial performance is proxied using the Return on Assets (ROA) indicator. According to Hery (2020), ROA is a profitability indicator that describes a company's ability to generate net profit through the utilization of its total assets. ROA was chosen as a proxy for financial performance because it is considered to reflect banking

operational efficiency after the implementation of digitalization more comprehensively than other profitability indicators, as evidenced by previous research conducted by Febriani and Zultilisna (2023).

Hypothesis Development

The Impact of Bank Digitalization on the Implementation of Green Accounting in Banks SRI-KEHATI Index

Banking digitalization drives operational efficiency through the implementation of paperless systems and reduced reliance on physical branch offices, potentially providing fiscal space for the development of environmental initiatives (OJK, 2021; Siswanti et al., 2024). However, the resulting efficiencies are not always allocated to environmental commitments, as some banking institutions tend to prioritize dividend distribution and profit optimization (Lestari & Gunawan, 2022). Therefore, the impact of digitalization on green accounting is contextual and dependent on management's strategic choices.

The Impact of Green Accounting Implementation on Bank Financial Performance in the SRI-KEHATI Index

The implementation of green accounting through significant allocation of environmental costs has the potential to increase the social legitimacy of banking and attract sustainable investment interest (Pratiwi & Subroto, 2022). Conversely, a significant increase in environmental costs has the potential to depress accounting profitability in the short term, given that the reduction in net income is not offset by direct revenue compensation (Mutiara et al., 2024; Indriastuti & Chariri, 2021).

This situation reflects a strategic trade-off between achieving long-term legitimacy and short-term profitability. Although green accounting has the potential to increase *Return on Assets* (ROA) in the long term through reputational strengthening and easier access to capital, the short-term impact tends to be negative or statistically insignificant (Setiawan et al., 2023). Therefore, the effect of green accounting on financial performance (ROA) is temporary and highly dependent on the time period used in the analysis.

The Impact of Bank Digitalization on Bank Financial Performance in the SRI-KEHATI Index

Digital transformation at SRI-KEHATI Bank has the potential to reduce operational costs by up to 30–40% through the implementation of transaction automation, the QRIS system, and electronic wallets (e-wallets), while simultaneously expanding the customer base at minimal marginal cost (Bank Indonesia, 2023). However, the direct impact of digitalization on *Return on Assets* (ROA) was not significant during the observation period of this study. This condition indicates that operational efficiencies from digitalization do not automatically translate into increased profitability, but are instead allocated to other strategic objectives such as reducing environmental expenditures or fierce margin competition (Wijaya, 2023; Firmansyah et al., 2024).

Previous research findings demonstrate that digital transformation does not directly impact *Return on Assets* (ROA), despite its potential to generate operational efficiencies. This situation can be understood from an institutional logic perspective: the large investment in information technology and the complexity of organizational change take time to materialize and be reflected in performance indicators. Meanwhile, in the short term, the higher value of IT assets has not yet been amortized, negatively impacting ROA (Ji et al., 2022).

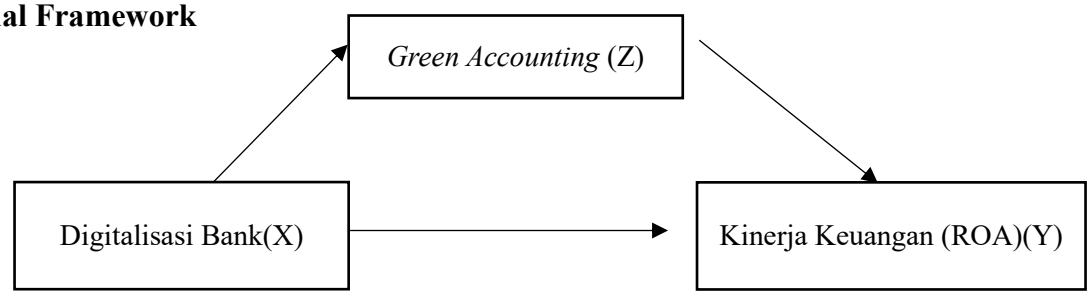
The Mediation Role of Green Accounting in the Relationship Between Bank Digitalization and Financial Performance

Green accounting acts as a crucial bridge connecting digitalization with improved financial performance, enabling the impact of digitalization on *Return on Assets* (ROA) to be transmitted through changes in the allocation of environmental/Corporate Social Responsibility (CSR) costs. From a theoretical perspective, Signaling Theory *asserts that* substantial environmental fund

allocation is a credible signal for *Environmental, Social, and Governance* (ESG) investors (Febriani & Zultilisna, 2023).

On the other hand, given that digital efficiency does not automatically translate into increased environmental commitment, and increased environmental costs tend to reduce profitability in the short term, this implies that the impact of digitalization on ROA depends heavily on the strategic choice of whether digital efficiency is allocated to green accounting or profit maximization. Regulatory pressure through POJK No. 51/2017 provides institutional incentives to allocate funds to green accounting, but is insufficient to overcome resistance from profit-maximizing shareholders (Mareta et al., 2024).

Conceptual Framework



Picture 1. Conceptual Framework

Writing Hypothesis

H1 :Bank digitalization has an impact on financial performance (ROA) at Index banks. SRI-KEHATI Index banks .

H2 :Bank digitalization has an impact on the implementation of *green accounting* in SRI - KEHATI .

H3 :Implementation of *green accounting* has an impact on financial performance (ROA) at SRI-KEHATI Index banks

H4 :Implementation of *green accounting* mediates the influence of bank digitalization on financial performance (ROA) of SRI-KEHATI Index banks .

RESEARCH METHODOLOGY

Types of research

This research design was designed using a quantitative approach framework to examine the causal relationships between the analyzed variables. This quantitative approach was used because it can test the relationships between variables through numerical data processing with statistical analysis techniques. (Creswell & Creswell, 2023). Meanwhile, the causal associative approach is applied to analyze the causal relationship or influence between variables that are the focus of the research (Sekaran & Bougie, 2020).

In detail, this study analyzes several key relationships: the influence of banking digitalization on financial performance, as measured by Return on Assets (ROA), the influence of banking digitalization on the implementation of green accounting, and the influence of green accounting implementation on financial performance. Furthermore, this study also examines the function of green accounting as a mediating variable in the relationship between banking digitalization and financial performance. Testing for direct and indirect effects between variables is conducted through regression analysis using a mediation approach (regression-based path analysis). on banks included in the SRI-KEHATI Index during the 2021–2024 observation period.

Data Types and Data Sources

The data used in this study is secondary data obtained from official publications by relevant parties and reused for analysis (Hair et al., 2021). The use of secondary data provides efficiency in the research process and ensures data reliability because it is sourced from audited official reports.

Data sources in this study include:

- The Annual Report for the period 2021–2024 is available and published on the official website of each bank and the Indonesian Stock Exchange .
- Sustainability Report *or* TJSL/PKBL Report which contains data on environmental development costs and the bank's social activities.
- Other relevant supporting data from the official website of the SRI-KEHATI Index (KEHATI Foundation) CAREFUL).

Data was collected through manual extraction from PDF documents and official websites, then processed in a spreadsheet for standardization purposes and data quality checks before statistical analysis was performed. This procedure is implemented to maintain data accuracy and reduce the potential for human error during the data entry and processing process.

Population and Sample

This study uses a relatively limited sample size (N = 16 observations from 4 banks) resulting from the strict inclusion criteria for consistent SRI-KEHATI banks from 2021 to 2024. Despite the limited sample size, this study remains valid for testing conceptual relationships between variables. However, the generalizability of the results is limited to the context of Indonesian SRI-KEHATI banks from 2021 to 2024 and requires validation with a larger sample. further research.

Table 1. Criteria/Standards

No	Selection Standards	Number of Companies
1.	Banking companies that have been listed on the Index SRI-KEHATI during the period 2021–2024	9
2.	Banks that are inconsistent (in and out) of the Index SRI-KEHATI during the period 2021–2024	(5)
3.	Banks that do not provide complete data related to research variables	(0)
Number of Samples		**4**
Number of Periods		**4**
Number of Observations = 4 x 4		**16**

Data Analysis Techniques

All data processing and analysis were carried out with a quantitative approach using SPSS statistical software version 25. The analysis stage procedures included descriptive statistics, classical assumption testing, and path analysis using the Baron and Kenny approach supplemented by the Sobel test to assess the significance of the mediation effect, with hypothesis testing at a significance level of $\alpha = 0.05$ (Baron & Kenny, 1986; Hair et al., 2021).

Descriptive Statistical Analysis

Descriptive statistical analysis is used to present an overview of research data which includes the average value (mean), standard deviation, minimum value, and maximum value of each variable. The aim is to describe the characteristics of the sample used in the study (Sekaran & Bougie, 2020).

Classical Assumption Test

Before conducting regression analysis, the data must meet the classical assumptions so that the resulting regression model meets the Best Linear Unbiased Estimator (BLUE) criteria. The classical assumption tests applied are as follows:

- The Normality Test is applied to test whether the residuals follow a normal distribution (Shapiro-Wilk).
- Multicollinearity Test, this is used to assess whether there is a correlation between independent variables with the criteria of a VIF value < 10.
- Heteroscedasticity test to identify the existence of inequality in residual variance through the Glejser test or scatterplot.
- Autocorrelation test to test the correlation between residuals (Durbin-Watson).

Multiple Linear Regression Analysis with Mediating Variables (Baron & Kenny)

This study uses multiple linear regression analysis with mediating variables using the Causal Step method, as proposed by Baron and Kenny (1986). This method estimates three regression equations to test the mediation effect (Ghozali, 2021):

Equation 1: Effect of X on Y
$Y = \alpha + cX + e_1$
Equation 2: Effect of X on Z (mediator)
$Z = \alpha + aX + e_2$
Equation 3: Effect of X and Z on Y
$Y = \alpha + c'X + bZ + e_3$

Information:
X= Bank Digitalization (Independent Variable)
Z= Implementation of *Green Accounting* (Mediating Variable)
Y= Financial Performance (Dependent Variable)
a, b, c, c'= Regression Coefficient

Table 2. Mediation Decision-Making Criteria:

Condition	**Conclusion**
Coefficients $a$and , $b$significant, c'' not significant	Full Mediation
The coefficients a, b, and $c'$are significant, but $c'<c$	Partial Mediation
Coefficient $a$or $b$not significant	No Mediation

Sobel Test

This test is used to assess the significance of indirect influence (mediation) using the following formula:

$$Z = \frac{a \times b}{\sqrt{b^2 S_a^2 + a^2 S_b^2}}$$

Information:

a= Regression coefficient $X \rightarrow Z$

b= Regression coefficient $Z \rightarrow Y$

s_a= Standard error of coefficient$a$

s_b= Standard error of coefficient b

The mediation effect is declared significant if the z value exceeds 1.96 or the p-value is below 0.05 (Ghozali, 2021).

Hypothesis Testing

- Partial Test (t-Test):

  A test used to identify the extent of the influence of each independent variable on the dependent variable partially. The hypothesis is declared accepted if the p-value < 0.05 or the calculated t-value is greater than the t-table, indicating statistical significance (Sekaran & Bougie, 2020).

- Coefficient of Determination (R^2) Test:

  It measures the proportion of variation in the dependent variable that can be explained by the independent variables in a model (Hair et al., 2021). The R^2 value ranges from 0 to 1, with the following interpretation:

  - $R^2 = 0.3$ indicates a weak model
  - $R^2 = 0.5$ indicates a moderate model
  - $R^2 = 0.7$ indicates a strong model

RESULTS AND DISCUSSION

Regression Results 1 (X → Y: Direct Effect of Digitalization on ROA)

Table 4. Model Summary Output Results (X → Y)

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.312[a]	.097	.033	.71855	.097	1.509	1	14	.240	1.392

a. Predictors: (Constant), Digitalisasi

b. Dependent Variable: Return on Assets

Source: Processed Research Results using SPSS Statistics 25, 2025

Table 4. ANOVA Output Results (X → Y)

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.779	1	.779	1.509	.240[b]
	Residual	7.228	14	.516		
	Total	8.008	15			

a. Dependent Variable: Return on Assets

b. Predictors: (Constant), Digitalisasi

Source: Processed Research Results using SPSS Statistics 25, 2025

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Table 5. Output Coefficients Results (X → Y)

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients			95,0% Confidence Interval for B		Collinearity Statistics	
		B	Std. Error	Beta	t	Sig.	Lower Bound	Upper Bound	Tolerance	VIF
1	(Constant)	2.704	.392		6.889	.000	1.862	3.546		
	Digitalisasi	.000	.000	.312	1.228	.240	.000	.001	1.000	1.000

a. Dependent Variable: Return on Assets

Source: Processed Research Results using SPSS Statistics 25, 2025

Simple linear regression analysis is used to identify the extent to which banking digitalization directly influences financial performance as proxied by Return on Assets (ROA). The test results show that the regression model is only able to explain 9.7 % of the variation in Return on Assets (ROA), while the other 90.3% of the variation is influenced by factors outside the scope of this study.

The results of the ANOVA test showed an F value of 1.509 with a significance level of 0.240 ($p > 0.05$) , which indicates that the overall regression model is not statistically significant. Based on the coefficient estimation results, the banking digitalization variable has a standardized beta value of 0.312 with a significance value of 0.240 ($p > 0.05$) . These findings indicate that banking digitalization has not had a significant direct impact on ROA.

Thus, increasing the intensity of digitalization has not been proven to directly increase banking profitability as proxied by ROA. Therefore, Hypothesis 1 (H1) is rejected because no significant direct influence was found between banking digitalization and financial performance.

Regression Results 2 (X → Z: The Effect of Digitalization on Green Accounting)

Table 6. Model Summary Output Results (X → Z)

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.788[a]	.621	.594	.11198	.621	22.974	1	14	.000	1.763

a. Predictors: (Constant), Digitalisasi

b. Dependent Variable: Green Accounting

Source: Processed Research Results using SPSS Statistics 25, 2025

Table 7. ANOVA Output Results (X → Z)

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.288	1	.288	22.974	.000[b]
	Residual	.176	14	.013		
	Total	.464	15			

a. Dependent Variable: Green Accounting

b. Predictors: (Constant), Digitalisasi

Source: Processed Research Results using SPSS Statistics 25, 2025

Table 7. Results of Output Coefficients (X → Z)

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95,0% Confidence Interval for B		Collinearity Statistics	
		B	Std. Error	Beta			Lower Bound	Upper Bound	Tolerance	VIF
1	(Constant)	.771	.061		12.600	.000	.639	.902		
	Digitalisasi	.000	.000	-.788	-4.793	.000	.000	.000	1.000	1.000

a. Dependent Variable: Green Accounting

Source: Processed Research Results using SPSS Statistics 25, 2025

Simple linear regression analysis was used to test the effect of banking digitalization on green accounting implementation. The test results showed that the regression model had an R^2 value of 0.621, indicating that banking digitalization was able to explain 62.1 % of the variation in green accounting .

The ANOVA test produced an F value of 22.974 with a significance level of 0.000 ($p < 0.05$) , which confirms that the regression model is statistically significant and suitable for use in hypothesis testing.

Based on the coefficient estimation results, the banking digitalization variable has a standardized beta value of -0.788 with a t-value of -4.793 and a significance level of 0.000 ($p < 0.05$). These findings indicate that banking digitalization has a significant effect on green accounting with a negative relationship. In other words , increasing digitalization intensity tends to correlate with a decrease in the proportion of environmental cost allocation.

Thus, Hypothesis 2 (H2) is accepted, even though the direction of the relationship obtained is different from the initial expectations of the study . These findings indicate that the efficiencies generated from the digital transformation process have not been fully accompanied by increased resource allocation for environmental activities.

Regression Results 3 (Full Mediation Model: X → Z → Y)

Table 8. Model Summary Output Results (X → Z → Y)

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.685[a]	.469	.387	.57183	.469	5.744	2	13	.016	1.159

a. Predictors: (Constant), Green Accounting, Digitalisasi

b. Dependent Variable: Return on Assets

Source: Processed Research Results using SPSS Statistics 25, 2025

Table 9. ANOVA Output Results (X → Z → Y)

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	3.757	2	1.878	5.744	.016[b]
	Residual	4.251	13	.327		
	Total	8.008	15			

a. Dependent Variable: Return on Assets

b. Predictors: (Constant), Green Accounting, Digitalisasi

Source: Processed Research Results using SPSS Statistics 25, 2025

Table 10. Output Coefficients Results (X → Z→ Y)

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients			95,0% Confidence Interval for B		Collinearity Statistics	
		B	Std. Error	Beta	t	Sig.	Lower Bound	Upper Bound	Tolerance	VIF
1	(Constant)	5.878	1.097		5.357	.000	3.508	8.248		
	Digitalisasi	-.001	.000	-.469	-1.429	.177	-.002	.000	.379	2.641
	Green Accounting	-4.119	1.365	-.991	-3.018	.010	-7.067	-1.170	.379	2.641

a. Dependent Variable: Return on Assets

Source: Processed Research Results using SPSS Statistics 25, 2025

Multiple linear regression analysis was used to simultaneously assess the effect of banking digitalization and green accounting on financial performance, as proxied by Return on Assets (ROA). The results showed that the regression model used had a coefficient of determination (R^2) of 0.469. This means that around 46.9 % of the variation in ROA can be explained by these two variables, while the remainder is influenced by other factors outside the scope of the study. The Adjusted R^2 value of 0.387 indicates that the model has a fairly good level of explanatory power after considering the number of independent variables used.

The results of the ANOVA test showed an F value of 5.744 with a significance level of 0.016 ($p < 0.05$) , which indicates that the overall regression model meets the statistical significance criteria and is suitable for further analysis.

Based on the coefficient table, the banking digitalization variable has a standardized beta value of -0.469 with a significance value of 0.177 ($p > 0.05$) . This finding indicates that banking digitalization does not have a significant effect on ROA after being controlled for with the Green Accounting variable. Thus, the direct effect of digitalization on financial performance is not significant when the mediation model is applied. Meanwhile, the Green Accounting variable shows a standardized beta value of -0.991 with a significance value of 0.010 ($p < 0.05$) .

The findings indicate that Green Accounting has a significant influence on ROA with a negative relationship direction. This means that an increase in environmental cost allocation tends to be followed by a decrease in the level of banking profitability as measured by ROA.

Sobel test

The Sobel test is used to assess whether banking digitalization has an indirect effect on financial performance, as measured by Return on Assets (ROA), through the mediating role of green accounting. This test aims to determine whether the mediating effect identified through regression analysis is statistically significant.

The results of the Sobel test showed a z statistic value of 2.553 with a significance level of 0.011 ($p < 0.05$) . These results indicate that the indirect effect of digitalization on ROA through green accounting is statistically significant. Thus, it can be concluded that green accounting functions as a mediating variable in the relationship between banking digitalization and financial performance.

Mediation Analysis Based on Baron and Kenny's Approach

The mediation analysis in this study refers to the Baron and Kenny (1986) approach which requires four stages of testing to determine the existence and type of mediation.

The first stage (path c) tested the direct effect of banking digitalization on ROA. The test results showed that this effect was not statistically significant ($\beta = 0.312$; $p = 0.240$), indicating that digitalization does not have a direct effect on financial performance.

The second stage (path a) tested the effect of banking digitalization on green accounting. Regression results showed that digitalization had a significant negative effect on green accounting

(β = -0.788; p < 0.001), indicating that increased digitalization tends to be accompanied by decreased environmental cost allocation.

The third stage (path b) tested the effect of green accounting on ROA by controlling for digitalization. The test results showed that green accounting had a significant negative effect on ROA (β = -0.991; p = 0.010), indicating that increased environmental cost allocation correlated with decreased profitability.

The fourth stage (path c′) re-examines the effect of digitalization on ROA after the mediating variables are included in the model. The results show that the effect of digitalization remains insignificant (β = -0.469; p = 0.177), while the overall model is significant with an R^2 value of 0.469.

Based on the four stages of testing and the results of the Sobel test, it can be concluded that green accounting mediates the relationship between banking digitalization and ROA. However, the mediation pattern formed is inconsistent mediation (inconsistent mediation or suppression effect), where digitalization influences ROA primarily through changes in environmental cost allocation, not through a direct influence on profitability.

Final Summary of Mediation Analysis (Path a, b, c, and c′)

The results of the mediation analysis indicate that the relationship between banking digitalization and financial performance, as proxied by Return on Assets (ROA), occurs through an indirect mechanism with green accounting as a mediating variable. Testing the direct effect of digitalization on ROA (path c) showed insignificant results (β = 0.312; p = 0.240), indicating that digitalization does not have a direct effect on financial performance.

Furthermore, testing the effect of digitalization on green accounting (path a) shows a significant negative effect (β = -0.788; p < 0.001), indicating that increased digitalization tends to be followed by a decrease in environmental cost allocation. Testing the effect of green accounting on ROA in the mediation model (path b) shows a significant negative result (β = -0.991; p = 0.010), indicating that increased environmental cost allocation is correlated with decreased ROA. When green accounting is included in the model, the direct effect of digitalization on ROA (path c') becomes insignificant (β = -0.469; p = 0.177), while the model's explanatory power increases substantially (R^2 = 0.469).

This pattern indicates that green accounting mediates the relationship between digitalization and ROA through an inconsistent mediation mechanism, where the effect of digitalization on financial performance primarily works through changes in environmental cost allocation, rather than through a direct effect on profitability.

The results of the Sobel test and Baron and Kenny's analysis consistently show that green accounting serves as a mediating variable in the relationship between banking digitalization and financial performance. Although the direct effect of digitalization on ROA was insignificant, the indirect effect through green accounting proved statistically significant. This finding confirms that the impact of digitalization on financial performance is highly dependent on the environmental resource allocation policies implemented by banks.

Discussion

The Impact of Banking Digitalization on Return on Assets (ROA)

The results of the study show that banking digitalization does not directly increase ROA, but has a significant effect on changes in environmental cost allocation which ultimately impacts financial performance. This can be explained through several considerations. First, banking digitalization during the observation period was still in the infrastructure strengthening and system optimization phase, so its financial benefits had not yet been fully realized. Second, digitalization also comes with implementation costs, technology development, and human resource adjustments

that can reduce profitability in the short term. Third, increasingly fierce competition due to digitalization has the potential to reduce profit margins, so that the net impact on ROA becomes insignificant.

This finding is in line with the view that digitalization does not always have a direct impact on financial performance, but rather requires certain distribution mechanisms so that efficiency benefits can be reflected in profitability levels.

The relatively low allocation of environmental costs and its negative impact on ROA indicates that green accounting practices are still perceived as a short-term cost burden. This condition indicates that the economic benefits of sustainability practices have not been fully internalized in banking business strategies.

The Impact of Banking Digitalization on Green Accounting

The results of the study show that banking digitalization has a significant effect on green accounting in a negative direction. This finding indicates that increased digitalization is actually accompanied by a decrease in the proportion of environmental cost allocation. This shows that the efficiencies resulting from digital transformation have not been consistently directed towards increasing environmental sustainability commitments.

Conceptually, this finding can be interpreted as an indication that banking management prioritizes leveraging digital efficiency for purposes other than environmental activities. In the context of managerial decision-making, environmental costs are still perceived as a cost component that does not directly contribute to financial performance, making them a relatively easy area to reduce when operational efficiencies are achieved.

These results show that digitalization does not automatically drive sustainable practices, and that environmental commitments require deliberate policies, rather than simply relying on technological advances.

The Effect of Green Accounting on Return on Assets (ROA)

The test results show that green accounting has a significant effect on ROA in a negative direction. This finding indicates that an increase in environmental cost allocation is correlated with a decrease in banking profitability in the short term. Thus, green accounting practices in the sample banks are still perceived as a cost burden that reduces profits, not as a strategic investment that provides direct financial benefits.

These findings suggest that the economic benefits of environmental activities, such as improved reputation, customer loyalty, or reduced long-term risk, are not fully reflected in financial performance as measured using ROA. This indicates a time lag between environmental expenditures and their potential economic benefits, so that positive sustainability impacts have not been internalized in short-term profitability indicators.

Discussion of Green Accounting Mediation in the Relationship between Digitalization and ROA

The results of the mediation analysis show that green accounting mediates the relationship between banking digitalization and ROA through an inconsistent mediation mechanism. Digitalization does not have a direct impact on ROA, but it has a significant impact on changes in environmental cost allocation, which in turn has a significant impact on financial performance.

This mediation pattern indicates that the impact of digitalization on banking profitability is highly dependent on resource allocation decisions taken by management. The efficiencies generated by digitalization do not automatically increase ROA, but rather work indirectly through adjustments to cost items, including environmental costs. Thus, the impact of digitalization on financial performance is more structural and strategic, rather than mechanical.

These findings confirm that the relationship between technology, sustainability, and financial performance is complex and non-linear. Digitalization can improve operational efficiency,

but without policies that explicitly integrate sustainability into business strategy, the benefits of digitalization do not necessarily strengthen environmental commitments or directly increase profitability.

Theoretical and Practical Implications and Limitations

This study strengthens the mediation theory by showing that the effect of digital transformation on profitability is determined by resource allocation decisions. These findings also highlight the conflict between shareholder and stakeholder logics in Indonesian banking institutions. For practitioners, regulators are advised to require green accounting allocations so that efficiency does not reduce sustainability commitments. Bank boards of directors need to integrate sustainability into digital strategies. Limitations of the study include the short observation period (2021-2024), the sample limited to Indonesian banking, the cross-sectional design, and the potential for confounding variables. Future research could use longitudinal designs and more diverse contexts to deepen understanding of institutional mechanisms.

CONCLUSION AND SUGGESTIONS

Conclusion

This study discusses the effect of banking digitalization on financial performance as measured by Return on Assets (ROA), while also examining the role of green accounting as a mediating variable in banks listed in the SRI-KEHATI Index during the period 2021 to 2024. Based on the analysis results, it can be concluded that banking digitalization does not have a direct significant effect on ROA, so that increased digitalization has not automatically increased banking profitability in the short term.

Banking digitalization has been shown to have a significant negative impact on green accounting, indicating that increased digitalization tends to be accompanied by a decrease in environmental cost allocation. In addition, green accounting also has a significant negative effect on ROA, indicating that environmental costs are still perceived as a burden that suppresses short-term profitability.

The results of the mediation analysis show that green accounting mediates the relationship between banking digitalization and ROA through an inconsistent mediation mechanism. Thus, the impact of digitalization on financial performance occurs indirectly through changes in the allocation of environmental costs, reflecting the complex and non-linear relationship between digitalization, sustainability, and financial performance.

Suggestion

Based on the research results, banking management is advised to manage digitalization strategically and integrate it with sustainability policies so that the resulting efficiencies not only improve operational performance but also support environmental responsibility. Regulators and stakeholders can consider strengthening reporting and transparency of environmental cost allocation to encourage a balance between digital transformation and sustainability.

For investors, the level of banking digitalization should not be the sole indicator of short-term financial performance, but rather should be examined in conjunction with environmental cost allocation policies. For future research, it would be advisable to expand the scope of observation time, reach more diverse research objects, and explore more innovative variables and analysis methods.

For future researchers, it is recommended to use a longer observation period, expand the research object to other sectors or indices, and consider the use of additional variables such as bank size, risk, or more comprehensive ESG indicators. In addition, the use of alternative analysis methods such as panel data or a longitudinal approach can provide a deeper understanding of the dynamics of the relationship between digitalization, sustainability, and financial performance.

Research Limitations

This study has several limitations that need to be considered. First, the relatively limited observation period may affect the research's ability to capture the long-term impact of digitalization and *green accounting* on financial performance. Second, the research sample is limited to banks included in the SRI-KEHATI Index, so the research results cannot be generalized to the entire banking industry. Third, the measurement of *green accounting* in this study is limited to the environmental cost aspect, so it does not reflect the company's overall sustainability practices.

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