

# Zero Investment Development Planning Motorcycle Parking Building Gramedia Pandanaran Semarang

Dianita Ratna Kusumastuti, Nur Setiaji Pamungkas, Komang Watara Bawasu, Maritsa Arda Nugrahaeni  
Civil Engineering Department, Semarang State Polytechnic, Indonesia

**Abstract:-** The city of Semarang is the area with the largest population in Central Java Province which has 1,656,564 residents with the highest use of motorbikes, namely 1,512,234 in 2021. This requires providers of goods and services to provide adequate parking spaces. The Gramedia Pandanaran Bookstore already has a parking space for motorbikes, but it is not sufficient to accommodate all the existing visitors. So, it is necessary to build a parking building with an alternative cost of Zero Investment where the construction costs only use parking revenues. This study aims to analyze motorcycle parking capacity, required construction costs, accumulation of parking revenue, revenue sharing with operators, number of years required for financing, costs that need to be incurred annually, and building maintenance and operational costs. The results of this study are for the distribution of income of 80% -20%, it takes 10 years with the annual cost of Rp. 1,115,741,090. For the distribution of income of 85%-15% and 87.5%-12.5, it takes 9 years with the annual costs of IDR 1,115,741,090. The maintenance costs required for painting steel are Rp. 112,579,942 every 5 years, lamp replacement is Rp. 25,389,495 every 9 years, and electricity payments are Rp. 9,817,560 every year.

**Keywords:-** Parking Area, Investment, Zero Investment.

## I. INTRODUCTION

In big cities parking area is a necessity for vehicle owners. Thus the planning of parking facilities is a planning method in organizing vehicle parking facilities, both on-street parking and off-street parking (Department of Land Transportation, 1998). The city of Semarang is the region with the fourth most populous population in Central Java Province, with a total of 1,656,564 residents with the highest use of motorbikes, namely 1,512,234 in 2021.

The Gramedia Pandanaran Bookstore located at Jalan Pandanaran no 122 Pekunden, Semarang City already has a parking lot for motorbikes but does not meet the existing needs so that it requires additional capacity by building a parking building but the costs required to build an adequate parking building costs a lot. just like opening a new Gramedia store branch.

This study reviews the planning costs used for the construction of the Gramedia parking building using the zero investment concept which can be interpreted by investors or building owners, namely the Gramedia Pandanaran Store only

uses parking revenue by involving third parties, namely parking operators to achieve investment objectives, namely parking building properties.

Parking operators are service providers who manage parking lots in a property area. Management carried out by parking operators includes arranging parked vehicles, recording the number of vehicles in and out and the income earned so that activities in the parking area and data collection are more organized. Thus, this research is expected to provide information about the capacity of the Gramedia Pandanaran parking building to zero investment financing.

## II. RESEARCH METHODS

### A. Place and time of research

This research was conducted at the Gramedia Pandanaran Building, Semarang, which is located at Jalan Pandanaran No. 122, Pekunden, Kec. Central Semarang, Semarang City 50249. The second location is PT Gramedia Asri Media as the regulatory holder for the construction of the Gramedia Pandanaran parking building, located on Jl. West Palmerah No.29-31, RT.1/RW.2, Gelora, Tanah Abang, Central Jakarta City. This research lasted for three months, from April to July.

### B. Research Procedure

The research procedure conducted by the author is as follows.

- *Formulation of the problem and objectives*
- *Preparation of proposals*
- *Data collection*

The data needed in this study are:

- Shop drawing
  - History of Gramedia Pandanaran and Gramedia Matraman parking revenues
  - History of revenue sharing with parking operators
  - Related books and regulations
- *Data analysis*
- Comparative analysis of existing and planned capacity to the number of parked vehicles in a certain period of time;
  - Calculation of RAB from the volume of construction work for the Gramedia Pandanaran Store parking building in accordance with the plan drawings;
  - The calculation of the net income of Gramedia Pandanaran and Gramedia Matraman is based on existing previous income data;

- Calculation of the amount of parking revenue sharing to parking operators and analysis of the number of years of return;
- Calculation of costs that must be incurred each year.

➤ *Drawing conclusions.*

### III. RESULTS AND DISCUSSION

#### A. Existing Capacity of Gramedia Pandanaran Land

The results of observations and measurements of the existing parking space at the Gramedia Pandanaran Bookstore for motorbikes are (25 x 7.5) meters and there is no SRP line or Parking Space Unit with the following details.

Table 1. Dimensions of the existing motorcycle parking area

Category	Area A	Area B	Area C	Area D
Length (m)	20	18,6	18,6	4,4
Effective length (m)	18	14,6	12,6	4,4
Width (m)	1,8	1,8	1,8	1,8
Effective width (m)	1,8	1,8	1,8	1,8

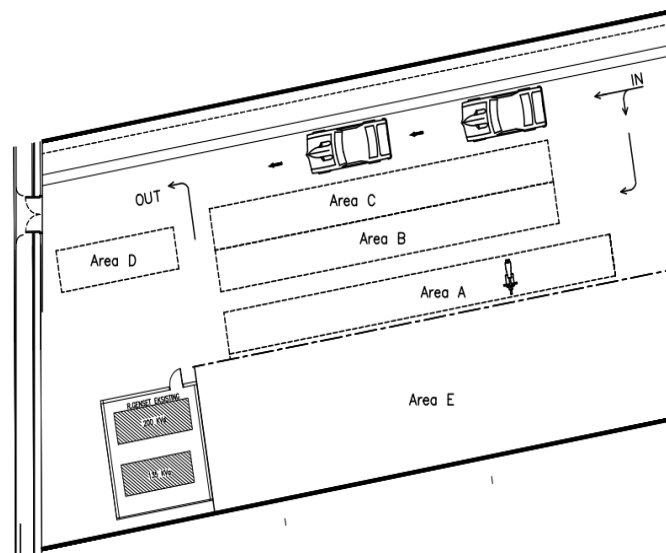


Fig 1. Lay out of the existing motorbike parking lot

With an effective length of 49.6 meters, the parking lot can only accommodate 70 motorbikes. The number of motorbikes parked on the land reached 78 during the shop's opening hours, so it was necessary to build a parking lot that could accommodate all the motorbikes of employees and visitors to the Gramedia Pandanaran Bookstore.

#### B. The planned capacity of the Gramedia Pandanaran Parking Building

The construction of the parking building at Gramedia Pandanaran uses all of the existing motorcycle parking space which can be seen in Figure 1, plus area E which is currently used as a book exhibition location so that the dimensions of the planned building are (17 x 28) meters. The planned SRP exceeds the existing standards, namely (2 x 0.8) meters.

Table 2. Number of SRP (Parking Space Units) per floor

Floor	Total SRP (Parking Space Unit)
1st floor	101
2nd floor	144
3rd floor	144
4th floor	157

#### C. Gramedia Pandanaran Parking Rates

Table 3. Comparison of Gramedia Pandanaran parking rates with regulations

	Semarang Mayor Regulation No 37 of 2021	Gramedia Pandanaran
Two and three wheels	IDR 2,000	IDR 3,000
Four wheels	IDR 3,000	IDR 4,000/first hour, IDR 1,000/the next 2 hours
Six or more wheels	IDR 15,000	-
Box cars/trucks	-	IDR 5,000

#### D. Development Budget Plan

The construction volume is calculated according to the existing working drawings. The prices used are based on the Semarang City HSPK for 2022. The following is the Budget Plan.

Table 4. Development budget plan

No.	Job	Total Price of Work
A	Preparatory work	DR 57,431,676
B	Earthworks	IDR 286,308,040
C	Foundation work	IDR 382,236,300
D	Main Structure Work	IDR 4,299,100,359
E	Ladder and Ramp Work	IDR 423,327,667
F	Roof Work	IDR 467,797,300
G	Railing Work	IDR 151,404,400
H	Painting Job	IDR 74,424,363
I	Paving Block Work	IDR 42,840,000
J	Electrical Work	IDR 47,625,968
<b>Sub-Total</b>		IDR 6,232,496,073
<b>10% tax</b>		IDR 623,249,607
<b>Total</b>		IDR 6,855,745,681
<b>rounded</b>		IDR 6,855,746,000
Spells "Six Billion Eight Hundred Fifty Five Million Seven Hundred Forty Six Thousand Rupiah"		

#### E. Sources of Financing Funds

The source of funds is obtained from predictions of parking revenue for Gramedia Pandanaran and Gramedia

Matraman based on the average historical income. This annual financing will later be paid to the parking operator as a third party who will finance the parking building project. The selection of parking operators is determined through a closed tender process by PT Gramedia Asri Media to determine an agreement in the form of project financing to be borne by the parking operator and the amount of revenue sharing obtained from the Gramedia Pandanaran and Gramedia Matraman

parking lots. An example of a parking operator that has collaborated with Gramedia Matraman is PT Securindo Packatama Indonesia.

*F. Gramedia Pandanaran Parking Revenue*

The history of Gramedia Pandanaran parking revenue for motorcycles, cars, and boxcars from June 2021 to May 2022 is as follows :

Table 5. The history of Gramedia Pandanaran motorcycle income

No	Month	Year	Motorcycle		Car		Box Car	
			Total	Revenue	Total	Revenue	Total	Revenue
1	June	2021	8,80	IDR 22,127,000	6,31	IDR 24,894,000	177	IDR 885,000
2	July	2021	1,14	IDR 2,523,000	412	IDR 1,627,000	34	IDR 165,000
3	August	2021	5,66	IDR 15,547,000	5,33	IDR 21,579,000	81	IDR 420,000
4	September	2021	8,37	IDR 22,806,000	7,19	IDR 29,404,000	174	IDR 885,000
5	October	2021	9,18	IDR 24,917,000	8,07	IDR 32,477,000	200	IDR 1,005,000
6	November	2021	8,57	IDR 22,045,000	7,32	IDR 29,441,000	174	IDR 870,000
7	December	2021	9,05	IDR 23,465,000	8,87	IDR 35,884,000	177	IDR 885,000
8	January	2022	9,97	IDR 26,281,000	9,60	IDR 39,101,000	213	IDR 1,094,000
9	February	2022	8,18	IDR 21,064,000	7,24	IDR 28,970,000	160	IDR 815,000
10	March	2022	10,89	IDR 28,407,000	8,94	IDR 35,833,000	174	IDR 870,000
11	April	2022	9,39	IDR 23,648,000	9,16	IDR 36,340,000	179	IDR 900,000
12	May	2022	11,02	IDR 28,598,000	9,94	IDR 39,632,000	117	IDR 615,000
Average			IDR 21,785,667		IDR 29,598,500		IDR 784,083	
Amount			IDR 52,168,250					
Amount per year			IDR 626,019,000					
Tax (20%)			IDR 125,203,800					
Net income			IDR 500,815,200					

*G. Gramedia Matraman Parking Revenue*

The history of Gramedia Matraman's parking revenue from May 2021 to March 2022 is as follows :

Table 6. History of Gramedia Matraman parking revenue

Month	Year	Net Income
May	2021	IDR 100,222,500
June	2021	IDR 91,320,000
July	2021	IDR 48,623,333
August	2021	IDR 69,792,500
September	2021	-
October	2021	IDR 108,099,000
November	2021	IDR 83,198,333
December	2021	IDR 93,080,833
January	2022	IDR 110,630,833
February	2022	IDR 93,584,000
March	2022	IDR 90,885,833
Average		IDR 88,943,717
Income/year		IDR 1,067,324,598
Tax (20%)		IDR 213,464,920
Net income		IDR 853,859,678

*H. Accumulated Income*

Revenue is assumed to increase by 25% within five years. The accumulation of Gramedia Pandanaran and Gramedia Matraman parking revenues is as follows.

Table 7. Accumulated parking revenue for Gramedia Pandanaran and Matraman

time period (year)	Increase (percent)	Annual Revenue
1-5	0	IDR 1,354,674,878
6-10	25	IDR 1,693,343,598
11-15	50	IDR 2,032,012,318

*I. Revenue Sharing with Parking Operators*

Zero investment investment can be achieved through cooperation with third parties, namely parking operators. All parking revenue will be received by the parking operator first, then divided according to the agreement. In this research, it is assumed that there are 3 possibilities for Gramedia's income as follows.

Table 8. Gramedia's income after divided by parking operators

Year to	Gramedia Revenue (80%)	Gramedia Revenue (85%)	Gramedia Revenue (87.5%)
1-5	IDR 1,083,739,903	IDR 1,151,473,647	IDR 1,185,340,519
6-10	IDR 1,354,674,878	IDR 1,439,342,058	IDR 1,481,675,648
11-15	IDR 1,625,609,854	IDR 1,727,210,470	IDR 1,778,010,778

**J. Determination of Financing Period**

This calculation uses Discounted Payback Period analysis. According to Giatman (2006), Payback Period Analysis aims to find out how long (period) the investment will be able to be returned when a break even-point occurs. This calculation is obtained from future parking revenues whose value is calculated to be the current value or Present Worth Benefit (PWB) is sought compared to the existing investment value. In the Discounted Payback Period analysis, the interest factor is included in the calculation. The interest taken is 10%.

$$k_{(PBP)} = \sum_{t=0}^k CF_t (FBP)_t \geq 0 \quad (1)$$

Payback Period = (PWB Accumulation - Investment value) ≥ 0

$$\text{Value of Present Worth Benefit} = P = \frac{F}{(1+i)^n}$$

$$P = F (P/F, i, n)$$

Where:

- K = payback period
- CF<sub>t</sub> = Cash flow t period
- FBP = present interest factor
- i = Interest Rate / Interest Rate
- n = amount of flowering periods
- P = Present / A number of present money values
- F = Future / Future value of "n" periods to come
- A = Annual / Serial payments for each period

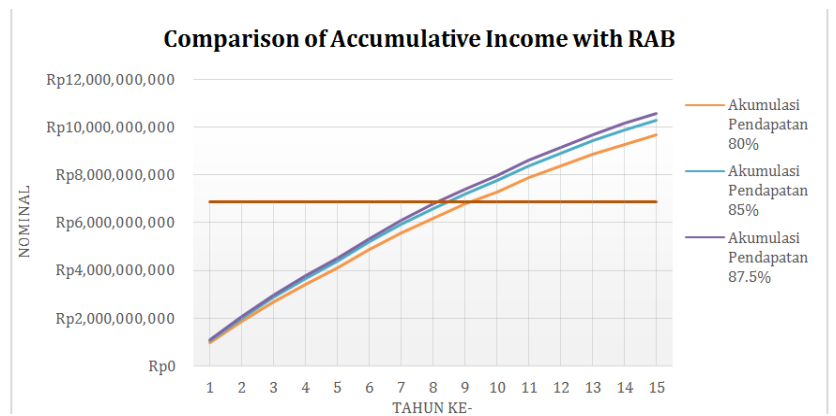


Chart 1. Graph of Accumulative Income Comparison with RAB

For the first division, namely 80% -20%, the intersection of the lines is between the 9th year and the 10th year so that a 10 year period is taken. For the second division, namely 85% - 15%, the intersection of the lines is between the 8th and 9th years so that a period of 9 years is taken. For the third division, which is 87.5% -12.5%, the intersection of the lines is between the 8th and 9th years so that a period of 9 years is taken.

P = IDR 6,855,746,000  
 i = 10%  
 n = 9

**K. Annual Financing**

The calculation of the financing issued by Gramedia every year uses the annual cash flow which is obtained from the value of the current budget plan (P), interest (i) = 10%, from the latest world bank interest rate data, namely 2020, and the year period (n) of the calculation previously

a. Expenses incurred annually within a period of 9 years

$$A = P \left[ \frac{i(1+i)^n}{(1+i)^n - 1} \right]$$

$$A = 6,855,746,000 \left[ \frac{0,1 (1 + 0,1)^9}{(1 + 0,1)^9 - 1} \right]$$

A = 1,190,435,431 (E)

The table of costs incurred for the construction of the Gramedia Parking Building is as follows.

Table 9. Expenses incurred within 9 years

Years to	Payable	Interest	Cumulative	Cost incurred	Cumulative
A	B	C = 10% x B	D = B+C	E	F = A x E
1	IDR 6,855,746,000	IDR 685,574,600	IDR 7,541,320,600	IDR 1,190,435,431	IDR 1,190,435,431
2	IDR 6,350,885,169	IDR 635,088,517	IDR 6,985,973,686	IDR 1,190,435,431	IDR 2,380,870,862
3	IDR 5,795,538,254	IDR 579,553,825	IDR 6,375,092,080	IDR 1,190,435,431	IDR 3,571,306,294
4	IDR 5,184,656,649	IDR 518,465,665	IDR 5,703,122,314	IDR 1,190,435,431	IDR 4,761,741,725
5	IDR 4,512,686,882	IDR 451,268,688	IDR 4,963,955,571	IDR 1,190,435,431	IDR 5,952,177,156
6	IDR 3,773,520,139	IDR 377,352,014	IDR 4,150,872,153	IDR 1,190,435,431	IDR 7,142,612,587
7	IDR 2,960,436,722	IDR 296,043,672	IDR 3,256,480,394	IDR 1,190,435,431	IDR 8,333,048,018

Years to	Payable	Interest	Cumulative	Cost incurred	Cumulative
A	B	C = 10% x B	D = B+C	E	F = A x E
8	IDR 2,066,044,963	IDR 206,604,496	IDR 2,272,649,460	IDR 1,190,435,431	IDR 9,523,483,450
9	IDR 1,082,214,028	IDR 108,221,403	IDR 1,190,435,431	IDR 1,190,435,431	IDR 10,713,918,881
10	IDR 0	IDR 0	IDR 0	-	-

b. Expenses incurred annually within a period of 10 years

P = IDR 6,855,746,000

i = 10%

n = 10

$$A = 6,855,746,000 \left[ \frac{0,1 (1 + 0,1)^9}{(1 + 0,1)^9 - 1} \right]$$

A = 1,115,741,090 (E)

The table of costs incurred for the construction of the Gramedia Parking Building is as follows.

Table 10. Expenses incurred within 10 years

Year to	Debt	Interest	Amount	Cost incurred	Cumulative
A	B	C = 10% x B	D = B+C	E	F = A x E
1	IDR 6,855,746,000	IDR 685,574,600	IDR 7,541,320,600	IDR 1,115,741,090	IDR 1,115,741,090
2	IDR 6,425,579,510	IDR 642,557,951	IDR 7,068,137,461	IDR 1,115,741,090	IDR 2,231,482,180
3	IDR 5,952,396,371	IDR 595,239,637	IDR 6,547,636,008	IDR 1,115,741,090	IDR 3,347,223,270
4	IDR 5,431,894,918	IDR 543,189,492	IDR 5,975,084,410	IDR 1,115,741,090	IDR 4,462,964,360
5	IDR 4,859,343,320	IDR 485,934,332	IDR 5,345,277,652	IDR 1,115,741,090	IDR 5,578,705,450
6	IDR 4,229,536,562	IDR 422,953,656	IDR 4,652,490,218	IDR 1,115,741,090	IDR 6,694,446,540
7	IDR 3,536,749,128	IDR 353,674,913	IDR 3,890,424,041	IDR 1,115,741,090	IDR 7,810,187,630
8	IDR 2,774,682,951	IDR 277,468,295	IDR 3,052,151,246	IDR 1,115,741,090	IDR 8,925,928,720
9	IDR 1,936,410,156	IDR 193,641,016	IDR 2,130,051,172	IDR 1,115,741,090	IDR 10,041,669,810
10	IDR 1,014,310,082	IDR 101,431,008	IDR 1,115,741,090	IDR 1,115,741,090	IDR 11,157,410,900
11	IDR 0	IDR 0	IDR 0	-	-

L. Comparison of Income with Fees Paid

There needs to be a comparison between the income earned and the fees paid so that it can be seen how much is lacking and the remaining income in each of Gramedia's revenue acquisition. The graph of the comparison of income with costs incurred each year is as follows.

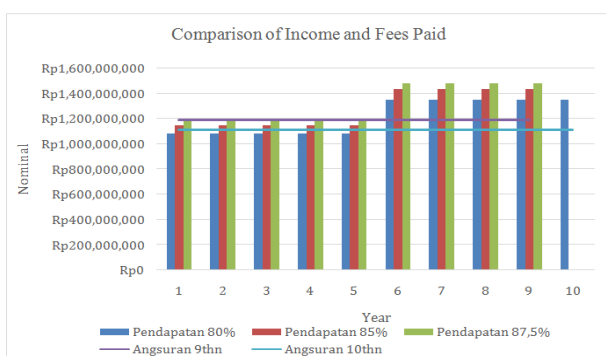


Chart 2. Comparison of Income and Fees Paid

The following is a graph of the remaining income in the 3 distributions of income, namely 80% -20%, 85% -15%, and 87.5% -12.5%.

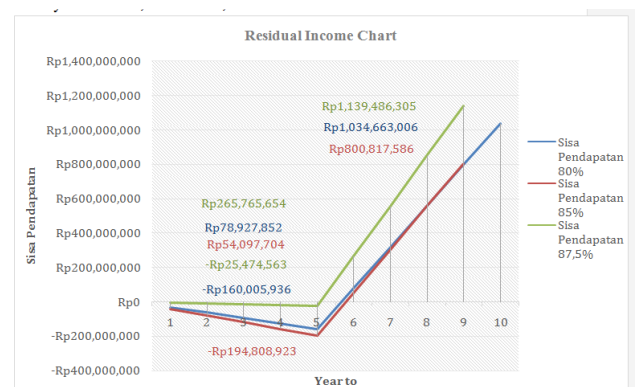


Chart 3. Equation result

Of the 3 distributions of income, all three have in common that there is a lack of income resulting in a negative

value in the first 5 years. The shortfall starts to pay off between the 5th and 6th years.

*M. Operational and Maintenance Costs*

Operational and maintenance costs include costs that will be incurred for the maintenance and operation of the Gramedia Pandanaran motorbike parking building within a certain period of time.

Table 12. Maintenance and Operational Costs

No	Work Item	Frequency	Source	Cost
1	Maintenance			
a	Steel painting	5 years	According to PT. Gramedia Asri Media	IDR 112,579,942
b	Lamp Replacement	Damage has occurred or is past its service life	Regulation of the Minister of Public Works Number: 24/PRT/M/2008 December 30, 2008 Concerning Guidelines for the Maintenance and Care of Buildings	IDR 25.389.495
2	operational			
c	Electricity	Each month		IDR 9.817.560

1. Painting

Painting maintenance includes painting steel on columns, beams, roof trusses, and stairs. The cost required for one painting is:

Scraping rust and old paint

- Total Area = 1793.531023 m<sup>2</sup>
- Cost = IDR 21,274
- Total Cost = IDR 38,155,579
- Total Area = 1793.531023 m<sup>2</sup>
- Cost = IDR 41.496
- Cost = IDR 74,424,363
- Total Cost = IDR 112,579,942

2. Lamp Replacement

- Lifetime = 20.000 hours
- Daily use = 6 hours
- The length of time the lamp needs to be replaced =  $\frac{20.000}{6 \times 365} = 9,13 \text{ years} = 9 \text{ years}$
- Number of lights = 214 buah
- Number of dots = 107
- Point lamp replacement costs = IDR 237.285
- Lamp replacement costs = 107 x Rp237.285 = IDR 25.389.495/9 years

3. Electricity

- use time = 6 hours
- Power = 14,5 watt
- Number of lights = 214
- Lamp power 1 year = number of lamps x power x time x 365 = 214 x 14,5 watt x 6 x 365 = 6.795,57 kwh
- Rate = IDR 1.445
- Cost = IDR 1.445 x 6.795,57 = IDR 9.817.560

IV. CONCLUSION

The existing parking capacity for motorbikes at the Gramedia Pandanaran bookstore is 70 Parking Space Units (SRP) with 78 motorbikes parked so that the land does not fulfill. Meanwhile, the Parking Space Unit (SRP) planned for the Gramedia Pandanaran motorcycle parking building is 546 Parking Space Units. The required development costs are IDR 6,855,746,000. In carrying out the operational implementation of the parking building, Gramedia works closely with parking operators, so it is necessary to calculate revenue sharing. The accumulated net income earned by Gramedia at the 80%-20% distribution is IDR 1,083,739,903. As for the 85%-15% distribution, which is IDR 1,151,473,647 and the 87.5%-12.5% distribution, which is IDR 1,185,340,519. This income will increase by 25% every 5 years. The financing period required for the distribution of 80% -20% is 10 years. For the distribution of 85%-15% and 87.5-12.5% it takes 9 years. All of these distributions, will experience a shortage in the first five years of payment and the deficiency will be paid in the sixth year of payment. Operational costs for electricity and maintenance of the motorcycle parking building are IDR 9,817,560 annually, IDR 112,579,942 every 5 years, and IDR 25,389,495 every 9 years.

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