

## **ECONOMIC FEASIBILITY STUDY OF EMERALD HOTEL IN PANGANDARAN**

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*Abstract. The purpose of this research is to analyze the feasibility of Emerald Hotel which located in Pangandaran, West Java. Pangandaran Beach tourism has been improving from year to year so that the high quality accommodation to retain the tourist is needed. However, there is a lack of availability of this accommodation that can result in loss of potential tourist due to switch to another tourism object and the feasibility study of the hotel in economic aspect had not been conducted. This research is to know whether this project is feasible or not and to give a recommendation what step must be conducted to make the project more profitable. This research will explain comprehensively start from the background of the problem, the objectives of the research, concept which is used in this research based on financial books and websites, the systematic method in develop the research, data collection method, detail calculation in order to catch project's Net Present Value, Internal Rate of Return, and Payback Period until give conclusion and recommendation for the project. The conclusion of this project based on data calculation in this research is Emerald Hotel project is feasible to do. The result of Net Present Value is Rp 34,013,249,479 which is greater than zero, Internal Rate of Return is 36.15% which is greater than WACC (11.25%) as hurdle rate, and Payback Period for 3 years 2 months.*

*Keywords: Feasibility Study; Net Present Value; Internal Rate of Return; Payback Period*

### **Introduction**

Pangandaran Beach is one of the famous tourism place in Indonesia which located in West Java. It was formed as administration district in 2012 and have a central office in Parigi. It has 168,509 Ha land area with 67,340 Ha sea area and has 91 kilometers coastline. This area becomes famous through its tourism with natural magnificence and fishery richness from year to year. Tourists, both foreigner and domestic mostly visits the tourism objects such as west and east Pangandaran Beach, Pananjung Conservation Forest, Batu Hiu Beach, Green Canyon, and Batu Karas Beach. This tourism objects provides many kind of beach attractions like scuba diving, snorkeling, wind surfing, boating to the White Sands, also enjoying coral and exotic fish under the sea. All the objects is supported with the availability of various class of accommodations, restaurants, and the other entertainment places. Pangandaran has unique geographic place surrounded by the Hindian Ocean in its right and left side.

Pangandaran west beach is located adjacent with the sea in the left side whereas east beach in the right side. West beach has a slope coastline characteristics, perfect wave for surfing, and commonly are safe for recreation activity such as sunbathing. Meanwhile, east beach has steep and rocky coastline but this beach has small wave to do water sport such as banana boat and parasailing. The area down the picture is Pananjung Conservation Forest with a lot of organism both plant and animal. From fishery sector, Pangandaran produced 2,220 tons of seafood (marine fishery dominant) with the value around 43.03 billion rupiahs. Another supporting sector that support tourism and fishery sector is agriculture and farming. Based on Pangandaran Governement, in agriculture sector, Pangandaran has 13,000 hectare field which is planted by some kind of corn, soybeans, greenbeans, and sweet potato. In farming sector, there is 173,719 livestock lived in Pangandaran including horse, cow, sheep, buffalo, and goat.

According to Dinas Pariwisata Perindagkop dan UMKM Kabupaten Pangandaran, the amount of tourist visited Pangandaran is 2.301.882 people in 2015, the highest number of tourist since tsunami hit in 2006. This number is predicted would be increased in the following year as the result of the development of the infrastructure in Pangandaran and the tourism sector itself which become one of the main focus from Indonesian government's programs under President Joko Widodo. The amount of accommodations existed is 201 building which consist of 1 hotel star class, 25 hotels melati tiga class, 20 hotels melati dua class, 50 hotels melati satu class, 6 cottage style class, and 59 wisma pariwisata class. The total of room provided by those accommodations is around 3676 rooms.

#### *Problem Identification*

As one of the famous beach with a lot of tourist visits, Pangandaran Beach demands a lot of high quality accommodation to retain the tourist especially to fulfill middle-high tourists demand. Unfortunately, the amount of quality accommodation doesn't meet with tourist requirements. The availability of star-class quality hotel still low and the need of it is increasing parallel with the growth of the amount of tourist. There is only one 1-star class hotel with many budget hotels spread throughout Pangandaran. Moreover, the high amount of tourists visit Pangandaran in 2015 which is about 2 million people cannot be accommodated by the hotels in Pangandaran which only have 3676 rooms capacity in total. When the other tourism objects in other places are constant developing their infrastructure, Pangandaran authority and investor must be smart to utilize this condition unless they have potentially loss the tourist interest because switching to another tourism object in the world. One investor from Bandung is interested to build the hotel. Emerald Hotel as a hotel name of this project provide a quality accommodation with 2-star class hotel grade. However, the feasibility study in economic aspect had not been conducted. Due to examine whether this project is feasible or not, feasibility study must be projected.

#### *Objective*

The aim of this feasibility study is to investigate the feasibility of building new 2-star class hotel in Pangandaran, also the calculation of the costs which involved, potential profits resulted, and return on investment. The result of this research is the statement whether the project is feasible or not as a consideration to do a further development of the hotel. This research will help the investor of the need of accurate Net Present Value (NPV), Internal Rate of Return (IRR), and Payback Period.

#### *Research Questions*

Research questions consist of the questions which will be answered to accomplish this research. That questions is :

How about the NPV and Internal Rate of Return calculation of the project?

How about the payback period of the project ?

Is the project feasible or not from the economical aspect?

#### *Assumptions and Scope of Limitations*

Scope of limitation consists of the research scope, some assumptions related with this project, and the limitation of the research. Below are some assumptions the author used related with this project:

All fund collected is from single investor. There is no third party such as bank or other investor that lends or borrows their money to this investor.

Indonesian and Pangandaran economic condition is perfect constant which means there is no inflation happened and deflation. If there is inflation or deflation, the price level will fluctuate equally and proportionally. So that, the decision of the feasibility study unchangeable.

The scope of the research is focused on economic analysis with marketing analysis at a glance.

#### **Theoretical Foundation**

##### *Feasibility Study*

Feasibility study means the study to search potential alternative that the alternative itself selected for further analysis assessment, based on preliminary evaluation, to meet or surpass the requirement for the situations (William G. Sullivan, 2006). Another source explain feasibility study is an analysis of the ability to complete a project successfully, taking into account legal, economic, technological, scheduling and other factors. A feasibility study allows project managers to investigate the possible negative and positive outcomes of a project before investing too much time and money (Investopedia ).

### Economic Feasibility Study

Economic feasibility study emphasizes to find out the project with positive economic value added. Economic feasibility study is conducted to know whether the project is feasible or not from economical perspective. Economical perspective itself assumes the source of fund that used for build the investment project is from single investor without any supporting party such as bank and other investors. This feasibility study also considers about cost and benefit analysis. If the benefit is higher than its cost, the project could be implemented. In the other hand, if the cost is higher than its benefit, it would be better not to implement the project because it is not profitable enough. The analysis tools to calculate economic feasibility study are net present value (NPV), internal rate of return (IRR), and payback period.

### Net Present Value (NPV)

The concept of Net Present Value is that an investment is worth undertaking if it creates value for the owner (Stephen A. Ross, 2010). The technique of NPV is considered the time value of money to count the present value of the cash flow that the investment generates with rate equal minimum acceptable rate of return (MARR) and the investment which has value greater than zero means the project is feasible and should be chosen. As an opposite, if the investment has value less than 0 means the project is not feasible. To determine Net Present Value, we can find the present value of the after tax cash flow of the project. Net Present Value can be found by calculate present worth of all cash flow relative to some base or beginning point in time. Based on Engineering Economy (William G. Sullivan, 2006), the formula is :

$$PW(i\%) = \sum_{k=0}^N F_k(1+i)^{-k} \dots\dots\dots(1)$$

Where:

- i = effective interest rate or MARR per compounding period
- k = index for each compounding period
- F<sub>k</sub> = future cash flow at the end of period k
- N = number of compounding period in the planning horizon

### Weighted Average Cost of Capital (WACC)

WACC is the product of the fraction of total capital from each source and the cost of capital from that source, summed over all sources. The formula used for calculate WACC is :

$$WACC = \lambda(1-t)i + (1-\lambda)e \dots\dots\dots(2)$$

Where:

- λ = the fraction of the total capital obtained from debt
- (1-λ) = the fraction of the total capital obtained from equity
- t = effective income tax rate as a decimal
- i = the cost of debt financing as measured from appropriate bond rates
- e = the cost of equity financing, as measured from historical performance of the CAPM

If the risks are roughly normal, and there are no significant capital limitations, WACC is an appropriate hurdle rate. If the project riskier than the current business, then an upward adjustment in the MARR might be appropriate. (William G. Sullivan, 2006)

### Internal Rate of Return (IRR)

Internal Rate of Return is the discount rate that equates the NPV of an investment opportunity with \$0 (Lawrence J. Gitman, 2012). The internal rate of return (IRR) of the project is the discount rate which the Net Present Value of the project is zero and the worth from all the revenue that happened from the investment is equal with the worth from all the expense. An accepted investment is the investment with the Internal Rate of Return exceeds the firm's minimum acceptable rate of return. The basic rationale behind the IRR method is that it provides a single number summarizing the merits of a project. That number does not depend on the interest rate prevailing in the capital market. That is why it is called the internal rate of return which means the number is internal or intrinsic to the project and does not depend on anything except the cash flow of the project. (Stephen A. Ross, 2010)

According to Engineering Economy (William G. Sullivan, 2006) IRR is the  $i\%*$  at which

$$\sum_{k=0}^N Rk \left( \frac{P}{F}, i' \%, k \right) = \sum_{k=0}^N Ek \left( \frac{P}{F}, i' \%, k \right) \dots\dots\dots(3)$$

Where:

Rk = net revenues or savings for the *k*th year

Ek = net expenditures, including any investment costs for the *k*th year

N = project life

### Payback Period

The definition of payback period is the amount of time required for an investment to generate cash flow sufficient to recover its initial cost. The payback period can be found by dividing initial investment by the annual cash flow. Also, with calculating how long the project to reach breakeven. The condition when the amount of revenue is equal with the amount of the total cost is the breakeven point. Payback period is the period to reach this breakeven point. The payback period rule for making an investment is simple. For example, before decide any investment decisions, select a particular cutoff date. All investment projects that have payback period of that cutoff date or less are accepted. All of those that payoff in more than that cutoff date are rejected.

### Sensitivity Analysis

Sensitivity analysis is an approach which examines how sensitive a particular NPV, IRR, and payback period calculation is to changes in underlying assumptions (Stephen A. Ross, 2010). Sensitivity analysis is the tool to analyze the risk of the project based on most likely, pessimistic, and optimistic prediction. Sensitivity analysis checks out the project's underlying assumptions about revenue and cost. Revenue estimation depend on three assumptions such as market share, market size, and price. Whereas, cost estimation depend on two assumptions such as fixed cost and variable cost. Sensitivity analysis is widely used in practice because it has an advantage which shows where more information is needed. If the effect of incorrect estimates on revenues is greater than the effect of incorrect estimates on costs, more information about the factors determining revenues might be needed.

## Methodology

### Research Design

In creating and compiling the research about feasibility study of Hotel XYZ in Pangandaran, researcher applied several steps of process to conduct systematic research of the final project. The diagram of the steps are shown below.



Figure 1 Research Design Outline

### Background

The beginning step of doing the research is to recognize the background of the economic condition in Pangandaran as a place where the research conducted. This insight is beneficial to conduct what the problem should be raised and how to solve the problem. After understand the condition, the second step is to identify the problem of this research using fish bone diagram and set the research objectives. The main objective of the research is to know the feasibility analysis of Hotel XYZ in Pangandaran whether the project is worthy doing or not based on the data that researcher gathered from several sources. Below is the diagram of fish bone analysis.

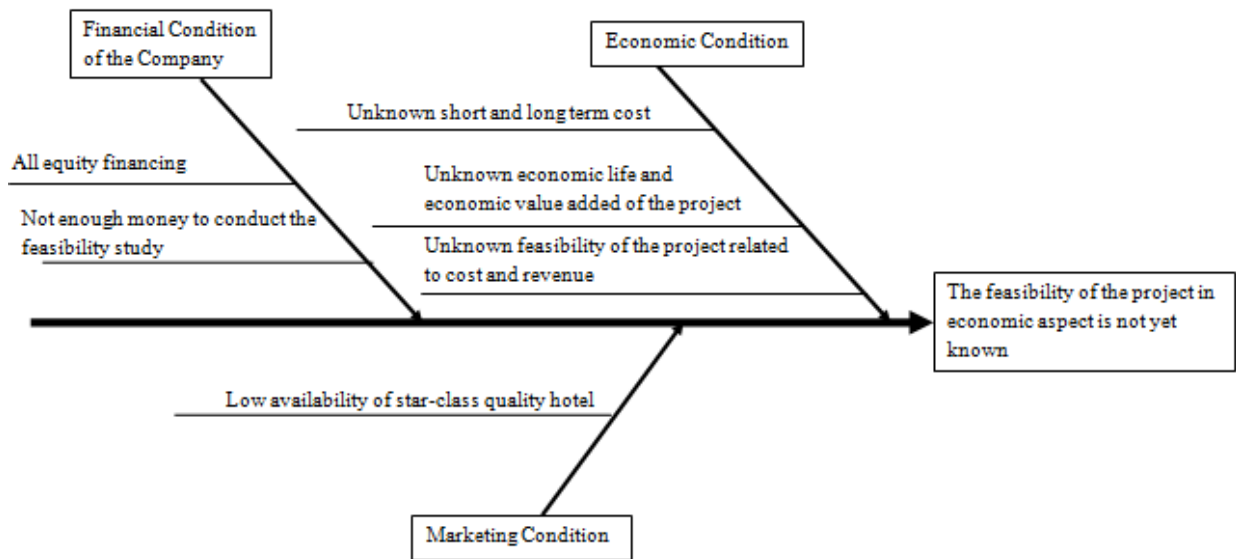


Figure 2 Fishbone Diagram

The problem is the feasibility of the project in economic aspect for the next 20 years is not yet known because the economic feasibility study had not been conducted before the project was built. The problem that caused economic feasibility study had not conducted because the company has not enough money to conduct it, low availability of star-class quality hotel in Pangandaran as a benchmark, and unknown short term cost, long term cost, and economic life and value of the project. The problem that cause economic feasibility must be conducted are this project is all equity financing and unknown feasibility of the project related to cost and revenue. The main objective of the research is to know the feasibility analysis of Hotel XYZ in Pangandaran whether the project is worthy doing or not based on the data that researcher gathered from several sources.

#### *Theoretical Foundation*

To do this research, researcher used several existing theoretical foundations and definitions as references. These theories and definitions helps the researcher to comprehend some basic understanding to support the research. The literature review is taken from books, academic journals, trusted website, and the other resources.

#### *Data Collection*

The next step is to collect necessary data for the research. The data was collected with many several ways from different sources both primary and secondary data. Primary data consist of the information that obtained from the hotel developer, management, and local government. The secondary data was collected from books and several trustworthy website. The secondary data includes competitor profile and tourism condition in Pangandaran.

This is the list of data that was collected :

Project Initial Investment which consist of the land price, building cost, project design and architecture, legal cost, interior cost, recruitment cost, and any other cost until the project is ready to serve the consumer.

Project annual expense include fixed cost, variable cost, and semi variable cost such as day to day operation cost, curative and preventive maintenance cost, employee salary, incentive wage, and depreciation

Project annual revenue such as income as the result of the sales

Salvage Value of the project until determined number period of time

#### *Data Analysis*

The analysis that conducted in this research is started with preceding short analysis before economic feasibility analysis. Those analysis are legal analysis and marketing analysis. Legal analysis defines hotel's legality and responsibility to oblige the law especially about land legality and building permit. Marketing analysis explains competitor analysis such as recognizing their hotel capacity and their value added, location analysis to assess the worthiness of the location, and tourism analysis to know tourism preference and behavior. After analyzed those analysis, the next step is to analyze economic feasibility study. The study conducted according to this cash flow diagram.

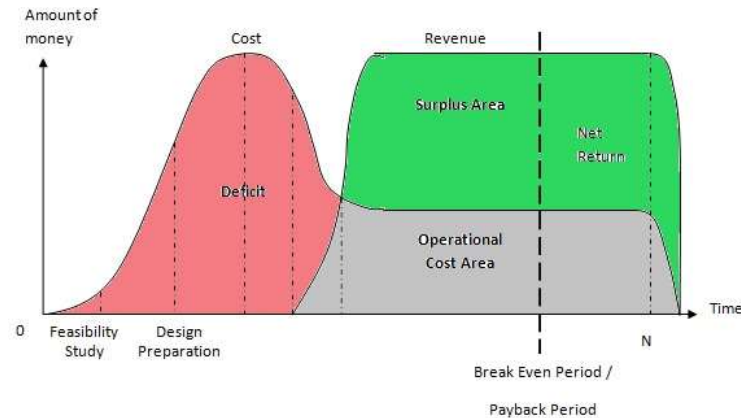


Figure 3 Actual Cash Flow Diagram

This diagram shows about the outline of the analysis of this project. The initial investment is determined from building cost and any other cost that needed until the hotel is ready for servicing consumer. Annual expense and revenue is found by forecasting based on sales projected. In fact the cash flow of the annual revenue and cost is not as smooth as figure 3.2 shows. So, figure 4 develop the actual cash flow that is very common. The result of the analysis is to know the NPV, IRR, and payback period to determine whether the project is feasible or not feasible.

#### Conclusion and Recommendation

The final step of this research is to make the conclusion of the feasibility of the project and to compare with preceding feasibility study whether it is accurate or not. Furthermore, this research attempts to propose some recommendation to make stakeholder more capable to maximize the condition to increase the profit.

#### Analysis

This chapter describe short analysis of marketing condition and comprehensive economic analysis.

##### Marketing Analysis

This section describe explain overview of tourist characteristics in Pangandaran. Based on observation and data collection gathered from Pangandaran Government, tourists in Pangandaran are classified according to their nationality whether they are local or foreign tourist, social class, and domiciles. According to their nationality, in 2015, local tourists still dominate with 2,291,276 visitors compare with foreign tourists with 10,606 visitors only. Local tourists commonly come from West Java especially Bandung, Jakarta, and Central Java. They visit Pangandaran for refreshing in the weekend or to fill their school holiday, Lebaran holiday, and Christmas holiday with family. Moreover, some schools in city such as Bandung, usually plan their school visit program to Pangandaran Beach. Most of the tourists use car, coach, and bus to reach Pangandaran. The other tourists who come from closer place use motorcycle as transportation. Their social class are mostly middle class people with a few of high class and rich people. The average length of stay of the tourist is two until four days in Pangandaran. They commonly visit the beach, both west and east beach, conservation forest, white sand beach that across west beach, and food market which sells seafood.

##### Financial Analysis

This section will explain the data and analysis of project's financial condition start from cost which have to invest for the project development continuity such as preparation cost, initial investment cost, and annual operation cost until revenue which is obtained as a result of business activities.

##### Initial Investment

This table below shows the total cost for initial investment.

Table 1 Initial Investment

Initial Investment Cost	Total Cost (Rp)
Land	6,128,570,500
Licensing Fee	283,420,058
Employee Recruitment and Training	0
Preparation Cost	578,500,000
Building Construction Cost	10,122,144,938
Support Facility Cost	4,968,894,790
Interior Equipment	1,035,849,750
<b>Total Initial Investment Cost</b>	<b>23,117,380,036</b>

Based on table above, the total initial investment cost are Rp 23,117,380,036. Total land area of the building is 1,300 meter squares with Rp 4,714,285 in each meter squares. This land is bought from the landlord who is a local people in Pangandaran. Licensing fee is a building permit fee as a consequence of build a hotel with 2.8% tariff from the construction cost. There is no employee recruitment and training due to the employee are all trained before and have an adequate experience in hospitality industry.

#### Occupancy Rate Target

To calculate room sales projected volume, occupancy rate target must be determined first.

Table 2 Occupancy Rate Target

Year	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
%	70	70	70	70	70	50	50	50	50	50	50	50	35	35	35	35	35	35	35	35

This occupancy rate target are determined throughout the year for all type of rooms.

#### Annual Revenue

Target revenue consist of predicted revenue based on target occupancy rate which is explained before in 20 years research scope. Target revenue is all amount of money that gives investor a revenue from room service, food and beverages service, and swimming pool facility.

Table 3 Revenue Source

Revenue Source	Annual Revenue (Rp)
Room Service	23,145,170,920
Food and Beverage (Lunch and Dinner)	372,300,000
Swimming Pool	45,625,000
<b>Total</b>	<b>23,563,095,920</b>

Total annual revenue are Rp 23,563,095,920.

#### Annual Expense

Annual expense is divided by three category, variable, semi variable and fixed cost. Variable cost is all expenditure which has relation with room occupancy rate while fixed cost is not. This table below summarized all type of expense with the 100% occupancy rate assumption. The detail for each type cost will be described later.

Table 4 Annual Expense

Type of expense	Amount (Rp) in 1 year
<b>Variable Cost</b>	
Laundry	309,100,000
Room Facility	768,690,000
Food and Beverages	1,481,754,000
<b>Total Variable Cost</b>	<b>2,559,544,000</b>
<b>Semi Variable Cost</b>	
Utility (Variable Cost)	677,106,352
Utility (Fixed Cost)	516,249,968
<b>Total Semi Variable Cost</b>	<b>1,193,356,320</b>
<b>Fixed Cost</b>	
Salary expense (pre-tax employee benefit)	1,022,640,612
Other expense	725,385,352
<b>Total Fixed Cost</b>	<b>1,748,025,964</b>
<b>Total</b>	<b>5,500,926,284</b>

#### Weighted Average Cost of Capital

WACC as discount rate and hurdle rate is essential part to calculate NPV, IRR, and payback period. The table as follow are the component to calculate WACC. Risk free rate is taken from Indonesia 20 years Bond yield to maturity at 22 August 2016 in Indonesia Bond Pricing Agency website. The author chose 20 years bond to synchronize with research's length of time analysis. Equity risk premium is taken from damodaran online for Indonesia equity risk premium January 2016.

Table 5 WACC Calculation

Beta	0.4116
Risk Free Rate	7.43%
Equity Risk Premium	9.28%
Cost of debt	0%
Cost of equity	11.25%
Equity	100%
Debt	0%
<b>WACC</b>	<b>11.25%</b>

#### Salvage Value

Salvage value calculates fixed assets book value in final year of time analysis with diminish it using depreciation cost.

Table 6 Salvage Value

Initial Investment	Amount (Rp)	Estimated Lifetime (year)	Depreciation/year	Salvage Value (Rp)
Building	15,091,039,728	30	503,034,658	5,030,346,576
Land	6,128,570,500	-	-	6,128,570,500
			<b>Total</b>	<b>11,158,917,076</b>



Calculation

Table 7 Net Cash Flow

End of Year (1)	Cash Inflow (2)	Cash Outflow (3)	Before Tax Cash Flow (4) = (2)-(3)	Depreciation (5)	Taxable Income (6) = (4)-(5)	Cash Flow for Taxable Income (7) = 25%*(6)	After Tax Cash Flow (8) = (4)-(7)
0	-	23,117,380,036	-23,117,380,036		-23,117,380,036		-23,117,380,036
1	16,619,544,644	4,715,991,178	11,903,553,466	597,923,148	11,305,630,318	2,826,407,579	9,077,145,886
2	16,619,544,644	4,715,991,178	11,903,553,466	597,923,148	11,305,630,318	2,826,407,579	9,077,145,886
3	16,619,544,644	4,715,991,178	11,903,553,466	597,923,148	11,305,630,318	2,826,407,579	9,077,145,886
4	16,619,544,644	4,715,991,178	11,903,553,466	597,923,148	11,305,630,318	2,826,407,579	9,077,145,886
5	16,619,544,644	4,895,766,178	11,723,778,466	597,923,148	11,125,855,318	2,781,463,829	8,942,314,636
6	11,990,510,460	4,068,661,108	7,921,849,352	597,923,148	7,323,926,204	1,830,981,551	6,090,867,801
7	11,990,510,460	4,068,661,108	7,921,849,352	597,923,148	7,323,926,204	1,830,981,551	6,090,867,801
8	11,990,510,460	4,068,661,108	7,921,849,352	597,923,148	7,323,926,204	1,830,981,551	6,090,867,801
9	11,990,510,460	4,068,661,108	7,921,849,352	597,923,148	7,323,926,204	1,830,981,551	6,090,867,801
10	11,990,510,460	5,320,385,858	6,670,124,602	597,923,148	6,072,201,454	1,518,050,364	5,152,074,239
11	11,990,510,460	4,068,661,108	7,921,849,352	597,923,148	7,323,926,204	1,830,981,551	6,090,867,801
12	11,990,510,460	4,068,661,108	7,921,849,352	597,923,148	7,323,926,204	1,830,981,551	6,090,867,801
13	8,518,734,822	3,583,163,555	4,935,571,267	597,923,148	4,337,648,119	1,084,412,030	3,851,159,237
14	8,518,734,822	3,583,163,555	4,935,571,267	597,923,148	4,337,648,119	1,084,412,030	3,851,159,237
15	8,518,734,822	3,762,938,555	4,755,796,267	597,923,148	4,157,873,119	1,039,468,280	3,716,327,987
16	8,518,734,822	3,583,163,555	4,935,571,267	597,923,148	4,337,648,119	1,084,412,030	3,851,159,237
17	8,518,734,822	3,583,163,555	4,935,571,267	597,923,148	4,337,648,119	1,084,412,030	3,851,159,237
18	8,518,734,822	3,583,163,555	4,935,571,267	597,923,148	4,337,648,119	1,084,412,030	3,851,159,237
19	8,518,734,822	3,583,163,555	4,935,571,267	597,923,148	4,337,648,119	1,084,412,030	3,851,159,237
20	8,518,734,822	3,583,163,555	4,935,571,267	597,923,148	4,337,648,119	1,084,412,030	3,851,159,237
	11,158,917,0		11,158,917,0				11,158,917,0

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Table 8 Net Present Value

End of Year (1)	After Tax Cash Flow (2)	(P/F, 11.25%, 20) (3)	Discounted After Tax Cash Flow (4) = (2)*(3)	Cumulative Discounted After Tax Cash Flow (5) = cum (4)
0	- 23,117,380,036	1	(23,117,380,036)	(23,117,380,036)
1	9,077,145,886	0.9009	8,177,608,906	(14,939,771,130)
2	9,077,145,886	0.8116	7,367,215,231	(7,572,555,898)
3	9,077,145,886	0.7312	6,637,130,839	(935,425,060)
4	9,077,145,886	0.6587	5,979,397,152	5,043,972,092
5	8,942,314,636	0.5935	5,306,828,497	10,350,800,589
6	6,090,867,801	0.5346	3,256,426,654	13,607,227,243
7	6,090,867,801	0.4817	2,933,717,706	16,540,944,949
8	6,090,867,801	0.4339	2,642,988,924	19,183,933,873
9	6,090,867,801	0.3909	2,381,071,103	21,565,004,976
10	5,152,074,239	0.3522	1,814,480,580	23,379,485,556
11	6,090,867,801	0.3173	1,932,530,722	25,312,016,279
12	6,090,867,801	0.2858	1,741,018,669	27,053,034,947
13	3,851,159,237	0.2575	991,728,404	28,044,763,351
14	3,851,159,237	0.2320	893,449,012	28,938,212,364
15	3,716,327,987	0.2090	776,728,703	29,714,941,067
16	3,851,159,237	0.1883	725,143,261	30,440,084,328
17	3,851,159,237	0.1696	653,282,218	31,093,366,545
18	3,851,159,237	0.1528	588,542,538	31,681,909,084
19	3,851,159,237	0.1377	530,218,503	32,212,127,587
20	3,851,159,237	0.1240	477,674,327	32,689,801,914
	11,158,917,076	0.1186	1,323,447,565	34,013,249,479
		<b>Net Present Value</b>	<b>34,013,249,479</b>	

Table 9 IRR Trial and Error 36%

End of Year (1)	After Tax Cash Flow (2)	(P/F,36%,20) (3)	Discounted After Tax Cash Flow (4) = (2)*(3)	Cumulative Discounted After Tax Cash Flow (5) = cum (4)
0	-23,117,380,036	1	(23,117,380,036)	(23,117,380,036)
1	9,077,145,886	0.7353	6,674,425,370	(16,442,954,666)
2	9,077,145,886	0.5407	4,908,012,781	(11,534,941,885)
3	9,077,145,886	0.3975	3,608,165,490	(7,926,776,395)
4	9,077,145,886	0.2923	2,653,249,743	(5,273,526,653)
5	8,942,314,636	0.2149	1,921,703,415	(3,351,823,238)
6	6,090,867,801	0.1580	962,357,113	(2,389,466,125)
7	6,090,867,801	0.1162	707,758,838	(1,681,707,287)
8	6,090,867,801	0.0854	520,160,110	(1,161,547,176)
9	6,090,867,801	0.0628	382,506,498	(779,040,678)
10	5,152,074,239	0.0462	238,025,830	(541,014,849)
11	6,090,867,801	0.0340	207,089,505	(333,925,343)
12	6,090,867,801	0.0250	152,271,695	(181,653,648)
13	3,851,159,237	0.0184	70,861,330	(110,792,318)
14	3,851,159,237	0.0135	51,990,650	(58,801,669)
15	3,716,327,987	0.0099	36,791,647	(22,010,022)
16	3,851,159,237	0.0073	28,113,462	6,103,441
17	3,851,159,237	0.0054	20,796,260	26,899,701
18	3,851,159,237	0.0039	15,019,521	41,919,222
19	3,851,159,237	0.0029	11,168,362	53,087,583
20	3,851,159,237	0.0021	8,087,434	61,175,018
	11,158,917,076	0.0021	23,433,726	84,608,744

Table 10 IRR Trial and Error 37%

End of Year (1)	After Tax Cash Flow (2)	(P/F,37%,20) (3)	Discounted After Tax Cash Flow (4) = (2)*(3)	Cumulative Discounted After Tax Cash Flow (5) = cum (4)
0	-23,117,380,036	1	(23,117,380,036)	(23,117,380,036)
1	9,077,145,886	0.7299	6,625,408,782	(16,491,971,254)
2	9,077,145,886	0.5328	4,836,303,328	(11,655,667,925)
3	9,077,145,886	0.3889	3,530,102,035	(8,125,565,890)
4	9,077,145,886	0.2839	2,577,001,717	(5,548,564,173)
5	8,942,314,636	0.2072	1,852,847,593	(3,695,716,581)
6	6,090,867,801	0.1512	920,939,212	(2,774,777,369)
7	6,090,867,801	0.1104	672,431,805	(2,102,345,564)
8	6,090,867,801	0.0806	490,923,945	(1,611,421,619)
9	6,090,867,801	0.0588	358,143,027	(1,253,278,592)
10	5,152,074,239	0.0429	221,023,985	(1,032,254,608)
11	6,090,867,801	0.0313	190,644,162	(841,610,445)
12	6,090,867,801	0.0229	139,480,873	(702,129,573)
13	3,851,159,237	0.0167	64,314,359	(637,815,214)
14	3,851,159,237	0.0122	46,984,143	(590,831,071)
15	3,716,327,987	0.0089	33,075,319	(557,755,752)
16	3,851,159,237	0.0065	25,032,535	(532,723,217)
17	3,851,159,237	0.0047	18,100,448	(514,622,768)
18	3,851,159,237	0.0035	13,479,057	(501,143,711)
19	3,851,159,237	0.0025	9,627,898	(491,515,813)
20	3,851,159,237	0.0018	6,932,087	(484,583,726)
	11,158,917,076	0.0018	20,086,051	(464,497,676)

### Calculation Analysis

#### IRR Calculation

Trial and Error method produce 36% and 37% as discount rate. To calculate IRR, this equation below is used.

$$IRR = 36\% + \frac{84,608,744}{84,608,744 + 464,497,676} \times (37\% - 36\%) = 36.15\%$$

IRR which obtained is 36.15% which is greater than WACC as hurdle rate with 11.25%.

#### Payback Period

From the cash flow table, years which takes a place for payback period in between years 7 and 8. This calculation below is used to find its payback period,

$$Payback Period = 3 + \frac{935,425,060}{935,425,060 + 5,043,972,092} \times (4 - 3) = 3.156 \text{ years}$$

Payback period is in 3 years 2 months. After calculating net present value, IRR, and payback period, the project can be determined feasible or not. The project is feasible because its NPV > 0 and its IRR greater than WACC as hurdle rate.

#### Sensitivity Analysis

Sensitivity Analysis will test the risk of change in price and cost which is considered most likely to occur and have major impact to the feasibility result. For the first condition, price and variable cost will be increased for 10% and for the second condition, price and variable cost will be decreased for 10%. Net present value, IRR,

and payback period will be calculated again in the same way to produce the information whether the project still feasible or not according to this condition.

Table 11 Sensitivity Analysis

Condition	Net Present Value (Rp)	IRR (%)	Payback Period
Price and variable cost increased 10%	40,982,275,858	34.73	2 years 9 months
Price and variable cost decreased 10%	26,726,222,749	30.99	3 years 8 months
	NPV > 0	IRR > WACC	
	feasible	feasible	

### Conclusion and Recommendation

#### Conclusion

After performing comprehensive analysis and calculation, the statement about this project is feasible or not can be concluded. Below is the table that summarizes Net Present Value, Internal Rate of Return, and Payback Period of the project with and without sensitivity analysis.

Table 12 Conclusion Table

Condition	Net Present Value (Rp)	Internal Rate of Return (%)	Payback Period
Price and variable cost increased 10%	40,982,275,858	34.73	2 years 9 months
Most Likely	34,013,249,479	36.15	3 years 2 months
Price and variable cost decreased 10%	26,726,222,749	30.99	3 years 8 months

From the result in the table above, the project is feasible to do in most likely condition because the NPV which is Rp 34,013,249,479 is greater than zero, the IRR which is 36.15% is greater than WACC which is 11.25% as hurdle rate, and the Payback Period is 3 years and 2 months. In addition, to perform risk analysis using sensitivity analysis, the project is still feasible. For the condition in which price and variable cost increased by 10%, the NPV is greater than zero, the IRR greater than WACC, and the payback period is 2 years 9 months. For the condition in which price and variable decreased until 10% from most likely condition, still has NPV greater than zero, IRR greater than WACC, and the payback period is 3 years 8 months.

#### Recommendation

The project is feasible to do however there is some weaknesses in a few sector. The author believes if the hotel's management can overcome these weaknesses, it will be an added value and strengthen the competitive advantage for the hotel. Here is some recommendation.

1. In order to offer another experience for guest not just an accommodation to stay, it is important to accelerate the development of supporting facility such as ballroom, gym, and spa and massage.
2. Regarding a lot of tourist that visit Pangandaran using car and the other four-wheel transportation, it is essential to provide adequate parking area. The number of parking area that suggested is the same with the number of rooms available in the hotel. Furthermore, it will be better if the hotel has special parking area for bus, van, and minibus to anticipate arrivals in large number of tourist.
3. To retain sustainable visit, it is great to organize many fun activities inside and outside the hotel such as surfing course, beach volleyball, beach soccer, billiard, darts, yoga, table

tennis, kites, and also Pangandaran village tour using bikes. All of these activities should be organized by responsible and friendly staff. Brochure that explains Pangandaran directory is important to guide tourist and promote shopping store and restaurant throughout Pangandaran.

4. Broaden promotion platform by empowering social media such as instagram and official website or collaborating with travel agent such as Traveloka and Tripadvisor to promote the hotel. Promotion also should be targeted to a group of people such as student for school holiday event and communities holiday event.

Beside the recommendation for the hotel's management, here is some advice for Pangandaran government as a regulator to create Pangandaran as comfortable place to visit.

1. Organize the cadger and street vendors in Pangandaran that makes it dirty and ruin the beach view.
2. Clean up the beach and all Pangandaran road access from any garbage and waste.
3. Collect the data for tourism condition in Pangandaran such as occupancy rate in each hotel, numbers of tourist in weekdays, weekend, and holidays, and numbers of tourist that visit Pangandaran from year to year. This data is essential to recognize the tourist development in Pangandaran and provide an input for the government which sector must be strengthened.

Organize the training for the people of Pangandaran so that they are ready for working in tourism industry and the advantages of tourism industry could be perceived by all people in Pangandaran.

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