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The Consequence Which Operational Efficiency Makes On The Business's Capacity To Preserve Its Financial Stability In The Banking Sector In 2022-2024

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Abstract

Introduction/Main Objective: Indonesia's uncertain economic growth, coupled with obstacles such as inflation, global instability, and post-pandemic recovery, has led to an interesting dynamic in Indonesia's financial condition for the 2022-2024 period, with stable but slightly slowing economic growth. This requires banks to manage operating costs effectively.

Background: Based on previous findings, the ratio of operating expenses to operating income and non-performing loan do not significantly impact profitability and are arguably unrelated to a company's ability to generate profits. Conversely, the cost-to-income ratio has a positive impact because it can increase a company's capacity to generate profits. This study aims to examine how this aspect of operational efficiency affects banks' financial condition for the 2022-2024 period.

Novelty: This study measures efficiency indicators using the ratio of operating expenses to operating income, cost-to-income ratio, non-performing loan, and return on assets as profitability metrics that indicate bank stability. The study's originality is demonstrated by the cost-to-income ratio applied to conventional banks for the 2022-2024 period.

Research Methods: This study employed quantitative methods and selective sampling across 19 banks. Based on agency theory, this study uncovered the relationship between owners and management. The classical assumption test and t-test using SPSS 27 were the analytical tools used to confirm this hypothesis.

Findings/Results: Based on the findings, the operating expense to operating income ratio, the cost to income ratio, and the non-performing loan ratio all had significant and unfavorable effects on profitability.

Conclusion: This study indicates that operating expenses and operating income, the cost-to-income ratio, and non-performing loan impact a company's financial stability. This study suggests that bank management should manage operating costs to maintain efficiency, improve revenue management efficiency relative to total costs, optimize non-interest income sources and asset utilization efficiency, and reduce non-performing loan by strengthening credit risk management.

Keywords: Operating Expenses to Operating Income ratio, Cost to Income Ratio, Non-Performing Loan and Return On Assets.

Introduction

Banks play a crucial role in a country's economic system. Banks are financial institutions that play a vital role in collecting funds originating from the public through various savings categories. These funds are then distributed back to the public, either through credit or other financial services. Through this intermediary function, banks contribute to supporting economic development and helping optimizing well-being and quality of life community as a whole (Pemerintah Republik Indonesia, 1998). From 2022-2024 the Indonesian banking system served as a pivotal catalyst for economic growth and a safeguard for financial stability by facilitating financing for productive sectors, including industry, trade, and infrastructure.

Banking activities in Indonesia are supervised by a regulatory agency, namely the Financial Services Authority (OJK) and Bank Indonesia (BI), emphasizing the management of external shocks and the facilitation of economic growth and recovery post-COVID-19 pandemic. Indonesia's financial situation from 2022 to 2024 exhibited notable characteristics, characterized by stable yet marginally decelerating economic growth alongside rampant inflation. In 2022, the Indonesian economy expanded by around 5.31%, predominantly driven by the industrial and trade sectors, which considerably contributed to this growth (Kadin, 2025). For 2023, Indonesia's economic growth is projected to slow to 5.05%, driven by high inflation and global uncertainty (Setkab, 2023). In 2024, growth is projected to decelerate to 5.03% owing to a reduction in Indonesian exports relative to the previous year, although the services and commerce sectors continue to be crucial economic catalysts. Inflation is projected to be 2.8% in 2024 (Kemenkeu, 2025), indicating the government's efficacy in sustaining price stability. Nonetheless, obstacles persist, including global issues like economic instability and inflationary pressures, as well as internal concerns such as projected rises in food and energy prices and political dangers preceding the 2024 elections.

The level of operational efficiency can be assessed through indicators like the Operating Expenses to Operating Income, which evaluates a bank's management capability in assessing the efficiency of operating costs in generating income from primary banking activities. Simultaneously, the Cost to Income Ratio, which evaluates a bank's efficiency in managing costs linked to all revenue streams, including non-interest income, the Non-Performing Loan ratio, which assesses non-performing loan in relation to the total loan given by banks to debtors, and Return on Assets, which gauges a company's capacity to earn profits during its operations, continue to exhibit considerable fluctuations. In addition to being quantifiable via these measures, operational efficiency and financial stability are elucidated within the framework of agency theory. Agency theory is predicated on three primary assumptions: those about human traits, organizational framework, and information. These three assumptions form the basis of agency theory in describing the connection between the owner of the interest and the party entrusted with the task of carrying it out Sutisna et al., (2024). This phenomenon sparks curiosity to research further and prove whether the operational efficiency reflected in these variables actually contributes to a company's financial stability.

Research on banking financial performance in Indonesia has been extensively conducted using various variables. For example, research by Tantra et al., (2024), used the Operating Expenses to Operating Income ratio, but this study still focused on state-owned banks and stated that Operating Expenses to Operating Income ratio have a adverse effects and contribute significantly on Return On Assets, then Non-Performing Loan has a positive and showed no clear effect influence on Return On Assets. Furthermore, research by Fadilah & Muniarty (2023), which used the Operating Expenses to Operating Income ratio and Non-Performing Loan to measure financial performance, still focused on profitability and was limited to Bank Central Asia, This study states that Operational Expenses and Operational Income have a real influence on Return On Assets and Non Performing Loan does not show a clear influence on Return On Assets. Then, research Cahyaningtyas & Dura, (2021) Included were

bank health ratios, including the Operating Expenses to Operating Income ratio and Non-Performing Loan. This study concentrated on rural banks (BPR) and rural banks (BPRS) in Malang City, This study provides evidence that Non-Performing Loan have increased but are still considered healthy, and the ratio of Operating Expenses to Operating Income ratio indicates a decline and the bank has operated better. Furthermore, research by Manek & Tae (2020); Nasution & Prima (2024) shows that Operating Expenses to Operating Income ratio, and Non-Performing Loan have a real influence in a negative direction on Return On Assets. Research by Anjasmara et al., (2024); Dewi & Herlina (2024); Putri et al., (2022), states that Operating Expenses to Operating Income ratio have a significant effect on Return On Assets. Research by Hasibuan et al., (2022), shows that Operating Expenses to Operating Income ratio Income impact towards decreasing Return On Assets. Research by Hassan et al., (2024); Kumalasari & Hersugondo (2020) shows that Cost to Income Ratio has a negative effect, in contrast to research by Ayinuola & Gumel, (2023) which states that Cost to Income Ratio has an effect that leads to an increase. Furthermore, research by Ashari & Arifin (2024); Florid & Purnamasari (2023); Sochib et al., (2023), stated that Non-Performing Loan, significantly impact Return On Assets. Meanwhile, research by Sasongko & Yusnita (2023) that Non-Performing Loan, positively impact Return On Assets despite increasing Non-Performing Loan.

This prior research indicates that while operational efficiency and financial ratios, including the Operating Expenses to Operating Income ratio, Cost to Income Ratio and Non-Performing Loan, have been extensively examined, there is a paucity of studies utilizing the Cost to Income Ratio. While profitability analysis is prevalent in most studies, there remains a paucity of study about banking financial stability, which signifies a firm's capacity to withstand external risks, economic volatility, and market pressures. Certain studies restricted their scope to 2022, thereby omitting the newest developments until 2024, which are essential for comprehending post-pandemic economic conditions and the effects of current policies.

Based on this explanation, this study aims to understand operational efficiency that can support financial stability in the banking sector between 2022 and 2024. This study aims to examine how operational efficiency relates to financial stability. In other words, the study focuses on understanding the extent to which the effectiveness of operational cost and revenue management can impact a company or institution's ability to maintain its financial health, as well as the impact that this connection has related to the quality of performance of business entities operating in the banking financial services sector. Furthermore, the study hopes to add additional empirical insights to the existing body of academic literature in order to facilitate further research that is both more in-depth and more exhaustive on this subject of operational efficiency and financial stability in different sectors.

Research Methods

Types Of Research

This research is a causal correlational study, designed to examine how one variable influences another. The focus of this study is to determine the effect of the Operating Expenses to Operating Income ratio, the Cost to Income Ratio, and Non-Performing Loan on profitability. According to Sugiyono (2023), causal research is essentially a type of research that aims to understand and explain the cause-and-effect relationship between two or more variables. In other words, this approach is used to determine how changes in one particular variable can trigger or cause changes in other variables, directly or indirectly.

Data Types and Sources

Each of the data that was utilised in this investigation was quantitative in character. Quantitative research is a methodological approach that is built on positivist philosophy, as

stated by (Sugiyono, 2023). This strategy is utilised to explore specific populations or groups. For the purpose of this study, secondary data were taken from annual reports that were issued by financial institutions.

Population and Sample

The target group of this research consists of 58 banking companies that consistently presented financial reports during the study period. This study applies a non-probability population subset sampling technique with a purposive sampling method to determine the sample. This method was chosen because the selection of sample units was carried out deliberately based on certain criteria deemed relevant to the research objectives. According to Sugiyono (2023), purposive sampling is a sampling method that emphasizes specific considerations or requirements so that only objects that meet these criteria can be used as research samples. Thus, sample selection is not done randomly, but based on the researcher's assessment of the most appropriate characteristics. The criteria used in sample selection are as follows:

1. Banks that consistently presented financial reports during the study period.

2. Banks that experienced profits during the study period.

Based on the criteria, 19 banking companies were selected based on the sample selection criteria and procedures.

Theoretical Review

The following theories are used in this study:

1. Agency Theory
   An overview of the dynamics of the relationship between the party giving power (owner/investor) and the party receiving power (management) is provided by the conceptual framework of agency theory. According to Sutisna et al., (2024), those assumptions concerning human nature, organisational design, and information are the three fundamental pillars around which the theory is founded.

2. Return On Assets
   According to Arsana et al., (2024), Return on Assets is a ratio used to evaluate a bank's effectiveness in generating profits through the utilization of all its assets. This ratio assesses the ability of a bank's assets to generate profits, thus reflecting management's efficiency in managing available resources. Furthermore, referring to OJK Circular Letter No. 9/SEOJK.03/2020, the Return On Assets indicator is calculated using a specific formula established as the standard for measuring bank profitability. The Return on Assets formula according to these regulations is as follows:

$$ROA = \frac{Profit\ Before\ Tax}{Total\ Assets} \times 100\%$$

3. Operating Expenses to Operating Income ratio
   According to Arsana et al., (2024), the Operating Expenses to Operating Income ratio is an indicator used to assess a bank's operational efficiency. This ratio illustrates how optimally a banking institution manages its operating costs compared to the operating income generated. The lower the ratio, the more efficient the bank's operational performance in controlling expenses and maximizing revenue. Furthermore, referring to the provisions stipulated in OJK Circular Letter No. 9/SEOJK.03/2020, the calculation of the BOPO ratio is regulated through a specific formula used as the standard for measuring operational efficiency in the banking sector. The Operating

Expenses to Operating Income ratio formula according to this regulation is presented as follows:

$$BOPO = \frac{\text{Total Operating Expenses}}{\text{Total Operating Income}} \times 100\%$$

4. Cost to Income Ratio
   According to Arsana et al., (2024), the Cost to Income Ratio is an indicator used to describe a bank's level of efficiency as a business entity in managing all operational costs compared to the revenue generated. This ratio provides an overview of the bank's ability to reduce costs and optimize revenue, thus demonstrating the quality of the institution's operational management. A lower Cost to Income Ratio generally indicates a more efficient bank operation. Furthermore, in accordance with the provisions stipulated in OJK Circular Letter No. 9/SEOJK.03/2020, the calculation of the Cost to Income Ratio is regulated by a standard formula used as a reference for measuring the level of banking operational efficiency. The official formula used to calculate the Cost to Income Ratio according to this regulation is as follows:

$$CIR = \frac{BOSB - CKPN}{PBB + POSB - PCKPN} \times 100\%$$

   Description:
   BOSB: Operating Expenses Other Than Interest
   CKPN: Allowance for Impairment Losses
   PBB: Net Interest Income
   POSB: Operating Income Other Than Interest
   PCKPN: Recovery of Allowance for Impairment Losses

5. Non-Performing Loan
   According to Manek & Tae (2020), the Non-Performing Loan ratio is essentially utilized as an indicator to evaluate the overall quality of credit distributed by banks to their debtors. In other words, this ratio serves as a crucial measure to determine the extent to which loan disbursements encounter repayment issues. Furthermore, the calculation of the Non-Performing Loan ratio refers to the formula stipulated in the Financial Services Authority (OJK) circular letter No. 9/SEOJK.03/2020, which provides standardized guidance for assessing the level of problematic loan. The official formula used to calculate the Non-Performing Loan according to this regulation is as follows:

$$NPL = \frac{Problem\ Credit}{Total\ Credit} \times 100\%$$

Based on the above framework of thought, the following conceptual framework can be formulated :

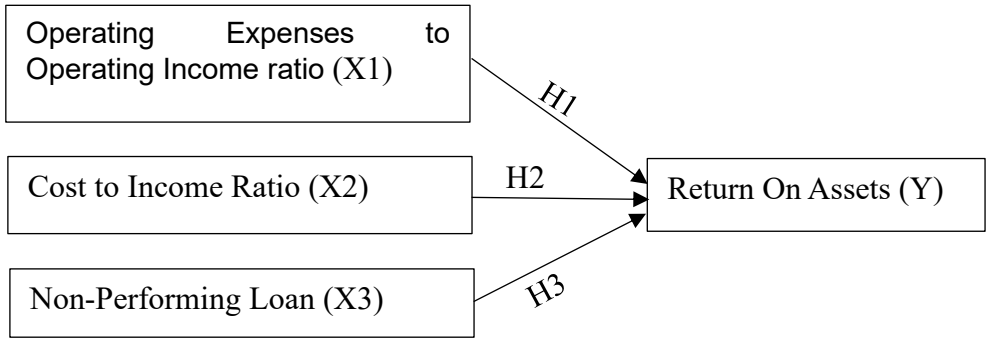

Figure 1. Coceptual Framework
Source: Author's Work, 2025.

Data Analysis Techniques and Hypotesis Testing
Classical assumption tests, including normality, multicollinearity, heteroscedasticity, and correlation, were used in this study. In addition to the classical assumption tests, this study also employed multiple linear regression and a t-test using SPSS 27.

1. Descriptive Statistical Analysis
   Descriptive statistical analysis is a data analysis method used to describe or provide an overview of a set of data without testing hypotheses or drawing inferential conclusions. Its purpose is to explain the basic characteristics of the data obtained in the research.
2. Normality Test
   The objective of the normality examination is to figure out whether or not the residual data follow a pattern that is consistent with a normal distribution profile. When the significance value is greater than 0.05, the data is deemed to be consistently distributed. On the other hand, if the significance value is less than 0.05, it provides an indication that the data are not normally distributed.
3. Multicollinearity Test
   In order to determine whether or not there is a connection between the regression model and the correlation between the independent variables, the multicollinearity test is carried out. In the present investigation, the Variance Inflation Factor (VIF) is utilised to evaluate the presence of multicollinearity. In cases where the value of the VIF is greater than 10, the regression model is regarded as suitable and free from any problems related to multicollinearity.
4. Heteroscedasticity Test
   This heteroscedasticity test is used to determine the inequality of residual variances for each predictor value. The method used is the Glejser method, which states that there are no symptoms of heteroscedasticity if the Sig. value is >0.05.
5. Autocorrelation Test
   This autocorrelation test is conducted to ensure there is no correlation between residuals in the regression model. Autocorrelation can be detected using the Durbin-Watson (D-W) test. If -2 is less than or equal to 2, there will be no autocorrelation. If the D-W value is less than -2, there will be positive autocorrelation, and if the D-W value is greater than 2, there will be negative autocorrelation.
6. Multiple Linear Regression
   Multiple linear regression is a statistical procedure that is used as a tool to analyze the strength of the relationship that exists between a number of different variables. In this research, multiple linear regression analysis is applied to examine how the

Operating Expenses to Operating Income ratio, the Cost to Income Ratio, and the Non-Performing Loan relate to profitability, which is represented by Return on Assets. The multiple linear regression:

$$Y = \alpha + \beta 1X1 + \beta 2\,X2 + \beta 3X3 + \varepsilon$$

7. Partial T Test
   The Partial T Test For the purpose of assessing the degree to which each independent variable (X) has a bearing on the dependent variable (Y), the t-test is commonly utilised. The paragraph that follows is an outline of the rules that should be followed when making decisions on the t-test hypothesis:
   a. If the calculated t-value > t-table or Sig. < 0.05, the preliminary hypothesis is accepted, meaning that Operating Expenses to Operating Income ratio, cost to income ratio, and non-performing loan individually significantly influence profitability.
   b. If the calculated t-value < t-table or Sig. > 0.05, the preliminary assumption is rejected, indicating that there is no individual effect between Operating Expenses to Operating Income ratio, cost to income ratio, and non-performing loan on profitability.

Result

Table 1 Descriptive Statistical Analysis

		Operating Expenses to Operating Income ratio	Cost to Income Ratio	Non-Performing Loan	Return On Assets
N	Valid	51	51	51	51
	Missing	0	0	0	0
Mean		,1404	,1012	2,3384	1,8427
Median		,3700	-,1800	2,1000	1,8000
Mode		-,41[a]	-,98[a]	1,40[a]	1,80[a]
Std. Deviation		,94742	1,00903	1,27180	1,20614
Range		4,09	3,89	7,98	3,89

Source: Author's Work, 2025.

Each variable exhibits considerable data variability (standard deviation), signifying changes across time periods or within study entities. The mean and median values for the Non-Performing Loan and Return On Assets variables exhibit minimal disparity, suggesting a somewhat normal data distribution. Evidence suggests the presence of outliers in the Operating Expenses to Operating Income ratio and Cost to Income Ratio variables; however, following examination, these outliers are not attributable to input or recording errors, but instead reflect inherent variability within the sampled data. Consequently, the data were preserved in subsequent analyses as they accurately reflect the actual conditions and did not substantially influence the outcomes of the conventional assumption test. This conclusion aligns with the principles of quantitative research, which emphasize data authenticity and the objectivity of analytical outcomes.

Table 2. Normality Test

		Unstandardized Residual
N		51
Normal Parameters[a,b]	Mean	-,0529069
	Std. Deviation	,25801720
Most Extreme Differences	Absolute	,120
	Positive	,120
	Negative	-,107
Test Statistic		,120
Asymp. Sig. (2-tailed)[c]		,065

Source: Author's Work, 2025.

According to the findings of the Kolmogorov-Smirnov normality test, it is known that the Asymp. Sig. (2-tailed) value is 0.065, this shows that 0.065 > 0.05, so it can be concluded that the data is normally distributed.

Table 3. Multicollinearity Test

Model		Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics	
		B	Std. Error	Beta	T	Sig.	Tolerance	VIF
1	(Constant)	2,172	,081		26,969	,000		
	Operating Expenses to Operating Income ratio	-1,149	,067	-,903	-17,120	,000	,331	3,022
	Cost to Income Ratio	-,065	,059	-,055	-1,097	,278	,372	2,689
	Non-Performing Loan	-,069	,032	-,073	-2,177	,035	,819	1,221

Source: Author's Work, 2025.

The multicollinearity test findings indicate that all variables exhibit tolerance levels exceeding 0.10 and VIF values below 10. Consequently, it can be stated that none of the aforementioned variables demonstrate signs of multicollinearity in the employed model. This indicates that the independent variables do not unduly influence one another, allowing for their independent utilization.

Table 4. Heteroscedasticity Test

Model	Unstandardized Coefficients B	Std. Error	Standardized Coefficients Beta	T	Sig.
(Constant)	,122	,056		2,165	,035
Operating Expenses to Operating Income ratio	-,082	,047	-,421	-1,754	,086
Cost to Income Ratio	,016	,041	,087	,384	,703
Non-Performing Loan	,024	,022	,166	1,085	,283

Source: Author's Work, 2025.

Based on the test results, the data shows that all variables have a Sig. value greater than 0.05, indicating that the model does not exhibit any signs of heteroscedasticity.

Table 5. Autocorrelation Test

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	,972[a]	,946	,942	,25457	1,952

Source: Author's Work, 2025.

dw = 1,952

du = 1,675

4-du = 4-1,675 = 2,325

Du<dw<4-du = 1,675<1,952<2,325

According to the autocorrelation test results, it can be inferred that this model shows no indication of autocorrelation. This means that the independent, dependent, and residual variables in the dataset operate independently.

Table 6. Multiple Linear Regression

Model		Unstandardized Coefficients B	Std. Error	Standardized Coefficients Beta	T	Sig.
1	(Constant)	2,182	,076		28,585	,000
	Operating Expenses to Operating Income ratio	-1,081	,063	-,849	-17,206	,000
	Cost to Income Ratio	-,142	,055	-,120	-2,577	,013
	Non-Performing Loan	-,074	,030	-,078	-2,461	,018

a. Dependent Variable: ROA

Source: Author's Work, 2025.

From the data analysis presented above, the following multiple linear regression equation is produced:

Return On Assets = 2.182 – 1.081 (Operating Expenses to Operating Income ratio) - 0.142 (Cost to Income Ratio) – 0.74 (Non-Performing Loan).

a. A Operating Expenses to Operating Income ratio regression coefficient of -1.081 means that every 1-unit increase in Operating Expenses to Operating Income ratio will decrease Return On Assets by 1.081, assuming other variables remain constant.
b. A Cost to Income Ratio regression coefficient of -0.142 means that every 1-unit increase in Cost to Income Ratio will decrease Return On Assets by 0.142, assuming other variables remain constant.
c. A Non-Performing Loan regression coefficient of -0.074 means that every 1-unit increase in Non-Performing Loan will decrease Return On Assets by 0.074, assuming other variables remain constant.

Table 7. Partial T Test

Model		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	T	Sig.
1	(Constant)	2,182	,076		28,585	,000
	Operating Expenses to Operating Income ratio	-1,081	,063	-,849	-17,206	,000
	Cost to Income Ratio	-,142	,055	-,120	-2,577	,013
	Non-Performing Loan	-,074	,030	-,078	-2,461	,018
a. Dependent Variable: ROA						

Source: Author's Work, 2025.

The table also explains the t-test as follows:

a. The Operating Expenses to Operating Income ratio variable has a calculated t-value of -17.206 > t-table 2.017 with a Sig. 0.000 < 0.05. This indicates that The Operating Expenses to Operating Income ratio has a bad impact and have a significant influence on Return On Assets.
b. The Cost to Income Ratio variable has a calculated t-value of -2.577 > t-table 2.017 with a Sig. 0.013 < 0.05. This means that Cost to Income Ratio has a negative and significant effect on Return On Assets.
c. The Non-Performing Loan variable has a calculated t-value of -2.461 > t-table 2.017 with a Sig. 0.018 < 0.05. This indicates that Non-Performing Loan has a negative impact and has a significant influence on Return On Assets.

Discussion

The t-test indicates that Operating Expenses to Operating Income ratio influence profitability, as they serve as metrics for assessing a company's operational efficiency and capability. An escalation in operating expenses to operating income will lead to a decline in profit before tax and diminish the company's profitability. If operating expenses to operating income decline, the company's profitability will rise due to the efficient management of resources. According to the aforementioned argument, The ratio of operating expenses to operating income has a clear and detrimental impact on profitability. This finding is consistent with the study by

Kusumaningrum & Maika (2024), which reported that the Operating Expenses to Operating Income ratio negatively and significantly affects profitability. The research findings above align with agency theory, which explains that if managers fail to effectively control operating costs, the Operating Expenses and Operating Income will increase, leading to a decline in profits.

The t-test indicates that the Cost to Income Ratio influences profitability, as the Cost to Income Ratio serves as a metric for assessing the expenses a company incurs to create revenue. An elevated Cost to Income Ratio diminishes profitability as a result of heightened expenses incurred by the organization. A reduced Cost to Income Ratio results in increased profitability, since the company is deemed efficient in generating revenue relative to its costs. The aforementioned argument indicates that the Cost to Income Ratio exerts a negative and considerable have an effect on profitability. This finding is consistent with the study by Kumalasari & Hersugondo (2020), which revealed that the Cost to Income Ratio negatively and significantly influences Return On Assets. These research results are consistent with agency theory, which explains that managers, as agents, are responsible for managing the principal's resources. If managers fail to effectively control operational costs, wasteful operational costs will occur, leading to the growth of the Cost to Income Ratio and the decline in profitability.

The t-test indicates that the impact of Non-Performing Loan on profitability in this study arises from conditions that categorize Non-Performing Loan as those failing to meet principal and interest repayment obligations as stipulated by the bank, thereby posing a risk of loss. There is a correlation between the growth of Non-Performing Loan and the decline in profitability. This is because the interest charges that are incurred as a result of problematic loan restrict the ability of the organisation to generate interest revenue. If Non-Performing Loan decline, the company's profitability will rise due to income generated from loan interest. According to the aforementioned argument, Non-Performing Loan exert a detrimental and substantial influence on profitability. Non-Performing Loan have been reported to have a considerable impact on Return on Assets, according to the findings Sochib et al., (2023), of this research which are consistent with our previous findings. These findings align with agency theory, which explains that an increase in Non-Performing Loan reflects a manager's failure to fulfill their responsibilities to maximize shareholder welfare, leading to wasteful credit risk management that leads to declining profits and worsening company performance.

Conclusion

The test findings and discussion indicate that Operating Expenses to Operating Income ratio, the Cost to Income Ratio, and Non-Performing Loan all affect corporate profitability. This research has implications for companies to control operational costs to maintain an efficient level, increase the efficiency of revenue management against total costs, optimize non-interest income sources and the efficiency of asset use and reduce non-performing loan by strengthening credit risk management, conducting strict debtor selection and monitoring sustainability. This study has multiple limitations, including its focus on the three-year period from 2022 to 2024, the utilization of only three independent variables, and the reliance on data derived from published corporate annual reports. Consequently, it relies on the precision and comprehensiveness of each bank's reporting.

Suggestions for future research encompass prolonging the study duration to more accurately depict long-term conditions, incorporating other research factors to further the understanding of the relationship, and broadening the research scope to ensure the applicability of the findings.

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