

The Effect of Operational Efficiency and Liquidity on Profitability in Conventional Banks Listed on the Indonesia Stock Exchange

Wafi Nur Azizah

Faculty of Economics and Business, Universitas Swadaya Gunung Jati
wafi.122020238@ugj.ac.id

Ario Purdianto

Faculty of Economics and Business, Universitas Swadaya Gunung Jati
ario.purdianto@ugj.ac.id

Abstract

This study aims to analyze the effect of operational efficiency and liquidity on the profitability of conventional banks listed on the Indonesia Stock Exchange during the 2022–2024 period. This research employs a quantitative approach with an associative design using secondary data derived from annual financial reports. The sample consists of 26 conventional banks selected through purposive sampling, resulting in 76 observations after outlier testing. The variables analyzed include operational efficiency measured by BOPO, liquidity measured by LDR, and profitability measured by ROA. Data analysis is conducted using multiple linear regression with the assistance of SPSS version 25, supported by classical assumption tests and hypothesis testing. The results indicate that operational efficiency (BOPO) has a negative and significant effect on profitability (ROA), suggesting that higher operational costs reduce bank profitability. Liquidity (LDR) is found to have a positive and significant effect on profitability, indicating that effective credit distribution enhances bank earnings. Simultaneously, operational efficiency and liquidity significantly influence profitability, demonstrating their combined importance in determining financial performance. These findings highlight that efficient cost management and optimal liquidity levels are key factors in improving banking profitability.

Keywords: Operational Efficiency, Liquidity, Profitability, BOPO, LDR, ROA, Banking Sector

INTRODUCTION

The banking sector plays a highly strategic and indispensable role within the financial system through its intermediation function, liquidity management, and profitability generation, all of which significantly contribute to overall economic growth and financial stability (Rahmah et al., 2024). The effectiveness of these fundamental roles is largely determined by the bank's capability to manage its financial and operational resources in an efficient, productive, and sustainable manner over time. Operational efficiency becomes a critical aspect in maintaining financial performance stability because it is closely associated with cost control mechanisms and the optimization of revenue generation processes (Haryati et al., 2024). Therefore, banks are required to continuously improve their ability to maximize asset utilization in order to achieve optimal financial returns and long-term sustainability.

The development of the conventional banking industry in Indonesia has recently shown increasing pressure on profitability performance, reflecting growing challenges within the sector (Simamora, 2024b). These conditions are strongly influenced by macroeconomic dynamics, including fluctuations in interest rates, rising cost of funds, and changing financial market conditions. The decline in profitability indicators, particularly Return on Assets (ROA), indicates that banks are facing difficulties in maintaining operational efficiency and competitive advantage (Mayasari, 2024). Consequently, strengthening financial performance has become a critical concern in ensuring the resilience and stability of the banking industry.

Operational efficiency, which is commonly measured using the BOPO ratio, serves as an essential indicator in evaluating a bank's ability to control and manage its operational costs effectively (Simamora, 2024a). While certain banks have demonstrated strong efficiency performance, others continue to face increasing operational expenses driven by higher interest burdens and promotional costs. These variations reflect differences in managerial capabilities and strategic decision-making in managing banking operations (Octaviano, 2024). Such disparities ultimately have a direct impact on the bank's ability to generate sustainable profits and maintain financial performance.

In addition to operational efficiency, liquidity management represents another crucial factor in maintaining overall banking performance and financial stability (Haryati et al., 2024). Optimal liquidity conditions enable banks to distribute credit effectively while ensuring sufficient fund availability to meet short-term obligations. However, excessively loose liquidity conditions may indicate that banks are not fully optimizing their credit distribution potential, thereby limiting profitability (Rahmah et al., 2024). Therefore,

maintaining a balance between liquidity management and profitability objectives remains a key challenge in modern banking practices.

Previous studies have demonstrated mixed and inconclusive results regarding the relationship between operational efficiency and bank profitability, indicating the complexity of this relationship (Salsabila et al., 2023). Several empirical findings suggest that a higher BOPO ratio negatively affects ROA, implying that inefficiency in operational management reduces profitability. However, other studies have found that operational efficiency does not have a statistically significant impact on profitability, suggesting different contextual influences (Kurnia et al., 2024). These inconsistencies indicate that the relationship between efficiency and profitability requires further empirical validation.

Similarly, liquidity measured using the Loan to Deposit Ratio (LDR) has shown inconsistent effects on profitability across different studies and contexts (Rismanty & Suraya, 2023). Some studies argue that higher liquidity contributes positively to profitability because it reflects effective credit distribution and income generation. In contrast, other findings suggest that liquidity does not significantly influence profitability, indicating potential inefficiencies in fund allocation (Muhammad et al., 2024). These variations highlight the need for further investigation into the role of liquidity in banking performance.

The inconsistency of findings in previous studies highlights a significant research gap that necessitates further and more comprehensive investigation (Salsabila et al., 2023). In addition, many prior studies tend to focus on Islamic banks or limited samples involving a single banking institution, which restricts the generalizability of the findings. Differences in research objects and the lack of updated observation periods reduce the ability of previous studies to accurately explain current banking conditions (Muhammad et al., 2024). Therefore, a more comprehensive study focusing on conventional banks with recent data is required to address these limitations.

This study aims to analyze the effect of operational efficiency and liquidity on the profitability of conventional banks listed on the Indonesia Stock Exchange during the 2022–2024 period (Kurnia et al., 2024). The analysis is expected to provide deeper empirical insights into the key determinants of banking financial performance in a contemporary context. Furthermore, the findings are intended to serve as both academic references and practical guidance for stakeholders in the banking sector (Rismanty & Suraya, 2023). Thus, this study contributes to the development of financial and banking literature by offering updated and relevant empirical evidence.

LITERATURE REVIEW

Operational Efficiency

Operational efficiency refers to a bank's ability to manage its resources effectively to generate maximum output while maintaining service quality (Ariyandi & Purwanti, 2025). In the banking industry, efficiency is essential because operational activities involve significant costs, including labor, technology, and administrative expenses. Inefficient cost management can reduce profitability and weaken financial performance, making efficiency a critical factor in sustaining competitiveness (Rahmah et al., 2024). Therefore, banks must continuously improve cost control mechanisms to maintain operational stability. Efficient resource allocation enables banks to optimize revenue generation from available assets.

Operational efficiency is theoretically grounded in modern efficiency perspectives that emphasize optimal input-output relationships in financial institutions (Kurnia et al., 2024). This concept highlights that banks are considered efficient when they can produce higher outputs using minimal inputs or maintain outputs with reduced costs. In practice, operational costs serve as inputs, while revenues represent outputs in evaluating banking efficiency (Salsabila et al., 2023). The effectiveness of this relationship reflects the managerial capability in utilizing financial resources. Consequently, efficiency becomes a key determinant of financial performance and sustainability.

Operational efficiency in banking is commonly measured using the Operating Expenses to Operating Income ratio (BOPO) (Chairunisa & Isyanto, 2025). This ratio indicates how effectively a bank controls its operational costs relative to the income generated. A lower BOPO reflects better efficiency, whereas a higher ratio indicates inefficiency and potential financial strain (Kusumaningrum & Maika, 2024). High operational costs can significantly reduce profit margins and overall financial performance. Therefore, maintaining an optimal BOPO level is essential for improving profitability and strengthening competitiveness.

Liquidity

Liquidity refers to a bank's ability to fulfill its short-term financial obligations without disrupting its operational activities (Inrawan, 2024). Adequate liquidity is crucial for maintaining public confidence and ensuring the stability of the financial system. Banks that fail to maintain sufficient liquidity may face financial distress and operational disruptions (Haryati et al., 2024). Therefore, effective liquidity management is necessary to ensure sustainability and resilience in banking operations. Maintaining an optimal liquidity level also supports the smooth functioning of financial intermediation.

Liquidity management is closely related to modern financial theories that emphasize the balance between risk and return in banking operations (Rismanty & Suraya, 2023). Banks must carefully allocate their funds between liquid assets and lending activities to maintain stability and profitability. An appropriate balance ensures that banks can meet withdrawal demands while still generating income from credit

distribution (Muhammad et al., 2024). Poor liquidity management may lead to either excessive risk or missed revenue opportunities. Thus, strategic liquidity planning is essential in banking performance management.

Liquidity in banking is commonly measured using the Loan to Deposit Ratio (LDR) (Hamdani et al., 2025). This ratio indicates the proportion of funds allocated to loans relative to deposits collected from customers. A high LDR may increase liquidity risk, while a low LDR suggests inefficient utilization of available funds (Bhaktiar & Nova, 2024). Both extremes can negatively affect a bank's financial performance and stability. Therefore, maintaining an optimal LDR range is essential to balance risk and profitability.

Profitability

Profitability is a financial indicator that reflects a bank's ability to generate earnings from its operational activities over a specific period (Inrawan, 2024). It serves as a key measure of how effectively management utilizes resources to achieve financial objectives. High profitability indicates strong financial performance and efficient resource utilization (Kurnia et al., 2024). Conversely, low profitability may signal inefficiencies in cost management and asset utilization. Therefore, profitability is essential in evaluating the overall success of banking operations.

The concept of profitability is closely linked to modern financial performance theories that emphasize value creation and efficiency (Rahmah et al., 2024). Banks are expected to maximize profits while maintaining financial stability and managing risks effectively. Profit generation depends not only on revenue but also on the ability to control costs and optimize asset usage (Salsabila et al., 2023). Efficient management practices contribute significantly to improved profitability. Thus, profitability reflects both operational and strategic effectiveness.

Profitability in banking is commonly measured using Return on Assets (ROA) (Hamdani et al., 2025). ROA evaluates how efficiently a bank utilizes its assets to generate net income. A higher ROA indicates better financial performance and effective asset management (Rismanty & Suraya, 2023). Conversely, a lower ROA reflects inefficiencies in utilizing resources to generate profits. Therefore, ROA is widely used as a primary indicator of banking performance and sustainability.

Research Hypotheses

The hypotheses in this study are developed based on theoretical and empirical evidence regarding the role of operational efficiency and liquidity in determining bank profitability. Operational efficiency, measured by BOPO, reflects the bank's ability to control costs, while liquidity, proxied by LDR, indicates the effectiveness of fund allocation. Both variables are considered important factors influencing Return on Assets (ROA) as an indicator of profitability. Therefore, this study examines the partial and simultaneous effects of operational efficiency and liquidity on the profitability of conventional banks listed on the Indonesia Stock Exchange during the 2022–2024 period.

H1: Operational efficiency (BOPO) has a negative and significant effect on profitability (ROA) of conventional banks listed on the Indonesia Stock Exchange during the 2022–2024 period.

H2: Liquidity (LDR) has a positive and significant effect on profitability (ROA) of conventional banks listed on the Indonesia Stock Exchange during the 2022–2024 period.

H3: Operational efficiency (BOPO) and liquidity (LDR) simultaneously have a significant effect on profitability (ROA) of conventional banks listed on the Indonesia Stock Exchange during the 2022–2024 period.

METHODOLOGY OF RESEARCH

This study employs a quantitative approach with an associative research design to examine the relationship between variables (Abubakar, 2021). The research focuses on analyzing the effect of operational efficiency (BOPO) and liquidity (LDR) on profitability (ROA) both partially and simultaneously. A quantitative approach is considered appropriate as it allows for objective measurement and statistical testing of relationships among variables (Ghozali, 2021). The variables in this study consist of independent variables, namely operational efficiency and liquidity, and the dependent variable, which is profitability. Each variable is operationalized using financial ratios, where BOPO measures efficiency, LDR measures liquidity, and ROA measures profitability.

The population of this study consists of all conventional banks listed on the Indonesia Stock Exchange during the 2022–2024 period, totaling 43 banks (Bursa Efek Indonesia, 2024). The sampling technique used is purposive sampling based on predetermined criteria, resulting in 26 banks as the final sample. This method ensures that only banks with complete financial reports and consistent performance are included in the analysis (Sugiyono, 2022). With a three-year observation period, the total number of research observations is 78 data points. This sample selection is expected to provide representative and reliable results for analysis.

This study utilizes secondary data obtained from annual financial reports published by conventional banks (Sulung & Muspawi, 2024). The data are collected through a documentation method by reviewing financial statements and recording relevant financial components. The use of secondary data ensures efficiency and reliability, as the data have been officially published and audited (Lintang et al., 2024). The data include total assets, pre-tax income, operational income and expenses, total loans, and third-party funds. These data are then processed to calculate the financial ratios used in the study.

The data analysis technique applied in this study is multiple linear regression analysis using SPSS version 25 (Ghozali, 2021). Prior to regression analysis, classical assumption tests are conducted, including

normality, multicollinearity, heteroscedasticity, and autocorrelation tests. These tests are essential to ensure that the regression model meets statistical assumptions and produces unbiased estimates (Indartini & Mutmainah, 2024). Hypothesis testing is conducted using t-tests for partial effects and F-tests for simultaneous effects. Additionally, the coefficient of determination (R^2) is used to measure the explanatory power of the independent variables on profitability.

RESULT AND DISCUSSION

This study examines conventional banks listed on the Indonesia Stock Exchange during the 2022–2024 period using secondary data obtained from annual financial reports published by the Exchange and respective banks. The sample was determined using purposive sampling, resulting in 26 banks with a total of 78 observations over three years. The variables analyzed include operational efficiency measured by BOPO, liquidity measured by LDR, and profitability measured by ROA. The data were processed and analyzed using SPSS version 25 to generate descriptive statistics and to test the effect of operational efficiency and liquidity on profitability. The results are presented systematically, starting from descriptive analysis to hypothesis testing and the coefficient of determination.

Descriptive Analysis

Descriptive analysis is used to provide an overview of the research data based on the observed sample. This analysis presents key statistical measures, including minimum, maximum, mean, and standard deviation values for each variable. Through this approach, the general characteristics and distribution patterns of operational efficiency, liquidity, and profitability can be clearly understood.

Table 1. Descriptive Analysis Results

	N	Minimum	Maximum	Mean	Std. Deviation
BOPO (X1)	78	39.97	100.00	78.1221	16.01736
LDR (X2)	78	20.45	483.70	88.0986	59.83687
ROA (Y)	78	.04	4.73	1.6437	1.34752

Source: Processed data (2026)

Based on Table 1, BOPO results were obtained with a minimum value of 39.97 and a maximum of 100.00. The average value of 78.12 indicates a fairly good level of operational efficiency, with a standard deviation of 16.01 which indicates a considerable variation in data. Meanwhile, the LDR results obtained a minimum value of 20.45 and a maximum of 483.70. The average score of 88.09 indicates a fairly good credit disbursement ability, while the standard deviation of 59.83 indicates a high variation in data, and the ROA results obtained a minimum score of 0.04 and a maximum of 4.73. The average value of 1.64 indicates a relatively low to moderate level of profitability, with a standard deviation of 1.34 indicating quite diverse data variations.

Classic Assumption Test

Before conducting hypothesis testing, it is essential to ensure that the research model meets validity requirements through preliminary testing, including outlier detection. The outlier test is used to identify extreme or deviating data points that may distort the results and reduce the accuracy of the analysis. Initially, the study consisted of 78 observations; however, early examination indicated that the data were not normally distributed, suggesting the presence of extreme values. After performing the outlier test, two observations were identified as outliers and excluded from further analysis. Therefore, the final sample used in this study consists of 76 observations.

Normality Test

The normality test is conducted to determine whether the research data are normally distributed. This test is essential to ensure that the regression model satisfies one of the classical assumption requirements for producing reliable statistical results.

Table 2. Normality Test Results

N		76
Normal Parameters ^{a,b}	Mean	.0000000
	Std. Deviation	.76347345
Most Extreme Differences	Absolute	.099
	Positive	.067
	Negative	-.099
Test Statistic		.099
Asymp. Sig. (2-tailed)		.064 ^c

Source: Processed data (2026)

Based on Table 2, normality testing was carried out using the Kolmogorov-Smirnov One-Sample which showed an Asymp Sig. (2-tailed) value of 0.064, this value > 0.05 , which can be declared to be normally distributed residual. Thus the regression model meets the assumption of normality and is suitable for further regression.

Multilinearity Test

The multicollinearity test is conducted to determine whether there is a strong linear correlation among the independent variables in the regression model. In this study, multicollinearity is assessed using tolerance and Variance Inflation Factor (VIF) values to ensure the model is free from multicollinearity issues.

Table 3. Multicollinearity Test Results

Variable	Tolerance	VIF
BOPO (X1)	1.000	1.000
LDR (X2)	1.000	1.000

Source: Processed data (2026)

Based on Table 3, the BOPO and LDR variables have a Tolerance of 1,000 > 0.10, and VIF of 1,000 < 10. These findings suggest that there is no strong correlation between independent variables in the regression model. Therefore, it can be concluded that there are no symptoms of multicollinearity, so that it has met classical assumptions and is suitable for use in subsequent analysis.

Heteroscedasticity Test

The heteroscedasticity test is conducted to determine whether there is unequal variance of residuals across observations in the regression model. In this study, the test is performed using the Glejser method, where a significance value greater than 0.05 indicates the absence of heteroscedasticity.

Table 4. Heteroscedasticity Test Results

Variable	Sig.
BOPO (X1)	.107
LDR (X2)	.261

Source: Processed data (2026)

In the early stages of the Heteroscedasticity test using the Glejser test, it was found that the BOPO had a significance value of 0.045 which < 0.05 indicating the presence of heteroscedasticity symptoms and the LDR variable had a significance value of 0.467 which > 0.05 so that there were no symptoms of heteroscedasticity. To overcome this and improve the stability of the model, data transformation was carried out using the Natural Logarithm (LN). Judging from table 8, the BOPO variable has a significance value of 0.107, while the LDR variable has a significance value of 0.261. Both significance values > 0.05, which identifies the absence of symptoms of heteroscedasticity in the regression model, thus the model has satisfied classical assumptions and is worthy of further analysis.

Autocorrelation Test

The autocorrelation test is conducted to determine whether there is a correlation between residuals across observations in the regression model. In this study, the Durbin-Watson test is used, where values within the acceptable range indicate that no autocorrelation problem exists.

Table 5. Autocorrelation Test Results

Model	Durbin-Watson
Before the Corhrane-Orcutt Method	1.229
Corhrane-Orcutt method	1.646

Source: Processed data (2026)

Based on Table 5, a dW value of 1.229 is obtained. With the sum of 76 observational data and 2 independent variables, the critical limit of dW can be estimated using dL of 1.57 and dU of 1.68, since the dW value is 1.229 < dL and dU, so it can be concluded that there is an autocorrelation in the residual. In overcoming the problem of autocorrelations, a transformation was carried out using the Cochrane-Orcutt method, which is a common method to improve autocorrelation. After the transformation, a dW value of 1.646 is obtained that is between the dU limit and 4 – dU (1.68 < 1.646 < 2.31), so that it can be concluded that there is no autocorrelation in the residual. Therefore, classical assumptions related to residual independence have been fulfilled and regression models are suitable for use in future analysis.

Multiple Linear Regression Equations

Multiple linear regression analysis is used to examine the effect of operational efficiency (BOPO) and liquidity (LDR) on profitability (ROA). This model estimates the relationship between independent variables and the dependent variable through the following regression equation.

Table 6. Multiple Linear Regression Analysis Results

Variable	Unstandardized Coefficients	
	B	Std. error
(Constant)	1.453	.353
BOPO (X1)	-.044	.006
LDR (X2)	.014	.004

Source: Processed data (2026)

Based on Table 6, the regression equation formed, namely:

$$Y = 1453 - 0044 x_1 + 0014x_2$$

The constant value obtained is 1.453, so it can be concluded that if the independent variable is 0 (constant) then the dependent variable is worth 1.453. The value of the regression coefficient of variable X1 (BOPO) is negative of -0.044, so it can be concluded that if the variable X1 increases, then the variable Y will decrease. This shows that if the value of BOPO increases, profitability decreases so that it has an indirect relationship. The value of the regression coefficient of variable X2 (LDR) has a positive value of 0.014, so it can be concluded that if variable X2 increases, then variable Y will increase. This illustrates that if the LDR increases, profitability will also increase, which indicates a one-way relationship.

Hypothesis Testing

The t-test is used to examine the partial effect of each independent variable on the dependent variable. In this study, the t-test determines whether operational efficiency (BOPO) and liquidity (LDR) individually have a significant effect on profitability (ROA) based on the significance value and t-statistic.

Table 7. T Test Results

Variable	t	Sig.
BOPO (X1)	-6.805	.000
LDR (X2)	3.432	.001

Source: Processed data (2026)

Based on Table 7 and the t table value obtained 1.993, the Variable BOPO has a tcal value of -6.805 with a significance value of 0.000. Because the -tcal > -ttable (-6,805 > -1,993) and the Sig. value < 0.05 → BOPO have a negative and significant effect on ROA. These results show that H1 which states that Operational Efficiency (BOPO) has a negative effect on the profitability (ROA) of conventional banks listed on the Indonesia Stock Exchange for the 2022-2024 period is acceptable. The LDR variable has a tcal value of 3.432 with a significance value of 0.001. Because the tcal > ttable (3.432 > 1.993) and the Sig. < value of 0.05 → LDR have a positive and significant effect on ROA. The results of the study answered H2 that Liquidity (LDR) has a positive effect on the profitability (ROA) of conventional banks listed on the Indonesian Securities Exchange for the 2022-2024 period is acceptable.

The F-test is used to examine the simultaneous effect of all independent variables on the dependent variable. In this study, the F-test determines whether operational efficiency (BOPO) and liquidity (LDR) together have a significant effect on profitability (ROA) based on the F-statistic and significance value.

Table 8. F Test Results

Model	F	Sig.
Regression	25.833	.000 ^b

Source: Processed data (2026)

Based on Table 8, the F-count value is 25.833 with a significance level of 0.000, and the F-table value is 3.12. Since F-count > F-table (25.833 > 3.12) and the Sig. value < 0.05, it can be concluded that BOPO and LDR simultaneously have a significant effect on ROA. This finding confirms that both independent variables are simultaneously able to predict the dependent variable, thus accepting H3 that simultaneously independent variables jointly influence the dependent variable.

Coefficient of Determination (R²)

The coefficient of determination (R²) is used to measure the extent to which the independent variables explain the variation in the dependent variable. In this study, R² indicates how much operational efficiency (BOPO) and liquidity (LDR) contribute to explaining changes in profitability (ROA).

Table 9. Determination Coefficient Test Results

Model	Adjusted R Square
1	.402

Source: Processed data (2026)

Based on Table 9, the Adjusted R Square value of 0.40 was obtained. These findings show that 40% of the variation in ROA (Y) can be explained simultaneously by the variables BOPO (X1) and LDR (X2), while the remaining 60% is influenced by other factors outside the research model. This means that this model has sufficient predictive power related to profitability variation (ROA).

Effect of Operational Efficiency (BOPO) on Profitability (ROA)

The empirical findings reveal that operational efficiency (BOPO) has a negative and statistically significant effect on profitability (ROA). This indicates that an increase in BOPO is associated with a decline in the profitability of conventional banks. A higher BOPO ratio reflects a larger proportion of operational costs relative to income, which ultimately suppresses profit generation. This condition shows that inefficiency in cost management directly reduces the bank's financial performance. Therefore, the proposed hypothesis regarding the negative influence of BOPO on ROA is supported.

This outcome can be interpreted as evidence that cost inefficiency weakens the bank's ability to maximize returns from its assets. When operational expenses are not effectively controlled, the margin between revenue and cost becomes narrower, leading to lower profitability. In addition, high operational costs may signal inefficiencies in internal processes and resource utilization. As a result, banks are unable to optimize their income-generating potential despite having sufficient assets. These findings are in line with

prior studies (Chairunisa & Isyanto, 2025), (Astuti, 2022), and (Sinaga et al., 2025), which consistently report a negative and significant relationship between BOPO and ROA.

Effect of Liquidity (LDR) on Profitability (ROA)

The analysis demonstrates that liquidity (LDR) has a positive and statistically significant effect on profitability (ROA). This suggests that higher levels of credit distribution relative to collected funds contribute to increased profitability in conventional banks. A higher LDR indicates that a larger portion of deposits is allocated to lending activities, which are the primary source of interest income. This condition enables banks to enhance their earnings through more productive use of funds. Accordingly, the hypothesis stating that LDR positively affects ROA is accepted.

This result reflects the importance of effective fund allocation in improving financial performance. When banks are able to channel funds into productive loans, they generate higher returns that contribute to profitability. However, this relationship requires careful management to avoid excessive risk exposure. Efficient lending practices indicate strong financial control and strategic decision-making. These findings are supported by previous research (Hermawati & Windiarti, 2025), (Amir et al., 2022), and (Fauzany et al., 2021), which also confirm a positive and significant effect of LDR on ROA.

Effect of Operational Efficiency (BOPO) and Liquidity (LDR) on Profitability (ROA)

The results further indicate that operational efficiency (BOPO) and liquidity (LDR) simultaneously have a significant effect on profitability (ROA). This implies that both cost efficiency and fund allocation jointly determine the financial performance of conventional banks. Banks that successfully manage operational costs while optimizing lending activities are more likely to achieve higher profitability. The combined effect of these variables highlights the importance of integrated financial management. Thus, the hypothesis regarding the simultaneous influence of BOPO and LDR on ROA is supported.

This finding suggests that profitability is influenced by the interaction between efficiency and liquidity management rather than a single factor. When operational costs are controlled and funds are effectively utilized, banks can improve both revenue generation and cost efficiency. A balanced approach between these two aspects creates a more sustainable financial structure. Conversely, weaknesses in one aspect may reduce the overall performance outcome. These results are consistent with previous studies (Fiyani et al., 2024), (Sulistiana & Geriadi, 2024), and (Masruro et al., 2022), which also demonstrate that BOPO and LDR jointly affect ROA.

CONCLUSIONS

This study aims to analyze the effect of operational efficiency (BOPO) and liquidity (LDR) on the profitability (ROA) of conventional banks listed on the Indonesia Stock Exchange during the 2022–2024 period. The research focuses on examining both partial and simultaneous relationships between the independent variables and profitability. By utilizing financial ratio analysis, this study seeks to provide empirical evidence regarding key determinants of banking performance. The findings are expected to contribute to the development of financial management practices in the banking sector.

The results indicate that operational efficiency (BOPO) has a negative and significant effect on profitability (ROA), meaning that higher operational costs relative to income lead to lower profitability. This finding confirms that efficient cost management plays a crucial role in enhancing bank performance. Liquidity (LDR) is found to have a positive and significant effect on profitability, suggesting that effective fund allocation through lending activities contributes to increased earnings. Furthermore, operational efficiency and liquidity simultaneously have a significant effect on profitability, indicating that both variables collectively influence bank performance. These results highlight that operational efficiency is the more dominant factor in determining profitability compared to liquidity.

Based on the findings, banking institutions are encouraged to improve operational efficiency by optimizing cost management and enhancing productivity to increase profitability. Banks should also maintain an optimal level of liquidity by effectively managing loan distribution and deposit funds to maximize income while minimizing risk. Management strategies should focus on balancing efficiency and liquidity to achieve sustainable financial performance. For future research, it is recommended to include additional variables such as capital adequacy, credit risk, or macroeconomic factors to provide a more comprehensive analysis. Expanding the research period and using different methodological approaches may also enhance the robustness of future findings.

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