

Business Feasibility Study in the Planning of Bhayangkara Hospital Development in Labuan Bajo 2024

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ABSTRACT

The Indonesian National Police plans to construct Bhayangkara Hospital Labuan Bajo to address the shortage of hospital beds in West Manggarai, which still requires 85 beds based on WHO standards. This study employs a qualitative descriptive-analytic approach, utilizing participatory observation, in-depth interviews, FGDs, and secondary data analysis. Findings indicate that the hospital's construction is feasible due to existing market demand, particularly for emergency services like sea ambulances and hyperbaric treatment. The development plan meets technical standards, and financial analysis using NPV, IRR, and Payback Period confirms its viability and long-term profitability. The project is expected to enhance healthcare services for both residents and tourists while supporting Labuan Bajo's tourism and healthcare sectors.

Keywords:

Feasibility Study,
Bhayangkara
Hospital, Labuan
Bajo, Technical
Feasibility,
Financial
Feasibility

INTRODUCTION

The development of healthcare infrastructure is a critical component in improving the overall quality of public health services. According to the World Health Organization (WHO), an effective healthcare system requires the availability of sufficient healthcare facilities, including hospitals, to meet the needs of the population (WHO, 2018). Hospitals play a crucial role in delivering medical services, providing diagnostic and therapeutic care, and ensuring the well-being of communities. The establishment of healthcare facilities must be based on a feasibility study to assess demand, financial viability, and compliance with regulatory frameworks (Shi & Singh, 2019).

Labuan Bajo, located in the Komodo District, West Manggarai Regency, East Nusa Tenggara Province, has been designated as a super-priority tourism destination in Indonesia. As the administrative and economic center of the region, Labuan Bajo has experienced rapid population growth and increased demand for healthcare services. According to Statistics Indonesia (BPS, 2021), Labuan Bajo covers an area of 13.79 km² with a population of 6,973 people and a density of 506 people per km². This population growth, coupled with the increasing number of tourists, necessitates the development of healthcare infrastructure to address potential health risks and medical emergencies (Halim & Nasution, 2020).

Based on WHO recommendations, there should be at least one hospital bed per 1,000 residents to ensure adequate healthcare access (WHO, 2010). With a total population of 282,940 in West Manggarai Regency, an estimated 283 hospital beds are required. Currently, there are three hospitals in the region: Komodo Regional Hospital (53 beds), Siloam Hospital (95 beds), and Santo Yoseph Hospital (50 beds), totaling 198 beds. This indicates a shortage of 85 hospital beds, which could affect the quality and accessibility of healthcare services (Ministry of Health, 2022). To address this gap, the establishment of Bhayangkara Hospital in Labuan Bajo with a capacity of 77 beds has been proposed as a viable solution to enhance healthcare accessibility and service efficiency.

The construction of Bhayangkara Hospital requires a systematic feasibility study to assess the technical, financial, and operational aspects of the project. A feasibility study is essential in hospital planning as it evaluates market demand, regulatory requirements, financial sustainability, and human resource availability (Ginter, Duncan, & Swayne, 2018). This study aims to analyze the feasibility of establishing Bhayangkara Hospital by examining key factors such as market needs, regulatory compliance, environmental considerations, service requirements, and financial indicators, including Break-Even Point (BEP), Payback Period, Net Present Value (NPV), and Internal Rate of Return (IRR). By conducting a comprehensive analysis, this research seeks to provide insights into the viability and potential impact of the hospital on the healthcare system in Labuan Bajo.

METHOD

This study employs a combination of direct observation and participatory observation methods, along with in-depth interviews with hospital stakeholders. The research adopts a qualitative and quantitative approach with a descriptive-analytic method to fulfill the requirements for the establishment and development of Bhayangkara Hospital Labuan Bajo.

Data collection is conducted through participatory observation, which involves the researcher engaging directly in the activities or daily life of the study subjects. This method allows for an in-depth understanding of the context, behaviors, and social dynamics of the group or individuals being studied.

Primary data collection includes open interviews or Focused Group Discussions (FGD) with key stakeholders involved in the Bhayangkara Hospital Labuan Bajo project. The expected data from this stage include: (1) an assessment of land potential and location conditions, (2) direct information regarding existing conditions and potential development opportunities based on applicable standards, guidelines, and regulations, as well as (3) the intended objectives of the hospital's development and expansion plans. The interview instruments and guidelines are based on previous research conducted by Andayani in 2024.

Secondary data collection involves obtaining relevant data from various government institutions such as the City/Provincial Health Office, City/Provincial Development Planning Agency (Bappeda), Central Statistics Agency (BPS), and the National Health Insurance Agency (BPJS Kesehatan). Secondary data that is publicly available, such as BPS data, may be accessed either directly or via the internet.

The analysis focuses on several key aspects, including Market Analysis, Regulatory Analysis, Environmental Aspects, Service and Technology Requirements, Human Resource (HR) Considerations, and Financial Aspects (Break-Even Point, Payback Period, Net Present Value (NPV), and Internal Rate of Return (IRR)). The conceptual framework utilized in this study follows feasibility study guidelines for hospital development as per existing standards and regulations.

RESULTS AND DISCUSSION

A research instrument was used to assess the knowledge and experience of the project initiator regarding the development plan of Bhayangkara Hospital Labuan Bajo. Additionally, the study examined the initiator's awareness of regulations and procedures governing hospital construction.

1. Policy Aspects

- a. **Hospital Classification Policy:** Government Regulation of the Republic of Indonesia (PP RI) No. 47 of 2021 on Hospital Administration.
- b. **Inpatient Bed Distribution Policy:** Government Regulation No. 47 of 2021 on Hospital Administration.
- c. **Environmental Management Policy:** Government Regulation No. 22 of 2021 on Environmental Management, as stipulated in Article 4.
- d. **Standard Inpatient Class Policy:** Director General of Health Services Decree No. HK.02.02/I/1811/2022 on Technical Guidelines for Hospital Infrastructure Readiness in Implementing Standard Inpatient Classes for the National Health Insurance Program (12 Standard Inpatient Criteria - KRIS).
- e. **Hospital Business Licensing Policy:** Law No. 17 of 2023 on Health.
- f. **Hospital Accreditation Policy:** Minister of Health Regulation No. 34 of 2022 on Hospital Accreditation (replacing Minister of Health Regulation No. 12 of 2020).

2. Geographical Aspects

The proposed site for Bhayangkara Hospital Labuan Bajo is located on Soekarno-Hatta Street, Gorontalo Village, Komodo District, West Manggarai Regency, East Nusa Tenggara Province. Labuan Bajo, as part of West Manggarai Regency, has a strategic geographical position as one of Indonesia's premier tourist destinations. According to a letter from the Public Works and Housing Office No. 765/CKTRPKP.600/240/II/2023, the hospital location complies with general zoning regulations.

3. Demographic Aspects Komodo District has the highest population, with 58,735 inhabitants and an annual population growth rate of 3.3%, one of the highest in the region.

4. Social, Economic, and Cultural Aspects

The Gross Regional Domestic Product (GRDP) at current prices reflects the economic output of an area. West Manggarai Regency has shown consistent economic growth, with GRDP increasing from IDR 3.47 trillion in 2019 to IDR 4.25 trillion in 2023. The largest contributing sector is Agriculture, Forestry, and Fisheries, which accounted for IDR 1.67 trillion in 2023, demonstrating the importance of the agrarian sector to the local economy.

5. Human Resource Aspects

The medical workforce in West Manggarai Regency consists of specialists, general practitioners, and dentists. The total number of medical personnel is 130, distributed as follows:

- a. **Specialist Doctors:** 37 (exclusively in hospitals, indicating centralized specialist healthcare services).
 - b. **General Practitioners:** 80 (distributed across various facilities: 30 in health centers, 46 in hospitals, 4 in private clinics, and 3 in the Health Department).
 - c. **Dentists:** 13 (very limited, especially outside hospitals).
 - d. **Nurses:** 745 (471 in health centers, 231 in hospitals).
- 6. Epidemiological Aspects** The most reported disease is Acute Respiratory Infection (ARI), with 23,084 cases, typically managed in health centers or primary healthcare facilities. Other prevalent conditions include hypertension (20,301 cases) and myalgia (18,894 cases).

Discussion

The project initiator comprehends the background, objectives, and feasibility analysis of Bhayangkara Hospital construction in West Manggarai Regency. A thorough understanding of norms, standards, criteria, and procedures forms the foundation for this feasibility analysis, covering market studies, regulatory compliance, environmental impact, service and technology needs, human resources, and infrastructure.

1. Input

Based on situation analysis, demand analysis, and needs assessment, Bhayangkara Hospital is deemed feasible. According to the 2020 design by PT Global Rancang Selaras, the investment required for construction and operationalization amounts to IDR 229,898,214,312. However, following a rationalization of medical equipment procurement, the initial allocation of IDR 80,704,061,693 was reduced to IDR 35,825,645,162. As a result, the total investment required is IDR 186,894,829,715.

2. Output

Revenue and Cost Projections The Total Available Market (TAM) used as the basis for calculations is 90,089 people, with disease prevalence varying by age group. Of this population, 35,616 individuals are estimated to have medical conditions, forming the basis for annual hospital visit projections. The total estimated patient visits per year is ±202,289, with outpatient visits accounting for 127,293 and inpatient visits reaching 74,995.

Revenue projections over 15 years show a consistent increase:

- a. **Year 1:** Revenue IDR 49,441,704,409; Expenses IDR 49,478,521,125 (no profit recorded).
- b. **Year 5:** Revenue IDR 76,923,142,198; Net Profit IDR 9,339,750,323 (indicating stable business growth).
- c. **Year 10:** Revenue IDR 126,934,909,797; Net Profit IDR 34,322,939,257 (reflecting improved operational efficiency and cost management).
- d. **Year 15:** Revenue IDR 186,914,261,182; Net Profit IDR 58,024,565,773 (demonstrating consistent business growth and profitability).

These findings indicate that, despite increasing operational costs, effective cost management and financial strategies ensure sustainable profitability and business expansion.

7. Cash Flow Projections

The hospital's cash flow projections employ the direct method, which records actual revenue and expenditure within a specific period. This approach facilitates feasibility analysis by aligning income and expenses within the same period, providing an accurate financial overview.

No	Penerimaan	Pengeluaran			Kas Bersih	Akumulasi
		Operasional & Pajak	Investasi Pertahun	Deviden	Pertahun	Kas Bersih
1	49.441.704.409	33.125.941.954	3.582.564.516	-	12.733.197.939	12.733.197.939
2	54.477.195.191	37.197.135.429	3.761.692.742	556.488.354	12.961.878.665	25.695.076.604
3	60.832.352.735	41.956.131.604	3.949.777.379	1.514.185.176	13.412.258.576	39.107.335.180
4	68.404.560.902	47.626.503.968	4.147.266.248	2.655.286.658	13.975.504.028	53.082.839.208
5	76.923.142.198	53.285.557.775	4.354.629.561	4.371.003.151	14.911.951.711	67.994.790.919
6	85.879.236.019	60.381.308.550	4.572.361.039	6.776.932.205	14.148.634.226	82.143.425.145
7	94.157.813.378	66.834.179.896	4.800.979.090	8.775.162.070	13.747.492.321	95.890.917.466
8	103.577.872.862	71.376.403.259	5.041.028.045	11.701.863.743	15.458.577.815	111.349.495.281
9	114.494.927.623	79.373.626.832	5.293.079.447	13.943.959.729	15.884.261.614	127.233.756.895
10	126.934.909.797	88.281.649.268	5.557.733.420	16.063.135.572	17.032.391.538	144.266.148.433
11	138.432.177.501	95.434.841.740	5.835.620.091	18.669.580.711	18.492.134.959	162.758.283.392
12	148.999.967.177	102.919.795.812	6.127.401.095	20.519.282.074	19.433.488.196	182.191.771.588
13	160.594.467.327	111.131.948.378	6.433.771.150	22.548.690.624	20.480.057.175	202.671.828.763
14	173.331.066.412	120.153.026.779	6.755.459.707	24.778.003.035	21.644.576.892	224.316.405.655
15	186.914.261.182	129.773.731.970	7.093.232.693	27.155.496.782	22.891.799.737	247.208.205.392

In the first year, total revenue was recorded at IDR 49,441,704,409, while operational expenses and taxes amounted to IDR 33,125,941,954. Over time, revenue exhibited a significant upward trend. By the fifth year, revenue had increased to IDR 76,923,142,198. Additionally, an annual investment of IDR 3,582,564,516 was allocated, resulting in a net cash flow of IDR 12,733,197,939. Meanwhile, expenditures also increased to IDR 53,285,557,775, with total investment reaching IDR 4,354,629,561, leading to a net cash balance of IDR 67,994,790,919.

By the tenth year, revenue continued to rise, reaching IDR 126,934,909,797, with total expenditures amounting to IDR 88,281,649,268. Despite annual investments and dividend distributions, net cash flow remained positive, reaching IDR 18,087,977,487, with an accumulated balance of IDR 144,266,148,433. These projections indicate a positive financial growth trend for Bhayangkara Labuan Bajo Hospital, as evidenced by continuous increases in revenue and net cash flow. Although expenditures and investments have also risen, sound financial management ensures that net cash flow remains stable and continues to grow.

8. Break-Even Point (BEP) Analysis

The Break-Even Point (BEP) analysis for Bhayangkara Labuan Bajo Hospital is conducted to determine the minimum revenue required to avoid financial losses and achieve profitability. Based on this study, the hospital's production volume is set at 76,605 units, with a unit price of IDR 645,411. The hospital's fixed costs amount to IDR 28,218,588,299, while variable costs total IDR 21,259,932,896. As a result, the BEP calculation indicates that a minimum annual production of 76,705 units or a revenue threshold of IDR 49,506,295,139 must be met to avoid losses.

The payback period is calculated to be 8.14 years. Given the standard payback period range of 6 to 11 years, this investment is deemed financially feasible.

Asumsi Discount Rate		12%		
Tahun	Disc. Factor	Proceeds	PV Proceeds	Akumulasi Proceeds
1	0,8929	16.315.762.455	14.567.645.049	16.315.762.455
2	0,7972	17.280.059.762	13.775.557.846	33.595.822.217
3	0,7118	18.876.221.131	13.435.721.354	52.472.043.347
4	0,6355	20.778.056.934	13.204.830.816	73.250.100.281
5	0,5674	23.637.584.423	13.412.600.206	96.887.684.704
6	0,5066	25.497.927.469	12.918.043.581	122.385.612.173
7	0,4523	27.323.633.481	12.359.824.165	149.709.245.654
8	0,4039	32.201.469.603	13.005.633.489	181.910.715.258
9	0,3606	35.121.300.791	12.665.093.156	217.032.016.048
10	0,3220	38.653.260.530	12.445.315.398	255.685.276.578
11	0,2875	42.997.335.760	12.360.706.571	298.682.612.338
12	0,2567	46.080.171.365	11.827.632.268	344.762.783.703
13	0,2292	49.462.518.949	11.335.532.722	394.225.302.652
14	0,2046	53.178.039.634	10.881.280.505	447.403.342.286
15	0,1827	57.140.529.212	10.439.361.054 +	504.543.871.498
	PV. Proceeds		188.634.778.179	
	PV. Jml Invest		186.894.829.715 -	
	Net Present Value (NPV)		1.739.948.464	

9. Net Present Value (NPV) Analysis

The feasibility assessment of an investment using the Net Present Value (NPV) method is based on the net profit generated after the completion of an investment project. This net profit is calculated as the difference between the present value of the investment and the expected net cash flows in future periods. The NPV approach is a quantitative method that determines whether an investment is viable.

In the NPV analysis of Bhayangkara Labuan Bajo Hospital, a discount rate of 12% was applied. The NPV formula is defined as:

$$NPV = \sum \frac{CashFlow_t}{(1+r)^t} - InitialInvestment$$

Based on the calculations, the total present value of cash flows is IDR 188,634,778,179, while the investment value is IDR 186,894,829,715. As a result:

$$NPV=188,634,778,179-186,894,829,715=1,739,948,464$$

Since the NPV is positive, the hospital construction investment is deemed feasible. However, when considering the initial total investment of IDR 229,898,214,312, the NPV calculation results in:

$$NPV=188,634,778,179-229,898,214,312=-41,263,436,133$$

A negative NPV indicates that the investment is not financially viable under this scenario. The following table presents the detailed NPV calculations.

Asumsi Discount Rate		14%		
Tahun	Disc. Factor	Proceeds	PV Proceeds	Akumulasi Proceeds
1	0,8772	16.315.762.455	14.312.072.329	16.315.762.455
2	0,7695	17.280.059.762	13.296.444.877	33.595.822.217
3	0,6750	18.876.221.131	12.740.911.597	52.472.043.347
4	0,5921	20.778.056.934	12.302.277.713	73.250.100.281
5	0,5194	23.637.584.423	12.276.620.650	96.887.684.704
6	0,4556	25.497.927.469	11.616.512.749	122.385.612.173
7	0,3996	27.323.633.481	10.919.543.726	149.709.245.654
8	0,3506	32.201.469.603	11.288.516.749	181.910.715.258
9	0,3075	35.121.300.791	10.800.078.956	217.032.016.048
10	0,2697	38.653.260.530	10.426.477.746	255.685.276.578
11	0,2366	42.997.335.760	10.173.916.796	298.682.612.338
12	0,2076	46.080.171.365	9.564.359.008	344.762.783.703
13	0,1821	49.462.518.949	9.005.610.559	394.225.302.652
14	0,1597	53.178.039.634	8.493.064.155	447.403.342.286
15	0,1401	57.140.529.212	8.005.187.126	504.543.871.498
	PV. Proceeds		165.221.594.735	
	PV. Jml Invest		186.894.829.715	
	Net Present Value (NPV)		(21.673.234.980)	

10. Internal Rate of Return (IRR) Analysis

The IRR for this project is calculated at 12.15% (or 0.1239). Since the IRR exceeds the assumed discount rate of 12%, the project is considered profitable, as the expected rate of return is higher than the discount rate. However, when considering the initial total investment of IDR 229,898,214,312, the IRR is reduced to 8.48%, which is lower than the assumed discount rate, rendering the investment financially unfeasible.

CONCLUSION

During the planning process, the project initiators experienced enthusiasm and a sense of pride, as this project represents a significant effort to enhance healthcare services for the community. Several preparatory steps were undertaken, including obtaining recommendations from the Regent of West Manggarai, conducting a feasibility study, and coordinating cost estimation and hospital design. Considering the existing healthcare facilities in the surrounding area, Bhayangkara Labuan Bajo Hospital is projected to meet the demand for inpatient care, with a total bed capacity of 77.

In 2023, a site inspection was conducted by the Department of Spatial Planning and Land Affairs of West Manggarai Regency. The assessment confirmed that the designated hospital location complies with general zoning regulations and is approved for land use. Additionally, the availability of human resources in West Manggarai Regency is deemed sufficient to meet the operational needs of Bhayangkara Labuan Bajo Hospital, particularly in providing two essential specialist services: Internal Medicine and Surgery.

From a financial perspective, using the initial total investment of IDR 229,898,214,312, the NPV and IRR analyses indicated that the project was not financially viable. Consequently, investment rationalization was undertaken, reducing the total investment to IDR 186,894,829,715. Subsequent calculations, including the Break-Even Point (BEP), Payback Period, NPV, and IRR, demonstrated that the investment in Bhayangkara Labuan Bajo Hospital is financially feasible.

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