



ANALYSIS OF TECHNICAL AND FINANCIAL FEASIBILITY STUDY OF PROJECT DEVELOPMENT RENOVATION OF KAPUAS INDAH MARKET PROJECT AND PUBLIC SERVICE MALL

*Saffanah, Sasqia Nur¹, Lusiana², and Syahrudin³

^{1,2,3}Faculty of Engineering, University of Tanjungpura^{2, 3}, Pontianak

*sasqia.nursaffanah.sn@gmail.com

<p>Abstract</p> <p>Each district or city is required to establish a Public Service Mall for services to the community, therefore the Government wants to make the Kapuas Indah Market building multifunctional which has been neglected for a long time by having a Public Service Mall on the 3rd floor of the Kapuas Indah Market with a total building area of $\pm 7.380\text{m}^2$. The construction of this renovation will certainly have various impacts so it is necessary to carry out a feasibility study in terms of technical and financial aspects.</p> <p>Analysis of the technical aspects carried out is based on the Basic Building Coefficient (KDB) of 78,79%, Building Floor Coefficient (KLB) of 2,36, Green Area Coefficient (KDH) of 21,20%, Parking Space Requirement of 581 SRP, and Accessibility. The locations reviewed are in accordance with applicable regulations and guidelines that the technical aspects of the renovation of the construction of the Kapuas Indah Market and Public Service Mall can be said to be feasible or have met the requirements in the construction of a project. While the results of the financial feasibility analysis show that the renovation project for the construction of the Kapuas Indah market and the Public Service Mall is feasible (profitable) because the results obtained using the Net Present Value (NPV) obtained a value of IDR 7.479.615.115 as positive (≥ 0), the value of the Benefit Cost Ratio (BCR) of 1,099 as positive (≥ 1), the Internal Rate Of Return (IRR) is 7,15% $>$ MARR, and the Payback Period (PP) value is 23 years 8 months 18 days $<$ the investment plan is 30 years. The sensitivity results show that the feasibility assessment of financial parameters is very sensitive to the IRR parameters for increasing expenses and decreasing revenue costs.</p>	<p>Article history: Submitted 12-07-2023 Revise on 27-07-2023 Published on 04-01-2024</p> <p>Keyword: Technical Aspect, Financial Aspect, Sensitivity Analysis</p> <p>DOI: http://dx.doi.org/10.26418/jts.v23i4.67489</p>
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1. Introduction

Pontianak is one of the developing cities with high growth, migration and urbanization rates. Which indirectly affects the development of facilities and infrastructure that can support the growth of the surrounding community. Kapuas Indah Market is one of the markets that drives economic dynamics in Pontianak with a variety of trading commodities. The longevity of the

Kapuas Indah Market building which has reached 43 years makes it suitable for market conditions were already slum, the Kapuas Indah Market building was rehabilitated.

Based on Presidential Decree Number 89 of 2021 concerning the implementation of Public Service Malls which requires each district/city to establish Public Service Mall. So that the Pontianak City Government plans to

multifunction the Kapuas Indah Market building into a Public Service Mall to attract public interest in trade in the market. Beautiful Kapuas. Various forms of licensing services include population administration, licensing, and including driver lisenze extension services. By multifunctioning the Kapuas Indah Market building, of course, it will have an impact both in terms of financial aspects and technical aspects. Therefore, to support the construction of the Renovation of the Kapuas Indah Market and the Public Service Mall, a Feasibility Study study is needed with financial and technical aspects so that it can be assessed whether the renovation is feasible or not. Where this project is also multiyear in nature so that later this research can also be used as a future reference and can minimize the problems that will occur.

2. Materials and Methods

2.1 Theoretical Frame Work

To support the construction of the Renovation of the Kapuas Indah Market and the Public Service Mall, a Feasibility Study study is needed which aims to assess whether or not the project is feasible.

The formulation of the problem that will be discussed in this study is to determine the technical feasibility and financial feasibility of the Kapuas Indah Market Development Renovation project and the Public Service Mall. The following objectives are expected in this study:

- a. Analyze the technical feasibility based on the values of the Building Base Coefficient (KDB), Building Floor Coefficient (KLB), and Green Area Coefficient (KDH), Location Accessibility and Parking Space Needs.
- b. Knowing the amount of investment costs, the amount of income costs and the total expenses obtained.
- c. Analyze financial feasibility using the Net Present Value (NPV), Benefit Cost Ratio (BCR), Internal Rate Of Return (IRR), and Payback Period (PP) methods.
- d. Knowing the results of the sensitivity analysis of changes in the factors reviewed against financial feasibility.

As for the benefits of this research, it can be used as input for related parties in improving the feasibility of study and this research is expected to be a reference for other writers in the future.

2.2 Research Location

The project location is located in the center of Pontianak City, namely on Jl. Captain Marsan Darat, Sekip Army, Pontianak City District, Pontianak City can be seen in Figure 1 below:



Fig 1. Research Locations (*Pontianak Spatial Plan, 2021*)

2.3 Data

In this study, there are 2 data used, namely primary data and secondary data. Primary data is data obtained directly in the field, especially by making direct observations in the field related to project research locations

While the Secondary data is data obtained by collecting project technical data from project implementers and studying literature. The secondary data used is data that comes from several journals that have commensurate themes, applicable regulations, as well as secondary data obtained from the contractor, namely PT. Sinar Cahaya Pelita. Meanwhile, other data related to this analysis are assumed to be based on the prevailing literature.

2.4 Analysis Method

The data analysis method used in this study is the analysis of technical aspects and analysis of financial aspects

A. Technical Aspect Analysis

analysis of the technical aspects of the feasibility assessment is carried out to provide an overview of the technical parameters related to the physical implementation of the project (Soeharto, 2002).

1. Building Base Coefficient (KDB)

The building base coefficient or KDB is the percentage ratio between the area of the entire ground floor of the building and the area of the planning land/land controlled according to the spatial layout plan and the building and environmental layout plan (Pontianak City Regional Regulation Number 2 of 2013). building base coefficient is calculated using the formula:

$$KDB = \frac{DB}{LA} \times 100\% \tag{1}$$

Where :

- KDB = building base coefficient (%)
- DB = area of the entire ground floor of the building (m²)
- LA = construction area (m²)

2. Building Floor Coefficient (KLB)

Building Floor Coefficient or KLB is the ratio between the total floor area of the building and the area of plot/planning area controlled according to the spatial layout plan and the environmental and building layout plan (Pontianak City Regional Regulation Number 2 of 2013). Building floor coefficient is calculated using the formula:

$$KLB = \frac{LB}{LA} \tag{2}$$

Where:

- KDB = building base coefficient (ratio)
- LB = total floor area of the building (m²)
- LA = construction area (m²)

3. Green Area Coefficient (KDH)

Green Area Coefficient or KDH is a number percentage ratio between the total area of open space outside the building designated for landscaping/greening planning which is controlled in accordance with the spatial layout plan and the environmental and building layout plan (Pontianak City Regional Regulation Number 2 of 2013). Green area coefficient is calculated using the formula:

$$KDH = \frac{DH}{LA} \tag{3}$$

Where:

- KDH = green area coefficient (%)
- DH = green open space area (m²)
- LA = construction area (m²)

4. Location Accessibility

Location accessibility is carried out so that it is convenient and easy regarding how land use locations interact with each other and how easy or difficult the location is to reach (Tamin, 2000)

5. Parking Space Requirements

According to the Directorate General of Land Transportation, the factors that affect parking needs and the attraction of vehicle movement for shopping and office areas are the total area, effective area and income per capita at the prevailing prices. Standard requirements for trade centers presented can be seen in Table1.

Table 1. Size of Parking Space Requirement at Trade Center(Source: Guidelines for Planning and Operation of Parking Facilities, 1998)

Total Area (100m ²)	10	20	50	100	500
Needed (SRP)	59	67	88	125	415

B. Financial Aspect Analysis

Analysis of financial aspects is carried out to determine the amount of funds needed and how much the aspect of benefits derived from the costs to be incurred for the development of a project (Husnan and Suwarsono, 1999). These parameters include Net Present Value (NPV), Benefit Cost Ratio (BCR), Internal Rate of Ratio (IRR), Payback Period (PP), and sensitivity analysis.

1. Net Present Value (NPV)

Net Present Value (NPV) is a method of calculating net present value. A cash flow takes into account cash-in and cash-out, and/or only what can be measured in terms of costs or benefits. the results of the Net Present Value (NPV) calculation can be said to be feasible if the Net Present Value (NPV) value is positive (≥ 0).To calculate the value of Net Present Value (Soeharto,1999), you can use:

$$PVB = \sum_{n=0}^t Cb_n \left(\frac{P}{F}, i, n \right) \tag{4}$$

$$PVC = \sum_{n=0}^t Cc_n \left(\frac{P}{F}, i, n \right) \tag{5}$$

$$NPV = PVB - PVC \tag{6}$$

Where :

- NPV = Net Present Value
- PVB = Present Value of Benefit
- PVC = Present Value of the Cost
- Cb = Cash flow Benefit
- Cc = Cash flow Cost
- N = Investment Periode
- (P/F, i, n) = Current Interest Factor
- t = Period

2. Benefit Cost Ratio (BCR)

The benefit cost ratio method emphasizes the comparative value between the aspects of the benefits (benefits) that will be obtained with the aspects of the costs and losses that will be borne (cost) with the investment. The results of the Benefit Cost Ratio (BCR) calculation can be said to be feasible if the Benefit Cost Ratio (BCR) value is more than equal to 1. To calculate the value of Net Benefit cost ratio (Soeharto,1999), you can use:

$$BCR = \frac{PVB}{PVC} \tag{7}$$

Where :

- BCR = Benefit Cost Ratio
- PVB = Present Value of Benefit
- PVC = Present Value of the Cost

3. Internal Rate of Ratio (IRR)

Internal Rate of Return (IRR) is the internal rate of return that results in the NPV of cash inflows being the same as the NPV of cash outflows. IRR is a calculation of the time value of money, so cash flows are discounted on the basis of interest

rates. the interest rate used in the calculation of financial feasibility uses the MARR (Minimum Attractive Rate of Return) value with the WACC calculation as follows:

$$WACC = \left(\frac{E}{V} \times Re\right) + \left(\frac{D}{V} \times Rd\right) \tag{8}$$

Where :

- E/V = equity weight percentage
- D/V = debt weight percentage
- Rd = cost of capital based on debt
- Re = cost of equity capital

To calculate the value of Net Benefit cost ratio (Giatman, 2006) , you can use:

$$IRR = iNPV_+ + \frac{NPV_+}{(NPV_+ - NPV_-)} (iNPV_- - iNPV_+) \tag{9}$$

Where :

- IRR = Internal Rate of Return
- iNPV- = Interest rates that produces a negative NPV
- iNPV+ = Interest rates that produces a positive NPV
- NPV- = Net Present Value with a negative result
- NPV+ = Net Present Value with a positive result

4. Payback Period (PP)

The payback period is performed to calculate the time required when the total cash inflow equals the total cash outflow until it reaches the Break Even Point (BEP) (Umar, 2007). To calculate the value of payback period, you can use:

$$PP = (n - 1) + \left[C_f - \sum_{1}^{n-1} A_n \right] \left(\frac{1}{A_n} \right) \tag{10}$$

Where :

- PP = payback period
- C_f = first cost
- A_n = Cash flow in year n
- n = return year

5. Sensitivity Analysis

Sensitivity analysis is carried out to find out what will happen with the project analysis if there is a possibility of changing the basic assumptions in the calculation of costs and benefits. Because in determining the values for costs and benefits it is still an estimate, so that later it will not be the same as the value of the assumptions that have been made at the planning stage (Giatman, 2005). In addition, sensitivity analysis aims to reduce the risk of losses that will be borne so that it can show some precautions that must be taken to avoid losses that will occur in the future.

In the research process, to facilitate a series of directed and measurable activities, the authors designed a research flowchart as follows.

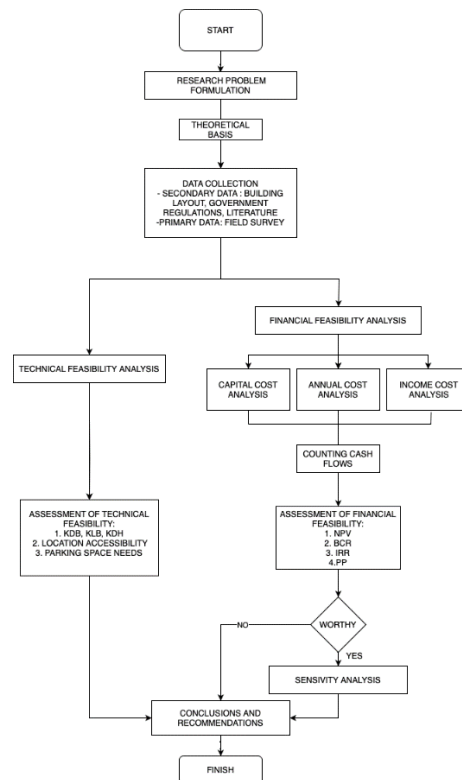


Fig 2. Research Flowchart

3. Result and Discussion

In discussing this research, first analyze the technical aspects, then the financial aspects.

Technical Aspect Analysis

Analysis of the technical aspects in this study includes the Basic Building Coefficient (KDB), Building Floor Coefficient (KLB), Green Area Coefficient (KDH), Analysis of Parking Space Needs and Location Accessibility.

1. Analyzing Building Base Coefficient (KDB), Building Floor Coefficient (KLB), and Green Area Coefficient (KDH)

In analyzing Building Base Coefficient (KDB), Building Floor Coefficient (KLB), and Green Area Coefficient (KDH), the Kapuas Indah Market Building and the Public Service Mall require building details as shown in Table 2.

Table 2. List of land and building areas of Kapuas Indah Market and Public Service Mall (Source: PT. Sinar Cahaya Pelita, 2022)

No	Function	Area	Total
1	Land		
	· Land Area (project area)	3.122m ²	3.122m ²
	· Area of Green Open Space (RTH)	662m ²	
2	Building		
	- Floor Building (1/2/3)	2.460 m ²	7.380m ²

Then the results of the analysis of Building Base Coefficient (KDB), Building Floor Coefficient (KLB), and Green Area Coefficient (KDH) of the Kapuas Indah Market Renovation Developm’ent Project and Public Service Mall (Pontianak City Regional Regulation No. 2 of 2013 concerning “Pontianak City Spatial Plan 2013 – 2033”) are presented in Table 3 .

Tabel 3. Analysis Results of Building Base Coefficient (KDB), Building Floor Coefficient (KLB), and Green Area Coefficient (KDH) Kapuas Indah Market and Public Service Mall Projects (Source: Data Analysis, 2023)

No	Government Regulation	Calculation Results	Information
1	The percentage of Building Base Coefficient (KDB) assessment for	Based on the calculation trade and service results, the value of the areas at the City Building Base Coefficient Service Center (KDB) is 78,79% complies with regulations, namely <80%	worthy
2	The percentage of Building Floor Coefficient (KLB) assessment for	Based on the calculation trade and service results, the value of the areas at the City Building Floor Coefficient Service Center (KLB) is 2,36 complies with regulations, namely KLB < 8	worthy
3	The percentage of Green Area Coefficient (KDH) assessment for	Based on the calculation results, the percentage value of the Green Area Coefficient (KDH) is 21,20%. in accordance with regulations, namely KDH > 10%	worthy

2. Analyze Location Accessibility

The purpose of arranging the accessibility of this area is so that it does not impede the activities of passing vehicles and access in and out is easier and more comfortable, and traffic for both market visitors and expeditions sending goods or merchandise and office employees going to the Kapuas Indah market and Service Mall The public becomes smoother. The following is a picture of the circulation layout planned by the construction team in the construction of the Public Service Mall.

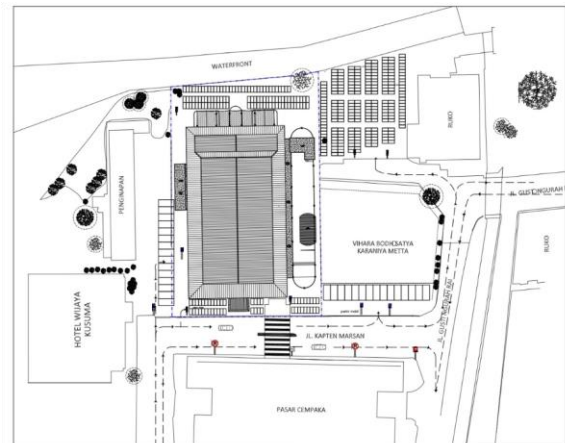


Fig 3. Arrangement of accessibility for the Kapuas Indah Market area and the Public Service Mall

2. Analyzing Parking Space Needs

For the availability of parking space with a building area capacity of 7.380 m² planned by PT. Sinar Cahaya Pelita is 1743,31 m² or 581 SRP with an area for motorcycles and cars respectively can be seen in Table 4.

Table 4. Availability of Parking Spaces at Kapuas Indah Market and Public Service Mall (Source: Data Analysis, 2023)

No	Data	Vehicle type	
		Car	Motorcycle
1	Available land area (L)	536,32 m ²	1209,99 m ²
2	Assuming maneuvers (M)	30%	20%
3	Area of land used (L' = L- (L x M))	375,42 m ²	1099,73 m ²
4	Required area of 1 vehicle (SRP)	11,50 m ²	2,00 m ²
5	Total of vehicles that can be accommodated (T = L'/ SRP)	32,64 unit	549,86 unit

Then the results of the analysis of the Parking Space Need for Public Service Malls and Kapuas Indah Market are obtained by using the interpolation method as follows:

$$X = X_1 + \frac{(Y-Y_1)}{(Y_2-Y_1)} \times (X_2 - X_1)$$

$$X = 88 + \frac{(7380 - 5000)}{(10000 - 5000)} \times (125 - 88)$$

$$X = 106 SRP$$

So that the planning of parking space units (SRP) provided by the contractor has fulfilled the required parking space units (SRP) in accordance with the Guidelines for Planning and Operation of Parking Facilities (1998).

Financial Aspect Analysis

The financial feasibility analysis is the basis for determining the financial resources needed for a certain level of activity and the profit that can be expected. Before calculating the financial aspect, it is necessary to specify data on the costs required for the construction of the Kapuas Indah market renovation project and the Public Service Mall.

1. Analyzing Revenue

- Building Rent
- Kiosk Rent

Each tenant pays a yearly kiosk rental fee based on Mayor of Pontianak Regulation number 13 of 2017 concerning Utilization of the Kiosk of the Regional Technical Implementation Unit for Pontianak City Market Business Services. The calculation of Kiosk Retribution Rates Per Year for 2024 is IDR 1.032.115.212,-

- Public Service Mall Rent

The building area used as a Public Service Mall is 1.975 m², and the building price is per m² is IDR 6.500.000,- with a coefficient multiplier of 1.120 based on Mayor of Pontianak Regulation Number 60 of 2020 concerning Unit Prices for State Buildings. Whereas for the rental adjustment factor for public service malls this is included in the type of social activity category III with a factor used of 5% based on governor regulations Number 140 of 2020, the building rental value for public service malls is IDR 59.454.799,-

- Parking Revenue

For the income from the parking area, the assumption is that visitors to the Kapuas Indah Market and the Public Service Mall will use parking lots every day using motorbikes, and cars. The available land area for parking is 1743.31 m². To determine the availability of parking space, the data and assumptions are obtained in Table 5. The parking rates are based on the Regional Government Regulation of the City of Pontianak number 8 of 2020 concerning Retribution for Parking Services on Public Roads. So that the amount of levy generated for the first year the building is operated is IDR 2.182.700.000/year

- Market Retribution Revenue and Public Service Mall

The amount of this fee is regulated based on Pontianak City Regional Regulation number 8 of 2020 concerning public service fees. So that the total income from the levy on the Kapuas Indah Market and the Public Service Mall is IDR 734.925.000/year.

- Public Service Mall Benefits

The benefits obtained from the assumption of saving on building maintenance costs and saving on managing public service malls costs. taken into account for the estimated savings

- Maintenance of Building Saving Costs

The cost of maintaining the building itself is assumed based on the Regulation of the Minister of PUPR RI number 19/PRT/M/2019. so that the amount obtained from the savings in building maintenance costs is IDR 49.140.000,-

- Saving Costs of Managing Public Service Malls

To calculate the benefits of saving the cost of managing public service malls in this study, it is assumed from the average number of permits issued by One Stop Integrated Service (PTSP) office in the last 5 years and the average hourly minimum wage in the area of West Kalimantan Province. The calculated benefits regarding the estimated time savings are assumed to be 1 day or the equivalent of 8 hours of work because administration can be done in one location.

From the assumptions used, the amount of benefits in the form of time savings obtained by the community with the existence of a public service mall in the first year of operation is IDR 594.454.989,-

so that the large benefit obtained from the construction of this Public Service Mall is Rp IDR 643.594.989

- Income Summary

The income earned comes from the rental of buildings, the Kapuas Indah market levy and the Public Service Mall, visitor parking and Public Service Mall benefits. Income is calculated for 1 (one) year, so the recapitalization of income can be seen in Table 5.

Table 5. Total Income Summary (Source: Data Analysis, 2023)

No	Source of Income	Total Amount
1	Building Rent Retribution	IDR 1.091.570.011,-
2	Garbage Retribution and Market Services	IDR 734.925.000 ,-
3	Parking Retribution	IDR 2.182.700.000,-
4	Benefits of the Public Service Mall (MPP)	IDR 643.594.989,-
Total Revenue per year		IDR 4.652.790.000,-

Market and the Public Service Mall for 1 (one) year is IDR 4.652.790.000,-

2. Analyzing Expenses

- Analyzing Cost of Capital

Project capital/investment costs consist of direct costs, indirect costs, and tax costs.

- Direct Cost

Based on the calculation assumptions above, the Budget Plan (RAB) used for the development project for the Renovation of the Kapuas Indah Market and Public Service Mall is IDR 22.479.951. 000,-. The calculation results can be seen in Table 6.

Table 6. Recapitulation of Kapuas Indah Market Building Renovation Calculations in the Kapuas Indah Market and Public Service Mall Renovation Project (Source: Data Analysis, 2023)

No	Building Type	Cost
1	New Building	IDR 10.117.438.500,-
2	Renovation Building	IDR 12.362.512.500,-
Total Cost Budget Plan (RAB)		IDR 22.479.951.000,-

- Unexpected Costs and Engineering Costs (Indirect Costs)

Indirect costs are the amount of unexpected costs and engineering costs. So that a total unexpected cost of IDR 1.937.287.800 was obtained and engineering costs IDR 4.019.416.507

- Tax Costs

The calculation of value added tax (VAT) costs is guided by the Regulation of the Minister of Public Works and Public Housing of the Republic of Indonesia number 1 of 2022 concerning Guidelines for Preparing Estimated Costs for Construction Work. value added tax (VAT) is 10% of the total cost of capital, so the estimated cost of work is the sum of the capital cost plus value added tax (VAT) can be seen in Table 7.

Table 7. Total Cost of Capital (Source: Data Analysis, 2023)

No	Type of Cost	Total Amount
1	Direct Costs	IDR 22.450.000.000,-
2	Unexpected Costs (Indirect Costs)	IDR 1.937.287.800,-
3	Engineering Costs (Indirect Costs)	IDR 4.019.416.507,-
Total Cost of Capital/Investment		IDR 27.623.365.057,-
	Tax VAT 10%	IDR 2.762.336.505,-
Total Investment/ Capital Cost		IDR 30.385.701.563,-

• Annual Cost Analysis

Annual costs are costs that are incurred annually after the project is completed, or when the building starts operating. Annual costs for this project are calculated from operational and maintenance costs, tax costs on income, and building depreciation costs.

- Operational and Maintenance Costs

The costs calculated in the operational and maintenance costs of this project are building maintenance costs, electricity costs, annual

maintenance costs.

- Building depreciation costs

The depreciation cost for the Pasar Kapuas Indah building and the Public Service Mall is carried out for 30 years starting in the first year of the building's operation, namely in 2024-2054 for a residual value of 20% based on the Regulation of the Minister of Public Works and Public Housing Number 22/PRT /M/2018 of 2018 concerning the Construction of State Buildings.

- Income Tax

For Income Tax (PPh) = 5% due to the transfer of land and/or building rights to the government, BUMN that receive special assignments from the government, or BUMDs that receive special assignments from regional heads. Meanwhile, the current Value Added Tax (VAT) rate is 10%. In order to obtain a recap of the expenditure of the Kapuas Indah Market per year which can be seen in Table 8.

Table 8. Annual Kapuas Indah Market Spending Recap (Source: Data Analysis, 2023)

No	Expenditure type	Total Amount
1	Operational and Maintenance Costs	IDR1.281.740.809,-
2	Building Depreciation Costs	IDR 810.285.375,-
3	Income Tax	IDR 384.114.572,-
Total Expenses per year		IDR2.476.140.757,-

3. Analyze Parameters of Financial Feasibility

After preparing the cash flow plan, a feasibility analysis of financial parameters is carried out using parameters including NPV, BCR, IRR, and PP.

• Net Present Value (NPV)

The calculation of the Net Present Value (NPV) at the Kapuas Indah Market and Public Service Mall uses the discounted value of the BI Rate interest rate of 5,28% based on the calculation results, the NPV value is IDR 7.479.615.115 positive (≥ 0), so this project is said to be feasible (profitable) for development is carried out.

• Benefit Cost Ratio (BCR)

This BCR method emphasizes the comparative value between the aspects of the benefits (benefits) that will be obtained with the aspects of the costs and losses that will be borne (cost) by the investment.

The results of the calculation show that the BCR value of the Kapuas Indah Market and Public Service Mall is 1,099 positive (≥ 1), it can be concluded that the construction of the Kapuas Indah Market and Public Service Mall is feasible to build.

• Internal Rate of Return (IRR)

The Internal Rate of Return (IRR) is the internal rate of return that results in the NPV of cash inflows being the same as the NPV of cash outflows. The IRR rate of return must be greater than the MARR (Minimum Attractive Rate of Return) value which is calculated using the WACC equal to 6,69%. Based on the trial error calculation results, the IRR value was 7,15% > MARR of 6,69%, so the Kapuas Indah Market and Public Service Mall projects were declared feasible within this parameter.

• Payback Period (PP)

This PP calculation is used to calculate the return on investment that has been used. Based on the calculation results, the return on investment for the Kapuas Indah Market and Public Service Mall project is 23 years 8 months 18 days (WORTHY), because the payback period obtained is < investment age, which is 30 years.

4. Sensitivity Analysis

Sensitivity analysis was conducted to determine the extent to which changes in several factors affect the feasibility parameters (NPV, BCR, IRR) for the development of the Kapuas Indah Market and Public Service Mall. In the sensitivity analysis the factors reviewed are the increase in costs and decrease in income. It is assumed that revenues and expenses have changed by IDR 400 million, IDR 500 million and IDR 600 million. The results of the calculation of the sensitivity analysis for the Kapuas Indah Market and Public Service Mall projects can be seen below.

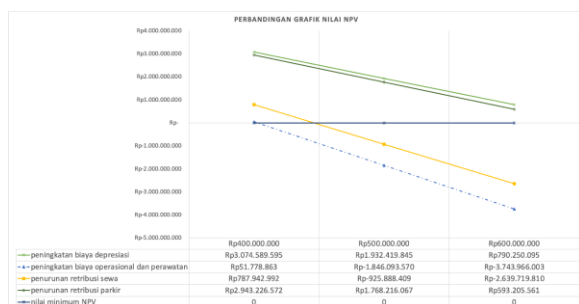


Fig.4 NPV Value Graph Comparison

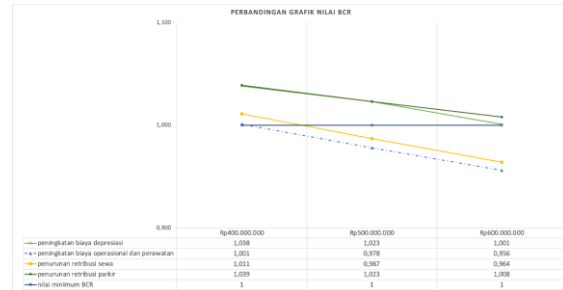


Fig.5 BCR Value Graph Comparison

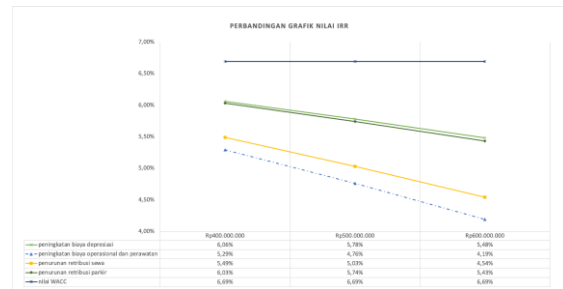


Fig.6 IRR Values Graph Comparison

4. Conclusion

From the results of the data analysis that has been carried out, several conclusions can be drawn, namely as follows:

1. The technical feasibility analysis refers to Pontianak City Regional Regulation number 2 of 2013 concerning the 2013-2033 Pontianak City Spatial Plan which is used, the KDB value is 78,79%, the KLB value is 2,36, the KDH value is 21,20% that meets regulatory requirements. So from an analysis of the technical feasibility of the construction of the renovation of the Kapuas Indah Market and Public Service Mall it can be said that it is feasible.
2. Analysis of the need for Parking Spaces refers to the Guidelines for Planning and Operation of Parking Facilities (1998), with a building area of 7,380m2 it is found that planning for the availability of parking space units is 650 SRP, fulfilling the requirements for parking space units based on guidelines, namely 106 SRP for trade areas, so that this planning can be used as a need for parking space which will be provided for the area.
3. The existing conditions in the Kapuas Indah Market area and the Public Service Mall have only one access where there are several activities and side barriers that make circulation ineffective at that access. Therefore, the authors make a location accessibility arrangement plan to overcome the problems that occur in the Kapuas Indah Market area and the Public Service Mall including:

- Entrance gates to the office and market areas will be made separate;

- Directing parked vehicles using the shoulder of the road to the parking area that will be provided later;
 - Provide traffic signs prohibiting parking on the roadside; And
 - Discipline the street vendors who are on the side of the road.
4. The investment cost required to carry out the Kapuas Indah Market Renovation development project and the Public Service Mall is IDR 30.385.701.563, -
 5. The income derived comes from calculating the building rental price, the Kapuas Indah market levy and the Public Service Mall, visitor parking and the Public Service Mall benefit with an amount of revenue of IDR 4.652.790.000,- while building expenses come from operations and maintenance costs. depreciation costs and income tax, so that the amount of expenditure obtained is IDR 2.476.140.757,-
 6. The financial feasibility analysis in terms of several feasibility parameters has the following results:
 - Net Present Future (NPV) of IDR 7.479.615.115 positive (≥ 0)
 - Benefit Cost Ratio (BCR) of 1,099 positive (≥ 1)
 - Internal Rate of Return (IRR) of 7,15% > 6,69% (MARR)
 - Payback Period (PP) of 23 years 8 months 18 days < 30 years

Based on the results of the financial feasibility analysis in terms of some of these parameters, it can be concluded that NPV positive (≥ 0), BCR positive (≥ 1), IRR > MARR, and PP < age of investment, so it can be said that this project is financially feasible because every parameter - parameters fulfill.
 7. The sensitivity analysis on the feasibility assessment of financial parameters is very sensitive to the IRR parameter for an increase in expenditure costs or a decrease in revenue costs reach of IDR 400.000.000,-

5. Acknowledgement

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6. Author's Note

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