

Evaluation of the Financial Feasibility of Griya Puspa Executive Building at RSUP Persahabatan

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Abstract

Investment in public health infrastructure requires robust technical and strategic justification, particularly when involving public funds. This study conducts an ex-post financial feasibility evaluation of the Griya Puspa Executive Building renovation at RSUP Persahabatan, an initiative driven by two fundamental urgencies. First, the technical obligation to comply with the Minister of Health Regulation No. 24/2016, given the building's age exceeded 20 years. Second, the strategic imperative to address a low revenue-to-operating-cost ratio of only 73.05%. The study employs a quantitative, deterministic financial model constructed from secondary data, including the final Bill of Quantity (BOQ) and audited financial reports. The performance of the realized Rp 27.56 billion investment was then evaluated over a 20-year horizon using five key capital budgeting metrics. All discounted cash flow calculations were based on a Minimum Attractive Rate of Return (MARR) of 5.5% and incorporated the project's tax-exempt status as a Public Service Agency (BLU). The quantitative analysis shows superior financial viability: a positive NPV of Rp 276.8 billion, an IRR of 46.1%, a BCR of 1.6, and a capital recovery period of 6.32 years, further supported by a cumulative ROI reaching 216% at the end of the period. This research concludes that the renovation project is highly feasible, confirming that an investment grounded in regulatory compliance and strategic goals, when executed within a Public Service Agency (BLU) framework, is a resilient model for enhancing the financial sustainability of public hospitals in Indonesia.

Keywords: Evaluation, Hospital, Investment Performance, Financial Feasibility.

1. INTRODUCTION

Investment in the health infrastructure sector is a fundamental step to ensure the availability of quality services while supporting national economic productivity (Zou et al., 2020). In Indonesia, government-owned hospitals operating under the status of Public Service Agencies (BLU) face a dual challenge: providing affordable public services while maintaining autonomy and financial sustainability (Alamsyah & Nugroho, 2021). The balance between social mandate and fiscal health is a persistent issue that requires effective investment strategies to ensure long-term viability (Dewi & Darma, 2019). Persahabatan General Hospital, as a national referral vertical hospital, represents this challenge with an operating income to operating cost (OIC) ratio of only 73.05%, an indicator of financial pressure. This condition is exacerbated by the technical obligation to modernize facilities, where the Griya Puspa Building, which has been in operation for more than two decades, creates a compliance gap with mandatory standards.

Responding to these dual challenges, Persahabatan General Hospital initiated a strategic renovation project for the Griya Puspa Building in 2022 to transform the facility into a premium executive service center. The focus of this study is to evaluate the financial feasibility of the project post-implementation. A number of previous studies have analyzed the feasibility of hospital construction investments using a capital budgeting approach, such as studies by Aditrio and Oetomo (2023), Irawan et al. (2020), and Wardhana et al. (2023), all of which concluded the feasibility of the project based on ex-ante analysis. However, there is a significant research gap in ex-post (post-implementation) evaluations of strategic renovation projects, particularly within the unique financial framework of a BLU.

This study specifically fills this gap by conducting a comprehensive ex-post financial feasibility analysis of the Griya Puspa Building renovation project. The main objective is to measure the realized economic viability and evaluate its effectiveness as a strategic model for the financial sustainability of public hospitals in Indonesia (Husaini et al., 2020). Using actual operational data and the MARR approach relevant to the public sector (Susilowati & Firmansyah, 2021), this study provides empirical evidence on the actual performance of the

investment. Its main contribution is to present a historically validated case study, which differs from studies based solely on projections, thus offering stronger and more accountable insights for stakeholders.

2. METHOD

This study employed a quantitative descriptive methodology with an *ex-post* evaluation design to analyze the financial feasibility of the implemented Griya Puspa Building renovation project. The research focuses on assessing the realized performance of the investment using actual post-project data, thereby providing an empirical validation rather than an *ex-ante* forecast. The entire quantitative analysis is grounded in secondary data obtained directly from official documents provided by RSUP Persahabatan, including the final Bill of Quantity (BOQ), comprehensive financial statements, and detailed operational reports for the 2022–2024 period.

A deterministic financial model was constructed to project the project's Net Cash Flow (NCF) over a 20-year economic life, a horizon consistent with the useful life of permanent state-owned buildings. The model's analytical framework was defined by two critical parameters. A Minimum Attractive Rate of Return (MARR) of 5.5% was utilized, representing a Social Discount Rate (SDR) proxied by the Bank Indonesia policy rate, which is methodologically appropriate for a public sector project. Furthermore, the project's corporate income tax rate was set to zero (0%), a factual parameter based on the legal status of RSUP Persahabatan as a Public Service Agency (BLU) under the Indonesian Law on Income Tax (UU No. 36/2008).

The resulting NCF series served as the primary input for the feasibility evaluation, which was conducted using five standard capital budgeting metrics: Net Present Value (NPV), Internal Rate of Return (IRR), Benefit-Cost Ratio (BCR), Payback Period (PP), and Return on Investment (ROI). These indicators collectively provide a comprehensive assessment of the project's profitability, efficiency, and risk profile.

3. Results and Discussion

3.1 Total Investment

The initial investment cost forms the baseline for the financial evaluation. As this is an *ex-post* analysis, the cost is not an estimate but the realized capital expenditure for the renovation project, disbursed in the 2022 fiscal year. The total investment value was derived from the official Bill of Quantity (BOQ) document provided by RSUP Persahabatan. This value encompasses all direct and indirect costs associated with the renovation, including construction, materials, and project preparation. The funding for this investment was sourced entirely from the hospital's internal Public Service Agency (BLU) capital, with no external debt financing. The total investment cost for the project is Rp 27.555.849.683.

3.2 Revenue Projections

3.2.1 Outpatient Revenue Projection

The outpatient revenue projections in this study were compiled using a capacity-constrained logistic growth model. This model was chosen because it is highly accurate in projecting the number of patients when there are service capacity constraints. The model was parameterized using historical data from 2022 to 2024, so that the projection results continue to reflect the actual performance of hospitals in the base years.

The first step in developing the model was to set an average rate per patient visit of IDR 3,296,701, which served to normalize rate fluctuations between years. Next, the Maximum Annual Service Capacity (K) was determined to be 168,000 patients/year, using a bottom-up approach based on the availability of medical personnel and service productivity levels. This capacity value represents the upper limit (asymptotic limit) of the number of patients that can be served during the projection period.

Patient volume was then projected using the standard logistic growth formula:

$$P_t = \frac{K}{1 + \left(\frac{K - P_0}{P_0}\right)e^{-\gamma t}} \quad (1)$$

The variables in this equation are defined as follows:

P_t = Projected patient volume in year t

P_0 = Initial patient volume at the base year

K = Maximum annual patient capacity

γ = The historical average growth rate

t = The number of years elapsed since the base year.

Based on this formula, the number of patients is projected to increase gradually from 3,183 patients in 2022 to 35,141 patients in 2041. In line with this growth in patient volume, outpatient revenue is also expected to increase significantly, from IDR 12.35 billion in 2022 to IDR 115.85 billion in 2041.

Table 1: Projected Inpatient Revenue

Q	Year	Number of patients		Total
1	2022	3183	Rp	12.354.876.326
2	2023	4815	Rp	13.622.179.077
3	2024	5524	Rp	18.600.941.652
4	2025	8190	Rp	26.998.548.540
5	2026	9027	Rp	29.758.247.139
6	2027	9944	Rp	32.782.480.079
7	2028	10948	Rp	36.092.889.780
8	2029	12046	Rp	39.712.110.831
9	2030	13245	Rp	43.663.643.970
10	2031	14551	Rp	47.971.684.962
11	2032	15974	Rp	52.660.902.078
12	2033	17519	Rp	57.756.156.190
13	2034	19196	Rp	63.282.158.128
14	2035	21010	Rp	69.263.059.179
15	2036	22969	Rp	75.721.972.425
16	2037	25080	Rp	82.680.425.140
17	2038	27348	Rp	90.157.745.779
18	2039	29778	Rp	98.170.393.160
19	2040	32375	Rp	106.731.240.248
20	2041	35141	Rp	115.848.830.271

3.2.2 Inpatient Revenue Projection

The projection of inpatient revenue is anchored to the primary physical constraint of the facility: available beds. The methodology employs a dual-stage analytical approach, first by projecting unconstrained service demand based on historical trends, and subsequently reconciling this demand with the quantified physical capacity of the facility to ensure the final forecast is operationally feasible and analytically sound.

The initial step involved quantifying the maximum theoretical service capacity, measured in annual bed-days. This was determined for each room class (Class 1, VIP, and VVIP) by multiplying the number of available beds by 365 days. This calculation established the operational ceilings at 11,315 bed-days for Class 1, 5,110 for VIP, and 730 for VVIP. These figures represent the absolute upper limit of service that can be provided annually.

Subsequently, the demand for inpatient services was projected using a historical average annual growth rate of 40%. This rate was derived from an analysis of actual inpatient bed-day growth from the 2022–2024 operational period. The unconstrained demand for each year.

Table 2: Unconstrained Projection of Inpatient Bed-Days

Year	Class 1	VIP	VVIP
2022			
2023	4604	1295	28
2024	8870	2204	160
2025	12418 → MAX	3086	224
2026	17385	4320	314
2027	24339	6048 → MAX	439
2028	34075	8467	615
2029	47705	11854	861 → MAX
2030	66787	16595	1205
2031	93503	23233	1687
2032	130904	32527	2361
2033	183265	45537	3306
2034	256572	63752	4628
2035	359201	89254	6479
2036	502882	124955	9071
2037	704036	174937	12700
2038	985651	244913	17779
2039	1379913	342878	24891
2040	1931880	480030	34848
2041	2704636	672043	48787

The results of this unconstrained projection illustrate the initial exponential growth. The markers on this table indicate the specific years where the projected demand first exceeds the calculated physical capacity for each respective room class. To ensure a realistic forecast, a capacity constraint was applied. The projected bed-days were allowed to grow at the historical rate only until they reached the pre-determined maximum capacity. Once this ceiling was met, the bed-days for all subsequent years were held constant at that maximum level.

Table 3: Final Constrained Projection of Inpatient Bed-Days

Year	Class 1	VIP	VVIP
2023	4604	1295	28
2024	8870	2204	160
2025	11315	3086	224
2026	11315	4320	314
2027	11315	5110	439
2028	11315	5110	615
2029	11315	5110	730
2030	11315	5110	730
2031	11315	5110	730
2032	11315	5110	730
2033	11315	5110	730
2034	11315	5110	730
2035	11315	5110	730
2036	11315	5110	730
2037	11315	5110	730
2038	11315	5110	730
2039	11315	5110	730
2040	11315	5110	730
2041	11315	5110	730

The resulting adjusted projection reflects this operational reality, with growth stabilizing as physical limits are reached. This dual-stage approach projecting demand and then constraining it with real capacity yields an inpatient revenue forecast that is both conservative and analytically robust.

3.3 Expense Projections

To operationalize the revenue and expense projections for the discounted cash flow (DCF) analysis, a comprehensive 20-year pro-forma financial model was constructed. The expense model was disaggregated into capital and operational expenditures to ensure analytical precision. The initial capital expenditure consisted of the realized one-time investment of Rp 27.555.849.683 in 2022, supplemented by recurring capital outlays for medical equipment at scheduled intervals to account for asset replacement. Annual operational expenses, anchored to the 2022–2024 historical cost structure, were trended forward using a composite growth rate that accounts for both anticipated healthcare service inflation and the projected increase in patient volume.

These projections were systematically processed through a pro-forma income statement to derive the annual net cash flow. Core operational profitability (EBITDA) was first established from revenues and operational costs. From this, the annual depreciation expense of Rp 1.308.902.860 was subtracted to yield the operating profit (EBIT). The depreciation charge was calculated using the Straight-Line Method over a 20-year useful life with a 5% residual value; this amortization period is stipulated by the Indonesian Ministry of Finance Regulation concerning the Economic Life of State-Owned Assets (PMK No. 72/2023). As the project was internally funded, no interest expense was incurred, rendering the EBT identical to EBIT. Critically, the project’s tax-exempt status as a Public Service Agency (BLU), in accordance with the Indonesian Law on Income Tax (UU No. 36/2008), makes the EAT equivalent to EBT. The final Net Cash Flow (NCF) is defined as the EAT, adjusted for a scheduled internal capital recovery allocation during the 2024–2027 period, providing a conservative measure of cash available after this internal commitment is met.

Table 4: Projected Annual Income and Disaggregated Expenses

Q	Year	Income	Expenses				
			Investment Costs	Construction	Medical Equipment	Operating Costs	Total Expenses
1	2022	Rp 15.474.256.326	Rp 27.555.849.683	-Rp 27.555.849.683	-	-Rp 2.488.113.287	-Rp 30.043.962.970
2	2023	Rp 18.935.779.077	-	-	-	-Rp 22.225.235.704	-Rp 22.225.235.704
3	2024	Rp 28.611.041.652	-	-	-	-Rp 15.493.530.012	-Rp 15.493.530.012
4	2025	Rp 40.185.443.979	-	-	-	-Rp 21.761.332.212	-Rp 21.761.332.212
5	2026	Rp 44.825.408.367	-	-	-	-Rp 24.273.978.496	-Rp 24.273.978.496
6	2027	Rp 49.169.100.670	-	-	-Rp 1.200.000.000	-Rp 26.626.186.706	-Rp 27.826.186.706
7	2028	Rp 52.778.059.816	-	-	-	-Rp 28.580.520.194	-Rp 28.580.520.194
8	2029	Rp 56.593.360.831	-	-	-	-Rp 30.646.592.499	-Rp 30.646.592.499
9	2030	Rp 60.544.893.970	-	-	-	-Rp 32.786.437.600	-Rp 32.786.437.600
10	2031	Rp 64.852.934.962	-	-	-	-Rp 35.119.339.813	-Rp 35.119.339.813
11	2032	Rp 69.542.152.078	-	-	-Rp 1.200.000.000	-Rp 37.658.657.570	-Rp 38.858.657.570
12	2033	Rp 74.637.406.190	-	-	-	-Rp 40.417.853.599	-Rp 40.417.853.599
13	2034	Rp 80.163.408.128	-	-	-	-Rp 43.410.309.375	-Rp 43.410.309.375
14	2035	Rp 86.144.309.179	-	-	-	-Rp 46.649.103.372	-Rp 46.649.103.372
15	2036	Rp 92.603.222.425	-	-	-	-Rp 50.146.751.847	-Rp 50.146.751.847
16	2037	Rp 99.561.675.140	-	-	-Rp 1.200.000.000	-Rp 53.914.912.311	-Rp 55.114.912.311
17	2038	Rp 107.038.995.779	-	-	-	-Rp 57.964.051.561	-Rp 57.964.051.561
18	2039	Rp 115.051.643.160	-	-	-	-Rp 62.303.082.421	-Rp 62.303.082.421
19	2040	Rp 123.612.490.248	-	-	-	-Rp 66.938.975.895	-Rp 66.938.975.895
20	2041	Rp 132.730.080.271	-	-	-	-Rp 71.876.358.335	-Rp 71.876.358.335

Table 5: Projected Financial Performance and Net Cash Flow

Q	Year							Net cash flow	Account Balance
		EBITDA	Depreciation	EBIT	EBT	EAT	Loan Repayments		
1	2022	-Rp 14.569.706.645	Rp 1.308.902.860	-Rp 15.878.609.505	-Rp 15.878.609.505	-Rp 15.878.609.505	-	-Rp 15.878.609.505	Rp 73.074.068.979
2	2023	-Rp 3.289.456.627	Rp 1.308.902.860	-Rp 4.598.359.487	-Rp 4.598.359.487	-Rp 4.598.359.487	-	-Rp 4.598.359.487	Rp 68.475.709.492
3	2024	Rp 13.117.511.640	Rp 1.308.902.860	Rp 11.808.608.780	Rp 11.808.608.780	Rp 11.808.608.780	Rp 6.888.962.421	Rp 4.919.646.360	Rp 73.395.355.852
4	2025	Rp 18.424.111.767	Rp 1.308.902.860	Rp 17.115.208.907	Rp 17.115.208.907	Rp 17.115.208.907	Rp 6.888.962.421	Rp 10.226.246.486	Rp 83.621.602.338
5	2026	Rp 20.551.429.870	Rp 1.308.902.860	Rp 19.242.527.011	Rp 19.242.527.011	Rp 19.242.527.011	Rp 6.888.962.421	Rp 12.353.564.590	Rp 95.975.166.928
6	2027	Rp 21.342.913.964	Rp 1.308.902.860	Rp 20.034.011.104	Rp 20.034.011.104	Rp 20.034.011.104	Rp 6.888.962.421	Rp 13.145.048.683	Rp 109.120.215.611
7	2028	Rp 24.197.539.622	Rp 1.308.902.860	Rp 22.888.636.762	Rp 22.888.636.762	Rp 22.888.636.762	-	Rp 22.888.636.762	Rp 132.008.852.373
8	2029	Rp 25.946.768.331	Rp 1.308.902.860	Rp 24.637.865.471	Rp 24.637.865.471	Rp 24.637.865.471	-	Rp 24.637.865.471	Rp 156.646.717.844
9	2030	Rp 27.758.456.371	Rp 1.308.902.860	Rp 26.449.553.511	Rp 26.449.553.511	Rp 26.449.553.511	-	Rp 26.449.553.511	Rp 183.096.271.355
10	2031	Rp 29.733.595.149	Rp 1.308.902.860	Rp 28.424.692.289	Rp 28.424.692.289	Rp 28.424.692.289	-	Rp 28.424.692.289	Rp 211.520.963.644
11	2032	Rp 30.683.494.508	Rp 1.308.902.860	Rp 29.374.591.648	Rp 29.374.591.648	Rp 29.374.591.648	-	Rp 29.374.591.648	Rp 240.895.555.292
12	2033	Rp 34.219.552.591	Rp 1.308.902.860	Rp 32.910.649.731	Rp 32.910.649.731	Rp 32.910.649.731	-	Rp 32.910.649.731	Rp 273.806.205.023
13	2034	Rp 36.753.098.752	Rp 1.308.902.860	Rp 35.444.195.892	Rp 35.444.195.892	Rp 35.444.195.892	-	Rp 35.444.195.892	Rp 309.250.400.915
14	2035	Rp 39.495.205.807	Rp 1.308.902.860	Rp 38.186.302.947	Rp 38.186.302.947	Rp 38.186.302.947	-	Rp 38.186.302.947	Rp 347.436.703.862
15	2036	Rp 42.456.470.577	Rp 1.308.902.860	Rp 41.147.567.718	Rp 41.147.567.718	Rp 41.147.567.718	-	Rp 41.147.567.718	Rp 388.584.271.580
16	2037	Rp 44.446.762.829	Rp 1.308.902.860	Rp 43.137.859.969	Rp 43.137.859.969	Rp 43.137.859.969	-	Rp 43.137.859.969	Rp 431.722.131.549
17	2038	Rp 49.074.944.218	Rp 1.308.902.860	Rp 47.766.041.358	Rp 47.766.041.358	Rp 47.766.041.358	-	Rp 47.766.041.358	Rp 479.488.172.907
18	2039	Rp 52.748.560.739	Rp 1.308.902.860	Rp 51.439.657.879	Rp 51.439.657.879	Rp 51.439.657.879	-	Rp 51.439.657.879	Rp 530.927.830.787
19	2040	Rp 56.673.514.353	Rp 1.308.902.860	Rp 55.364.611.493	Rp 55.364.611.493	Rp 55.364.611.493	-	Rp 55.364.611.493	Rp 586.292.442.280
20	2041	Rp 60.853.721.935	Rp 1.308.902.860	Rp 59.544.819.075	Rp 59.544.819.075	Rp 59.544.819.075	-	Rp 59.544.819.075	Rp 645.837.261.355

3.4 Financial Feasibility Analysis

The financial viability of the project was assessed using a standard capital budgeting framework comprising five key performance indicators. The evaluation was conducted over a 20-year project horizon, and all discounted cash flow (DCF) metrics were calculated using a Minimum Attractive Rate of Return (MARR) of 5.5%. This rate, proxied by the Bank Indonesia policy rate, represents the social opportunity cost of capital for this public sector project.

3.4.1 Net Present Value (NPV)

Net Present Value (NPV) is the primary metric used to determine the absolute economic value created by the project. It calculates the difference between the present value of all future net cash inflows and the initial investment cost. This metric quantifies the expected addition to the institution's value in today's currency, providing a direct measure of its profitability.

The formula for NPV is as follows:

$$NPV = \sum_{t=0}^n \frac{NCF_t}{(1+i)^t} \dots\dots\dots (2)$$

The variables in this equation are defined as follows:

- NCF_t = Net Cash Flow in period t
- I = Discount Rate (MARR = 5,5%)
- n = Total number of periods (20 years)
- t = The time period

The analysis yields a substantially positive NPV of Rp 276.789.177.056. A positive NPV confirms that the project's expected returns exceed the minimum required rate of return. The magnitude of this value signifies that the investment is projected to generate significant economic surplus for the institution, far beyond the initial capital outlay, thereby strongly supporting its financial feasibility.

Table 6: Net Present Value Calculation Results

Tahun	Q	Net Cash Flow	(P/F,I,N)	Present Value
2022	1	-Rp 15.878.609.505	1	-Rp15.878.609.505
2023	2	-Rp 4.598.359.487	0,948	-Rp4.358.634.585
2024	3	Rp 4.919.646.360	0,898	Rp4.420.068.156
2025	4	Rp 10.226.246.486	0,852	Rp8.708.811.241
2026	5	Rp 12.353.564.590	0,807	Rp9.972.004.176
2027	6	Rp 13.145.048.683	0,765	Rp10.057.728.330
2028	7	Rp 22.888.636.762	0,725	Rp16.599.888.435
2029	8	Rp 24.637.865.471	0,687	Rp16.936.975.609
2030	9	Rp 26.449.553.511	0,652	Rp17.234.499.197
2031	10	Rp 28.424.692.289	0,618	Rp17.555.921.701
2032	11	Rp 29.374.591.648	0,585	Rp17.196.784.209
2033	12	Rp 32.910.649.731	0,555	Rp18.262.465.158
2034	13	Rp 35.444.195.892	0,526	Rp18.642.991.971
2035	14	Rp 38.186.302.947	0,499	Rp19.038.189.197
2036	15	Rp 41.147.567.718	0,473	Rp19.445.079.979
2037	16	Rp 43.137.859.969	0,448	Rp19.322.873.105
2038	17	Rp 47.766.041.358	0,425	Rp20.280.557.822
2039	18	Rp 51.439.657.879	0,402	Rp20.701.711.774
2040	19	Rp 55.364.611.493	0,381	Rp21.119.711.595
2041	20	Rp 59.544.819.075	0,362	Rp21.530.159.490
Net Present Value				Rp276.789.177.056

3.4.2 Internal Rate of Return (IRR)

The Internal Rate of Return (IRR) measures the project's intrinsic, annualized rate of return. It is defined as the discount rate at which the Net Present Value (NPV) of all cash flows equals zero, providing a powerful measure of profitability that is independent of the external cost of capital.

The IRR was determined through a systematic, iterative process. Initially, a trial-and-error approach was employed to identify the discount rate that converges the project's NPV to zero. To establish the bounds for calculation, two proximate discount rates were tested on the 20-year net cash flow stream.

- IRR = 46.0% yielded a marginal positive NPV of Rp 86,224,835
- IRR = 46.2% resulted in a negative NPV of -Rp 60,733,706.

With these two points bracketing the break-even rate, the precise IRR was then calculated using the standard linear interpolation formula:

$$IRR = i_1 + \left(\frac{NPV_1}{NPV_1 - NPV_2} \right) \times (i_2 - i_1) \dots\dots\dots (3)$$

The following calculation:

$$IRR = 46\% + \left(\frac{Rp\ 86.224.835}{Rp\ 86.224.835 - (-Rp\ 60.733.705)} \right) \times (46,2\% - 46\%) = 46,1\%$$

This process yielded an IRR of 46.1%. To validate the accuracy of the manual interpolation, the IRR was independently recalculated using the Goal Seek function in Microsoft Excel. This computational tool, which utilizes a numerical algorithm to solve for the exact discount rate, confirmed the IRR to be precisely 46.1%. The investment is deemed feasible if the calculated IRR exceeds the MARR. The final calculated IRR of 46.1% substantially surpasses the established MARR of 5.5%, indicating an exceptionally robust project with a high margin of safety against fluctuations in the cost of capital and confirming its strong financial viability.

3.4.3 Benefit Cost Ratio (BCR)

Benefit Cost Ratio (BCR) provides a measure of investment efficiency by comparing the relative magnitude of benefits to costs in present value terms.

The formula for BCR is:

$$BCR = \frac{\sum \text{Present Worth of Benefit}}{\sum \text{Present Worth of Cost}} \dots\dots\dots (4)$$

The following calculation:

$$BCR = \frac{Rp\ 766.338.730.667}{Rp\ 489.549.553.611} = 1,6$$

The analysis resulted in a BCR of 1,6. The results indicate a BCR greater than 1.0 which renders the project feasible. The value of 1.6 indicates that for every one unit of currency invested in present value terms, the project is expected to return that unit plus an additional 60 cents, signifying a highly efficient use of capital.

3.4.4 Payback Period (PP)

The Payback Period (PP) is a non-discounted metric used to assess investment risk and liquidity by measuring the time required for a project's cumulative net cash flows to recover the initial investment.

The formula for Payback Period is:

$$PP = n + \frac{\text{Unrecovered Investment at start of year} \dots\dots\dots (5)}{\text{Cash flow during the year}}$$

The calculation identified that recovery occurs after year 6 (2027), with an unrecovered amount of Rp 7,388,312,555 and a cash flow of Rp 22.888.636.762 during the following year (2028).

The following calculation:

$$PP = 6 + \left(\frac{Rp\ 27.555.849.683 - Rp\ 20.167.537.128}{Rp\ 43.056.173.889 - Rp\ 20.167.537.128} \right)$$

$$PP = 6 + \left(\frac{Rp\ 7.388.312.555}{Rp\ 22.888.636.762} \right) = 6 + 0,32 = 6,32\ \text{Years}$$

The calculated Payback Period is 6.32 years (6 years and 4 months). For an infrastructure project with a 20-year economic life, this represents a relatively rapid capital recovery, which minimizes the project's risk profile and enhances liquidity.

3.4.5 Return on Investment (ROI)

Return on Investment (ROI) is an accounting-based metric that measures the annual profitability of the investment relative to its initial cost. The formula is:

$$ROI_t = \frac{\text{Net Profit in year } t}{\text{Total Initial Investment}} \times 100\% \dots\dots\dots (6)$$

The calculation example:

$$ROI_{2024} = \frac{Rp\ 11.808.608.780}{Rp\ 25.555.849.683} \times 100\% = 42.9\%$$

The annual ROI exhibits a strong positive trajectory, ultimately reaching 216% in the final year of the projection. This progressive growth demonstrates the project's transition from a capital-intensive start-up phase to a highly profitable and financially sustainable operational phase.

3.5 Discussion

The convergence of all previous financial analysis methods provides conclusive empirical evidence that the Griya Puspa Building renovation project is not only feasible, but also represents a highly successful strategic investment with superior financial performance. In-depth analysis indicates that this success is the product of strong synergy between market-oriented service strategies and the inherent structural efficiency of the Public Service Agency (PSA) framework. The IRR rate of 46.1% is the main evidence of this extraordinary profitability, which is driven by a combination of premium pricing on executive services and the structural advantages of the PSU, which is exempt from corporate income tax, effectively maximizing the conversion of operating profits into net cash flow.

Strategically, this strong financial performance directly addresses the challenge underlying the investment: a low POBO ratio (73.05%). The project has proven to be an effective instrument for revenue diversification and strengthening fiscal autonomy. Its implications for public health management in Indonesia are significant. This case study presents a replicable strategic model: how public institutions can leverage underutilized assets to generate commercial revenue that can then be used to cross-subsidize their primary social service mission. When compared to ex-ante feasibility studies on other hospital projects in Indonesia, the performance of the Griya Puspa project shows clear superiority, confirming that the internal asset transformation model within the BLU framework has higher return potential.

Nevertheless, it must be acknowledged that the deterministic model used in this study is a limitation. As a direction for future research, the integration of sensitivity analysis or stochastic modeling will provide a deeper understanding of the impact of risk. In addition, a cost-benefit analysis that quantifies non-economic social impacts can provide a more holistic picture of the total value of the project.

4. Conclusions

This study shows that the renovation project of the Griya Puspa Building at Persahabatan General Hospital is financially and strategically feasible. An ex-post evaluation using a capital budgeting framework resulted in a positive NPV of Rp276.78 billion, an IRR of 46.1% that far exceeded the MARR of 5.5%, a BCR of 1.6 that confirmed cost-benefit efficiency, a relatively short payback period (PP) of 6.32 years, and a cumulative ROI of 216% at the end of the horizon. These results consistently show that the investment not only covers the initial costs but also provides substantial economic surplus.

Conceptually, these findings confirm that the strategy of optimizing internal assets through the BLU scheme can serve as an effective financial instrument for public hospitals to strengthen fiscal independence while increasing service capacity. The practical contribution of this study is to provide empirical evidence that the

modernization of health infrastructure, when managed with a measurable commercialization framework, can generate sustainable added value without sacrificing its social mandate. Therefore, the Griya Puspa project can be viewed not only as a profitable investment, but also as a strategic replication model for public health infrastructure management in Indonesia.

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