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The Effect of Fee-Based Income and Operating Expenses on the Financial Performance of Banks Listed on the Indonesia Stock Exchange for the 2022-2025 Period

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Abstract: Rapid digitalization has encouraged banks to rely not only on interest income but also on revenue generated from services, commonly referred to as fee-based income. At the same time, rising operating costs, as measured by the BOPO ratio, may lead to a decline in how efficiently banks operate. Given the inconsistent findings of previous studies, this research examines whether fee-based income and operating expenses affect the financial performance for lenders registered on the IDX throughout the four-year span from 2022 to 2025. This research adopts a quantitative approach, drawing on secondary data taken from annual reports. Sixteen of the 47 banks listed on the IDX were selected through purposive sampling based on predetermined criteria, producing 64 observations for the 2022–2025 period. Fee-based income is measured using the non-interest operating income ratio, operating expenses using BOPO, and financial performance, which is proxied by Return on Assets (ROA). The data were first subjected to classical assumption tests (normality, multicollinearity, heteroscedasticity, and autocorrelation) before being analyzed with multiple linear regression. The results indicate that fee-based income has a significant positive association with ROA ($t = 2.023$; $p = 0.047$), whereas operating expenses exerts a significant adverse effect on ROA ($t = -5.156$; $p < 0.001$). Both variables are also jointly significant ($F = 24.609$; $p < 0.001$). The independent variables jointly explain 42.8% of the fluctuation in ROA, as shown by the adjusted R^2 value of 0.428. These findings suggest that bank managers should expand service-based revenue while maintaining operating-cost efficiency to support profitability. The study also contributes to financial accounting research and investment decision-making.

Keywords: *Fee-Based Income, Operating Expenses, Financial Performance.*

A. INTRODUCTION

Banks serve as a vital engine of economic growth, gathering funds from the public and redirecting them into productive economic activity. Advances in digital technology have encouraged banks to broaden their fee-based services so that they depend less on interest income as their main source of revenue. According to Bank Indonesia (2023), digital banking transactions grew by 28.72% in 2022, reaching a total value of IDR 52,545.8 trillion. This development creates opportunities for banks to generate additional revenue through digital services.

Fee-based income and operating-cost efficiency play important roles in managing banks' financial performance because they relate to revenue diversification and expense control (Pohan et al., 2021). Banks can increase revenue through service fees, while controlling operating expenses helps ensure efficient business operations (Putri & Pristiana, 2025). To gauge financial performance, the study relies on ROA; to assess how well operating costs are controlled, it uses the Operating Expenses to Operating Income (BOPO) ratio.

Agency Theory, formulated by Jensen and Meckling (1976), explains the relationship between owners and management in the stewardship of company resources. Management decisions to maximize revenue and control costs form part of efforts to achieve corporate objectives. However, previous findings on these relationships have been inconsistent. Ade

Gunawan et al. (2025) identified an effect of fee-based income on financial performance, whereas Sopian and Pramiudi (2021) found no significant effect. Irwanto et al. (2024) reported that operating expenses affected financial performance, in contrast to Alimaulani et al. (2025), who found an insignificant result.

The mixed results across earlier studies point to a need for additional empirical testing. This study examines whether fee-based income and operating expenses affect the financial results of IDX-listed banks across 2022–2025. The findings are expected to provide additional empirical evidence and inform management decisions concerning effective revenue and operating-cost management.

B. LITERATURE REVIEW

1. Financial Accounting

Financial accounting is the area of accounting whose output, namely financial statements, serves users beyond the company's management. These statements provide useful information for investors and creditors (Kieso et al., 2020).

2. Agency Theory

Agency Theory positions management as the agent authorized by shareholders, as principals, to manage the company and increase its value. Jensen and Meckling (1976) explain that agency relationships may create conflicts of interest, while Eisenhardt (1989) relates agency problems to divergent interests, limited information, and differing attitudes toward risk.

This theory is relevant to banking because management is responsible for managing revenue and operating expenses. Efforts to increase revenue through banking services are reflected in fee-based income, while expenses that must be controlled to improve efficiency are reflected in operating expenses. When managed effectively, these two aspects are expected to improve profitability and banks' financial performance (Handayani et al., 2024).

This study adopts Agency Theory as its theoretical foundation for examining the effects of fee-based income and operating expenses on the financial performance among banks that are publicly traded on the Indonesia Stock Exchange. Whether corporate objectives are achieved depends substantially on management's decisions regarding revenue and cost management.

3. Financial Performance

Financial performance describes the extent to which a company can manage its financial resources to achieve its objectives (Azmi & Takarini, 2022). Financial-statement analysis can be used to assess a company's condition and development (Rahayu et al., 2023). This study measures financial performance using Return on Assets (ROA), the ratio of profit to total assets, which indicates how effectively a company's assets generate earnings.(Azmi & Takarini, 2022)

4. Fee-Based Income

Banks earn fee-based income from services provided outside interest-generating activities (Abimanyu et al., 2025). This income can increase profitability and diversify a bank's revenue base. Under the Agency Theory of Jensen and Meckling (1976), management is responsible for using company resources effectively to optimize financial performance. e-based income rises, it is. A larger share of income from fees and commissions is therefore expected to have a positive effect on ROA. However, previous evidence is mixed. Ade Gunawan et al. (2025) observed that fee-based income affects how well a bank performs

financially, whereas Sopian and Pramiudi (2021) found no significant effect.
H1: Fee-based income affects financial performance.

5. Operating Expenses

Operating expenses are costs incurred by a company to conduct its operational activities (Harahap & Sinurat, 2022). In accordance with Agency Theory (Jensen & Meckling, 1976), management must control costs effectively to maintain efficiency and optimize financial performance. Profit can be sustained and ROA improved when operating expenses are managed appropriately (Setyaningsih et al., 2023). Previous findings remain inconsistent. Tamalero and Kotte (2025) and Irwanto et al. (2024) found that operating expenses affected financial performance, whereas Alimaulani et al. (2025) reported no significant effect.
H2: Operating expenses affect financial performance.

C. METHOD

This quantitative study selected banking companies using purposive sampling. The stated criteria were that companies have been continuously listed on the IDX from 2022 to 2025 and have not been listed consecutively on the IDX Main Board. Secondary data obtained from the IDX were analyzed using multiple linear regression. The analytical procedures comprised descriptive statistics, the classical assumption tests (normality, multicollinearity, heteroscedasticity, and autocorrelation), and hypothesis testing through t-tests, an F-test, and the coefficient of determination to test the hypotheses.

Table 1. Operationalization of Variables and Data Sources

Variable	Measurement	Data Source
Fee-Based Income *(X1)*	$\text{FBI}=\frac{\text{Non-interest operating income}}{\text{Operating Income}}\times 100\%$	Financial Statements
Operating Expenses *(X2)*	$\text{BOPO}=\frac{\text{Operating costs}}{\text{Operating Income}}\times 100\%$	Financial Statements
Financial Performance (Y)	$\text{ROA}=\frac{\text{Net profit}}{\text{Total Ast}}\times 100\%$	Financial Statements

D. RESULT AND DISCUSSION

Table 2. Overview of the Research Data

Descriptive Statistics					
	N	**Minimum**	**Maximum**	**Mean**	Std. Deviation
Fee-Based Income	64	.072	.378	.18140	.069719
Operating Expenses	64	.279	.892	.57945	.180978
Financial Performance	64	.001	.038	.01640	.008506
Valid N (listwise)	64				

Source: Researchers' data processing using SPSS (2026)

Table 2 shows that the mean fee-based income ratio was 18.14%, with variation across observations. Operating expenses averaged 57.95%, indicating the proportion of operating income accounted for by operating costs. Financial performance had a mean value of 1.64%, also varying across observations. Thus, the values of all three variables differed across the 64 observations analyzed.

Table 3. Residual Normality Test

One-Sample Kolmogorov–Smirnov Test			
			Unstandardized Residual
N			64
Normal Parametersa,b	Mean		.0000000
	Std. Deviation		.00632809
Most Extreme Differences	Absolute		.109
	Positive		.078
	Negative		-.109
Test Statistic			.109
Asymp. Sig. (2-tailed)c			.057
Monte Carlo Sig. (2-tailed)e	Sig.		.058
	99% Confidence Interval	Lower Bound	.052
		Upper Bound	.063

Source: Researchers' data processing using SPSS (2026)

The regression-model residuals were normally distributed. Table 3 reports an Asymp. Sig. (2-tailed) value of 0.057, with a Monte Carlo significance of 0.058; since both exceed 0.05, the data are considered normally distributed.

Table 4. Multicollinearity Test

Coefficients[a]			
Model		Collinearity Statistics	
		Tolerance	VIF
1	Fee-Based Income	.809	1.237
	Operating Expenses	.809	1.237

Source: Researchers' data processing using SPSS (2026)

The tolerance value for each independent variable in Table 4 was 0.809, exceeding 0.1, while the Variance Inflation Factor (VIF) was 1.237, below 10. Accordingly, the model showed no evidence of multicollinearity.

Table 5. Heteroscedasticity Test

Coefficients[a]						
Model		**Unstandardized Coefficients**		**Standardized Coefficients**	**t**	Sig.
		B	Std. Error	Beta		
1	(Constant)	.007	.003		2.503	.015
	Fee-Based Income	.007	.008	.123	.910	.366
	Operating Expenses	-.005	.003	-.245	-1.815	.074

Source: Researchers' data processing using SPSS (2026)

According to Table 5, none of the independent variables reaches a significance value at or below 0.05. The residual variance was therefore considered homogeneous, indicating no evidence of heteroscedasticity.

Table 6. Autocorrelation Test (Runs Test)

Runs Test	
	Unstandardized Residual
Test Valuea	.00034
Cases < Test Value	32
Cases >= Test Value	32
Total Cases	64
Number of Runs	37
Z	1.008
Asymp. Sig. (2-tailed)	.313

Source: Researchers' data processing using SPSS (2026)

The regression model showed no evidence of autocorrelation because the Runs Test output, specifically its two-tailed asymptotic significance value was 0.313, exceeding 0.05.

Table 7. Multiple Regression Model Estimates

Coefficients[a]						
Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	.027	.005		5.877	<.001
	Fee-Based Income	.026	.013	.214	2.023	.047
	Operating Expenses	-.026	.005	-.546	-5.156	<.001

Source: Researchers' data processing using SPSS (2026)

Based on the coefficients reported in Table 7, the regression equation is as follows: $Y = 0.027 + 0.026X_1 - 0.026X_2 + e$. Financial performance (Y) is estimated at 0.027, the constant, when fee-based income (X_1) and operating expenses (X_2) are zero. Fee-based income (X_1) has a coefficient of 0.026. Holding the other variable constant, financial performance rises by 0.026 units whenever there is a one-unit gain in fee-based income. The positive coefficient indicates a direct relationship. Operating expenses (X_2) has a coefficient of −0.026. Holding the other variable constant, financial performance declines by 0.026 units with every one-unit rise in operating expenses. The negative coefficient indicates an inverse relationship.

Table 8. Coefficient of Determination (R^2)

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.668[a]	.447	.428	.006431

Source: Researchers' data processing using SPSS (2026)

The R^2 value reported in Table 8 is 0.447. Fee-based income and operating expenses clarify 44.7% of the fluctuation in financial performance, leaving 55.3% to be determined by external factors.

Table 9. Partial Hypothesis Tests (t-tests)

Coefficients[a]						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.027	.005		5.877	<.001
	Fee-Based Income	.026	.013	.214	2.023	.047
	Operating Expenses	-.026	.005	-.546	-5.156	<.001

Source: Researchers' data processing using SPSS (2026)

Fee-based income has a t-value of 2.023 with a significance level of 0.047, falling under the 0.05 threshold (Table 9). H1 is therefore accepted, showing that fee-based income significantly and positively influences financial performance. Operating expenses have a t-value of −5.156 with a significance level under 0.001, which is likewise smaller than 0.05. H2 is therefore accepted, indicating a significant negative effect of operating expenses on financial performance.

Table 10. Simultaneous Effect Test (F-test)

ANOVA[a]						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.002	2	.001	24.609	<.001[b]
	Residual	.003	61	.000		
	Total	.005	63			

Source: Researchers' data processing using SPSS (2026)

Table 10 reports an F-statistic of 24.609 with a significance level under 0.001, whereas the critical F-value from the table is 3.15. Since the calculated F-statistic exceeds the tabled value and the significance level is below 0.05, fee-based income and operating expenses jointly affect financial performance.

The analysis shows that higher fee-based income significantly improves financial performance, which is measured by Return on Assets (ROA). Banks with growing service

revenue tend to be better able to generate profit from their assets. This finding supports Agency Theory, which requires management to use company resources efficiently and appropriately in the interests of the owners. Additional non-interest revenue can be generated by developing services such as administration fees, transfer fees, and other transaction services. Such revenue can support earnings and reduce a bank's dependence on lending alone. Management may therefore treat the optimization of fee-based income as a strategy to improve asset utilization and financial performance.

The regression coefficient for fee-based income was positive, with a t-value of 2.023 and a significance level of 0.047, which falls under 0.05. ROA tended to increase as fee-based income increased; thus, the research hypothesis was accepted. Service-based revenue contributed to bank profitability by providing additional income from operating activities. This positive relationship does not guarantee that ROA will increase at every bank, because financial performance is also affected by operating expenses, asset quality, and other factors. The finding is consistent with Gunawan et al. (2025), who identified an effect of fee-based income on financial performance. Different results were reported by Alimaulani et al. (2025) and Sopian and Pramiudi (2021), who found no such effect. These differences suggest that the contribution of service revenue to financial performance depends on each bank's operating conditions and its ability to manage revenue and assets.

Operating expenses exert a significant adverse influence on financial performance, which is captured by ROA. A rise in the BOPO ratio was associated with lower profit generated from a bank's assets. This result is also consistent with Agency Theory, as owners expect management to operate the company efficiently and use resources prudently. High operating expenses relative to operating income indicate lower operational efficiency. Profit may decline when a large proportion of operating income is consumed by operating costs. This reduction in profit, in turn, puts downward pressure on ROA, which indicates how productively a company's assets generate earnings. Controlling operating expenses is therefore important for efficient asset management and stronger bank financial performance.

The regression coefficient for operating expenses was negative, with a t-value of −5.156 and a significance level under 0.05. ROA tended to decline as the BOPO ratio increased; therefore, the research hypothesis was acceptedRunning operations efficiently is central to sustaining bank profitability. As operating expenses rise relative to operating income, less revenue remains available as profit. Effective cost control, by contrast, helps banks maintain profitability and maximize asset utilization. This finding is consistent with Fadila et al. (2025), Irwanto et al. (2024), and Desky (2021), who reported an effect of operating expenses on financial performance. Ahzar (2023) and Alimaulani et al. (2025), however, found no such effect. These differences indicate that the link between operating costs and a bank's profitability may hinge on operational efficiency, revenue-generating capacity, and each bank's business conditions.

E. CONCLUSION

Financial performance, as captured through Return on Assets (ROA), proved to increase significantly with fee-based income and decrease significantly with operating expenses. The research questions are addressed by the finding that banks' financial performance depends on their ability to generate service-based revenue and manage operating costs efficiently. The results also reinforce Agency Theory, which emphasizes management's responsibility to put the organization's resources to productive use while safeguarding the owners' interests.

In practical terms, bank management should prioritize increasing fee-based income by developing banking services while controlling operating expenses so that revenue

contributes optimally to profit. This study is limited by its use of only two independent variables and the 2022–2025 observation period; other factors that may affect financial performance were not included. Future research can broaden the model with further internal and external determinants, cover a longer timeframe, and take samples from other sectors or groups of banks to obtain more comprehensive and broadly generalizable findings.

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