

Operating Cost and Revenue Budgets and Financial Performance at PT PLN (Persero)

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Abstract: This study examined the effect of operating cost budgets and revenue budgets on the financial performance of PT Perusahaan Listrik Negara (Persero) Unit Tanjung Tiram, Batu Bara Regency. The research addressed the problem of fluctuating financial performance, as reflected in changes in return on assets, which indicated potential inefficiencies in budget planning and control. A quantitative approach was applied using secondary financial data covering the 2019–2023 period. The analysis employed multiple linear regression to measure the partial and simultaneous effects of operating cost budgets and revenue budgets on financial performance. The data were processed using statistical analysis software. The results showed that operating cost budgets and revenue budgets simultaneously had a significant effect on financial performance. However, when tested individually, neither operating cost budgets nor revenue budgets showed a significant partial effect on return on assets. These findings indicated that financial performance was influenced by the interaction between cost management and revenue planning rather than by a single budget component in isolation. The study concluded that integrated and balanced budget management was essential for improving financial performance, particularly in state-owned enterprises operating under public service and regulatory constraints.

Keywords: Financial Performance; Operating Cost Budget; Return on Assets; Revenue Budget.

1. Introduction

Companies are required to plan and control their resources effectively in order to achieve organizational objectives in an optimal manner. One of the most important instruments in managerial planning and control is the budget. A budget functions as a detailed plan for future activities expressed in quantitative terms and serves as a guideline for implementation as well as a tool for performance evaluation (Karno & Devi, 2019). Through budgeting, management can align operational activities with strategic goals while minimizing inefficiencies in resource utilization.

In operational management, the operating cost budget represents all expenditures incurred by a company during its operating activities within a specific accounting period (Mansyur, 2018). Meanwhile, the revenue budget is a systematically and comprehensively prepared plan that estimates the income to be generated by the company over a certain period (Munandar, 2017). The effectiveness of managing operating costs in relation to planned revenues plays a crucial role in determining a company's financial performance, particularly profitability indicators such as *Return on Assets (ROA)*.

PT Perusahaan Listrik Negara (Persero) (PLN) is a state-owned enterprise (BUMN) that holds a strategic position in Indonesia's electricity sector. Since its transformation into a limited liability company (Persero), PLN has not only been responsible for fulfilling public service obligations but has also been required to maintain sustainable financial performance. This dual role necessitates more accountable and efficient budget management, especially at the regional operational unit level.

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Financial performance data of PT PLN (Persero) Unit Tanjung Tiram, Batu Bara Regency, during the 2019–2023 period indicate fluctuations in *ROA*. In 2019, the company recorded a negative *ROA* of -0.2% due to negative net income. Subsequently, during 2020–2022, *ROA* showed an upward trend, supported by increased net profit, improved asset utilization efficiency, and higher sales performance. However, in 2023, *ROA* declined to 2.7% , suggesting that operating costs increased relatively faster than revenues. This condition implies that despite revenue growth, operating cost control remains a critical challenge in maintaining stable financial performance.

Previous empirical studies have produced inconsistent findings regarding the effect of operating cost budgets and revenue budgets on financial performance. Asri Susanti (2024) found that operating cost budgets have a significant negative effect on *ROA*, while revenue does not have a significant partial effect. In contrast, Lilik Suryani (2020) reported that the ratio of operating expenses to operating income significantly influences *ROA*. These divergent results indicate the presence of a research gap that warrants further investigation, particularly within state-owned enterprises in the electricity sector at the regional unit level.

This study offers novelty by simultaneously examining the effects of operating cost budgets and revenue budgets on financial performance within a regional operational unit of PLN, a context that has received limited empirical attention. By focusing on PT PLN (Persero) Unit Tanjung Tiram, this research provides more specific evidence on budget effectiveness in supporting financial performance at the operational level.

Accordingly, the objectives of this study are to analyze the effect of the operating cost budget on financial performance, to examine the effect of the revenue budget on financial performance, and to evaluate the simultaneous effect of operating cost and revenue budgets on the financial performance of PT PLN (Persero) Unit Tanjung Tiram, Batu Bara Regency.

2. Materials and Methods

2.1 Research Design

This study employs a quantitative explanatory design to examine the effect of operating cost budgets and revenue budgets on financial performance. A quantitative approach is appropriate as it enables hypothesis testing through numerical data and statistical analysis (Creswell, 2018).

1.2 Data and Sample

The study uses secondary quantitative data obtained from consolidated financial statements and budget realization reports of PT PLN (Persero) Unit Tanjung Tiram, Batu Bara Regency. The observation period covers 2019–2023. Sampling was conducted using purposive sampling, with annual data on operating cost budgets, revenue budgets, and *Return on Assets (ROA)* selected based on data availability and relevance (Sugiyono, 2018).

1.3 Variables and Measurement

The research variables consist of:

1. Operating Cost Budget (X_1): total planned operational expenditures per year.
2. Revenue Budget (X_2): total planned annual revenues.
3. Financial Performance (Y): measured using *Return on Assets (ROA)*, calculated as net income divided by total assets.

2.4 Data Analysis Technique

Data were analyzed using multiple linear regression analysis to estimate the simultaneous and partial effects of operating cost and revenue budgets on financial performance. The regression model is specified as:

$$ROA = \alpha + \beta_1 X_1 + \beta_2 X_2 + \varepsilon$$

Statistical analysis was conducted using SPSS version 20.

1.4 Assumption and Hypothesis Testing

Prior to regression analysis, classical assumption tests normality, multicollinearity, autocorrelation, and heteroscedasticity were conducted to ensure model validity. Hypothesis testing was performed at a 5% significance level, using the t-test for partial effects and the coefficient of determination (R^2) to assess the explanatory power of the model..

3. Results and Discussion

3.1 Operating Cost and Revenue Budget Performance

The development of the operating cost budget of PT PLN (Persero) Unit Tanjung Tiram, Batu Bara Regency during the 2019–2023 period is presented in Table 1.

Table 1. Operating Cost Budget of PT PLN (Persero) Unit Tanjung Tiram (2019–2023)

Year	Operating Cost Budget (IDR)
2019	5,016,533,694,000
2020	5,921,671,334,000
2021	8,190,900,586,000
2022	9,113,932,255,835
2023	10,545,735,167,000

Source: PT PLN (Persero) Unit Tanjung Tiram

Table 1 shows a consistent increase in operating cost budgets from 2019 to 2022, followed by a continued rise in 2023. This trend reflects increasing operational intensity and cost pressures associated with electricity distribution and maintenance activities. The revenue budget performance over the same period is summarized in Table 2.

Table 2. Revenue Budget of PT PLN (Persero) Unit Tanjung Tiram (2019–2023)

Year	Revenue Budget (IDR)
2019	5,528,330,427,000
2020	7,381,215,893,376
2021	12,580,198,000,000
2022	20,385,615,573,668
2023	17,654,203,174,000

Source: PT PLN (Persero) Unit Tanjung Tiram

As shown in Table 2, revenue increased significantly from 2019 to 2022, indicating improved service coverage and demand growth. However, a decline occurred in 2023, suggesting that revenue realization did not fully keep pace with rising operating costs. A

combined overview of operating cost budgets, revenue budgets, and financial performance (*ROA*) is presented in Table 3.

Table 3. Operating Cost Budget, Revenue Budget, and ROA (2019–2023)

Year	Operating Cost Budget	Revenue Budget	ROA (%)
2019	29.340	29.408	-20.308
2020	29.629	29.244	-29.204
2021	30.198	29.734	-7.544
2022	30.645	29.840	-4.590
2023	30.525	29.986	-3.975

Source: PT PLN (Persero) Unit Tanjung Tiram

The data indicate persistent pressure on financial performance, as reflected in negative *ROA* values, despite increasing revenues in several years. This condition suggests inefficiencies in cost management relative to asset utilization.

3.2 Classical Assumption Tests

Prior to regression analysis, classical assumption tests were conducted. The Kolmogorov–Smirnov normality test produced an Asymp. Sig. (2-tailed) value of 0.978, which exceeds the 0.05 threshold. This result confirms that the residuals are normally distributed, fulfilling the normality assumption. Graphical diagnostics indicate no serious multicollinearity, heteroscedasticity, or autocorrelation issues, confirming that the regression model is statistically valid.

3.3 Regression Analysis Results

The regression model summary is presented in Table 4.

Table 4. Model Summary

R	R Square	Adjusted R Square	Std. Error	Durbin–Watson
0.888	0.789	0.578	7.24553	3.172

Source: SPSS Output, 2025

The correlation coefficient (*R*) of 0.888 indicates a strong relationship between the independent variables and *ROA*. The coefficient of determination (R^2) shows that 78.9% of the variation in financial performance is explained jointly by operating cost and revenue budgets.

3.4 Simultaneous Effect (F-Test)

The simultaneous effect of the independent variables is shown in Table 5.

Table 5. ANOVA (F-Test Results)

Source	Sum of Squares	df	Mean Square	F	Sig.
Regression	392.851	2	196.425	3.742	0.001
Residual	104.995	2	52.498		
Total	497.846	4			

Source: SPSS Output, 2025

The F-statistic of 3.742 with a significance value below 0.05 indicates that operating cost budgets and revenue budgets simultaneously have a significant effect on financial performance.

3.5 Partial Effects (t-Test)

The partial regression results are presented in Table 6.

Table 6. Partial Regression Results (t-Test)

Variable	Coefficient (B)	t-value	Sig.
Operating Cost Budget	2.444E-012	0.593	0.613
Revenue Budget	7.117E-013	0.485	0.675

Source: SPSS Output, 2025

The results indicate that both operating cost budgets and revenue budgets have positive but statistically insignificant effects on *ROA* at the 5% significance level. This suggests that neither variable independently determines financial performance. However, their combined effect is significant, highlighting the importance of integrated budget management.

This finding implies that financial performance in PT PLN (Persero) Unit Tanjung Tiram is influenced not by isolated budget components but by the overall balance between cost control and revenue realization, particularly within the structural constraints of a state-owned enterprise.

The findings of this study indicate that operating cost budgets and revenue budgets jointly have a significant effect on financial performance (*ROA*) at PT PLN (Persero) Unit Tanjung Tiram. However, when examined individually, neither the operating cost budget nor the revenue budget shows a statistically significant partial effect on *ROA*. This result highlights that financial performance is not determined by a single budgeting component, but rather by the integrated interaction between cost management and revenue realization.

The positive but insignificant partial effect of the operating cost budget suggests that increases in operational spending do not automatically translate into improved financial performance. In the context of a state-owned electricity provider, operating costs are largely influenced by fixed and policy-driven expenditures, such as maintenance of infrastructure, service reliability obligations, and regulated tariffs. These structural characteristics limit managerial flexibility in cost reduction and weaken the direct relationship between operating costs and profitability. This finding is consistent with prior studies that report a negative or insignificant relationship between operating expenses and profitability indicators when costs are rigid or service-oriented in nature.

Similarly, the revenue budget exhibits a positive yet statistically insignificant effect on *ROA*. Although revenue growth reflects increased electricity demand and service expansion, it does not necessarily improve profitability if it is accompanied by disproportionately higher operating costs. In regulated industries such as electricity distribution, revenue increases are often constrained by tariff regulations and social obligations, which reduce the marginal contribution of revenue growth to net income. This condition explains why revenue planning alone is insufficient to enhance financial performance without simultaneous efficiency improvements.

The significant simultaneous effect identified through the F-test indicates that operating cost and revenue budgets collectively explain a substantial proportion of variations in financial performance. This result underscores the importance of integrated budget management, where cost efficiency and revenue optimization must be aligned. The strong coefficient of determination (R^2) further suggests that budgeting plays a critical role in shaping financial outcomes, even though its individual components may not exert dominant effects in isolation.

From a theoretical perspective, these findings support management control theory, which emphasizes that budgeting functions as a coordination and control mechanism rather than merely a financial planning tool. Budget effectiveness depends on coherence between expenditure control and revenue generation strategies. In the case of PT PLN (Persero) Unit Tanjung Tiram, financial performance is shaped by how well operating costs are managed relative to revenue capacity under regulatory and public service constraints.

Overall, the discussion reveals that improving financial performance in state-owned enterprises requires a holistic budgeting approach. Managers should focus not only on increasing revenues or limiting costs separately, but on optimizing the cost–revenue structure to ensure sustainable asset utilization and profitability. This insight is particularly relevant for public utility companies that operate under dual objectives of service provision and financial sustainability.

4. Conclusions

This study was conducted successfully at PT PLN (Persero) Unit Tanjung Tiram, Batu Bara Regency, using a quantitative approach and secondary financial data for the 2019–2023 period. The research design and analytical procedures were implemented appropriately to examine the relationship between operating cost budgets, revenue budgets, and financial performance. The empirical findings indicate that operating cost budgets and revenue budgets simultaneously have a significant effect on financial performance as measured by *Return on Assets (ROA)*. This result is supported by the F-test, which shows a significance value of 0.001, lower than the 0.05 significance level. Accordingly, the null hypothesis (H_0) is rejected, and the alternative hypothesis (H_1) is accepted, confirming that budgeting plays a crucial role in explaining variations in financial performance. However, partial testing reveals that neither the operating cost budget nor the revenue budget individually exerts a statistically significant effect on *ROA*. This finding suggests that financial performance is not determined by a single budget component in isolation, but rather by the combined interaction between cost management and revenue planning. Therefore, effective and integrated budget management is essential to support sustainable financial performance at PT PLN (Persero) Unit Tanjung Tiram

5. Patents

This research did not result in any patents or intellectual property claims. Therefore, no patent-related disclosures are applicable to this study.

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