A Financial Feasibility Study to Determine the Best Funding Structurefor a Total Renovation Project of the Karebosi Field in Makassar

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ABSTRACT: The objective of this study is to determine the best debt-equity combination to fund the Public-Private Partnership (PPP) project applying the Build-Operate-Transfer (B-O-T) scheme for the total renovation of Karebosi Field in Makassar City, Indonesia. To assess the feasibility of the project, the financial feasibility study methodology is conducted. The study covers an analysis of both external and internal analysis. The external analysis covers the analysis of macroeconomic factors and microeconomic factors utilizing the PESTEL and Porter's Five Forces framework. The internal analysis is focused on the resources of the project. The SWOT analysis presents the outcomes of both external and internal factors. In addition, the author presents three funding structure scenarios as potential alternatives to fund the project. The funding scenarios consist of three alternatives: scenario 1 of full equity funding, scenario 2 of hybrid funding with a proportion of 50% debt and 50% equity, lastly, scenario 3 of hybrid funding with a proportion of 70% debt and 30% equity. Along with that, the author also considers the operational occupancy scenarios that include worst-case, base-case, and best-case scenarios. The percentages of each of the three scenarios are 40%, 60%, and 80%. Following that, the financial projections are calculated for each scenario, resulting in investment measurements such as Net Present Value (NPV), Internal Rate of Return (IRR), and Payback Period. Finally, a risk analysis is performed to assess the sensitivity of the best funding structure and to identify potential risks. Additionally, the evaluation of risk mitigation is added to enhance the overall effectiveness of the best funding structure.

The findings indicate that the project is feasible, and scenario 3 of hybrid funding with the combination of 70% debt and 30% equity is the best funding structure for the project. In addition, the author performs a sensitivity analysis on the best funding scenario, considering ten input variables. Furthermore, the sensitivity analysis indicates that five variables, namely WACC, assumption of operational occupancy per day, interest rate, soccer field rental rate, and the ratio of operating expenses to revenue, significantly impact the net present value (NPV). Strategies to reduce potential risks are effective marketing and operations, managing occupancy rate volatility using backup strategies, developing new revenue streams, and negotiating long-term rate fixes with lenders.

Therefore, future research can explore the dynamic nature of the external factors that influence the Internal Rate of Return (IRR), Net Present Value (NPV), Payback Period, and Weighted Average Cost of Capital (WACC). Determining the best funding may require ongoing research to assess the effects of market conditions, interest rate fluctuations, and industry-specific factors. Furthermore, explore how input variables like WACC, operational occupancy per day, interest rate, soccer field rental rate, and operating expense ratio to revenue affect NPV.

KEYWORDS: Financial Feasibility Study, Public-Private Partnership, Sports Facility, Built-Operate-Transfer, Sensitivity Analysis, Risk Mitigation.

INTRODUCTION

According to a statement released by the Indonesian National Sports Committee (KONI) Makassar, the athletes' accomplishments in various sports branches during the period of January 1 to August 25, 2022, resulted in a total of 161 gold medals, 108 silver medals, and 89 bronze medals, totaling 350 medals, which were achieved at both the provincial and national levels. Makassar City emerged as the overall champion in the XVII South Sulawesi Province Sports Week competition held in October 2022. Makassar has undergone phases of physical development both in its human capital and infrastructure. The establishment of sports facilities is a contributing element to the development of local areas. In addition to the cultural and societal attributes, the character and disposition of a nation also constitute a significant contributor to its economic growth.

One of the manifestations of the Makassar City Government's responsibility to organize and improve public facilities is to conduct a total renovation of the Karebosi Field to become Karebosi Sports Center. The existing Karebosi Field can be considered a landmark

of Makassar City. Historically, this area has functioned primarily as a communal space for the citizens of Makassar City, serving as a venue for physical exercise, communal prayer during Eid, public events such as exhibitions, as well as a site for street vendors, mobile medical services, and various activities for the residents of this city that accessible at any time for free. The comprehensive renovation of this communal asset is anticipated to accelerate its development, enhance its utilization and maintenance management, also support greater ease of use for the community. Significantly, the government of the city is not burdened with the management and maintenance costs. However, the manager or developer might use this region as a business area to cover expenses for maintenance, management, and development fees.

BUSINESS ISSUE

The maintenance of the Karebosi Field which is the responsibility of the Makassar City Government requires a large amount of money, they are also required to carry out maintenance which costs a lot. On the other hand, the rapid realization of a sports facility's design and construction is a challenging endeavor for any organization, regardless of its industry. Consequently, it has become an accepted practice to fund sports infrastructure through multiple funding sources. Enterprises need to maintain profitability and possess the necessary financial capacity to fulfill their debt obligations (Schwarz et al., 2017). Based on the Directorate General of State Assets Management, the limitations of the State Budget in funding infrastructure development as stipulated in the 2015-2019 RPJMN have resulted in a funding gap that must be met. To overcome this, the government is required to use several funding alternatives, one of which is using a development cooperation scheme that involves the private sector, known as the Public Private Partnership (PPP). Hence, Makassar City Government invites interested entrepreneurs to take part in the tender for the total renovation of the Karebosi field project. The Makassar City Government is implementing a collaboration model with investors that involve a contracting out or outsourcing approach. The Makassar City Government has implemented outsourcing measures whereby the mayor assigned the responsibility of constructing and managing Karebosi to a private entity for a duration of 30 years. This approach, commonly referred to as "Build-Operate-Transfer" entails the transfer of all assets within the Karebosi area to the Makassar City Government upon the expiration of the management control period.

RESEARCH OBJECTIVE

This study is intended to conduct the financial feasibility study of the Karebosi Sports Center project. To support the decision-making, the author analyzes and explores the issue through internal and external factors that may have specific impacts on the project and industry. The external factors explore macroeconomic conditions by using the PESTEL approach and the microeconomic analysis explores the industrial condition by using Porter's five forces. On the other hand, the internal factors explore the resources that the project has. Furthermore, the author conducts the financial feasibility study analysis technique to ascertain the process of decision-making. The financial feasibility study serves the purpose of evaluating the viability of the project, determining whether it is feasible or requires a shift in direction towards an alternative concept. After the best funding structure to fund the project was determined, the author then conduct a risk analysis which included sensitivity analysis, and risk mitigation.

LITERATURE REVIEW

A. Public-Private Partnership

Public-Private Partnership (PPP) projects offer advantages for governments and citizens alike. Governments can quickly raise funds and contribute gradually, while residents benefit from improved service quality [11]. Indonesia recognizes the importance of improving infrastructure to promote economic growth and address regional economic inequality. However, the government's limited budget poses a challenge in meeting infrastructure development targets. To bridge this financial gap, the government is exploring alternative project funding schemes, including Public-Private Partnerships (PPP) [13].

B. Build-Operate-Transfer

In Indonesia, Public-Private Partnership (PPP) cooperation takes various forms, including the popular Build-Operate-Transfer (BOT) scheme. In BOT, the private sector funds infrastructure development operates and maintains the facilities and returns them to the government after a specified contract period. This collaborative arrangement allows the private entity to collect fees from facility users while ultimately transferring ownership back to the government [1].

C. Feasibility Study and Sports Facilities

Feasibility studies play a vital role in assessing the viability of costly sports facility renovations. These studies help prevent poor investment decisions, identify risks and hazards, and determine market viability. Developers, investors, lenders, and public sector participants can use the insights gained from feasibility studies to minimize risks and maximize opportunities. The studies are crucial for investors and lenders to determine whether to proceed with the project and also provide a broader economic perspective by assessing profitability and sustainability [14].

D. Feasibility Study

Feasibility studies are crucial for project success, considering financial factors, market demand, and risks. They guide decisions, assess profitability, and assist lenders. Key components include financial projections and investment evaluation methods [6].

E. Capital Expenditure

CapEx refers to funds invested in durable assets for business growth and sustainability. It includes property, equipment, and innovation development [3].

F. Interest During Construction

During construction, project funding debt facilities accrue unpaid interest, which is capitalized and added to the debt amount. Capitalized interest represents the borrowing cost for acquiring or constructing a long-term asset. Unlike regular interest expenses, capitalized interest does not appear on the company's income statement but is reflected in the balance sheet as an increased cost basis for the long-term asset [9].

G. Weighted Average Cost of Capital (WACC)

The Weighted Average Cost of Capital (WACC) is a financial metric that represents the average after-tax cost of capital for a company. It includes various sources of funding, such as stocks, bonds, and debt. WACC is a widely used method for calculating the required rate of return, as it considers the expectations of both bondholders and shareholders. It is derived by multiplying the cost of each capital source by their respective weights based on market value and summing them up to obtain the total WACC [17]. The cost of equity represents the expected return on equity investments in projects or ventures. The cost of debt refers to the interest rate paid on outstanding debts, including bonds. It can be divided into pre-tax and post-tax cost of debt, depending on whether taxes are considered in the calculation [5].

H. Free Cash Flow to the Firm (FCFF)

FCFF, or Free Cash Flow to Firm, represents the cash flow available to all sources of funding in a company. It includes common stockholders, preferred stockholders, debt holders, and others. Unlevered free cash flow refers to the excess cash flow a business would have without any debt. The calculation involves deriving the Net Operating Profit After Tax (NOPAT) by multiplying Earnings Before Interest and Taxes (EBIT) by the complement of the Tax Rate subtracted from unity. Non-cash expenses are then removed, and the impact of CapEx and changes in Net Working Capital are excluded, focusing on the core operations [10].

I. Free Cash Flow to the Equity (FCFE)

FCFE represents cash generated for shareholders, calculated by subtracting capex and adding net debt issued. FCFF includes cash for all investors, debt, and equity. FCFF exceeds FCFE due to interest expense and taxes on debt. Valuing a company distinguishes Enterprise Value from Equity Value. Shareholder value excludes debt and liabilities. FCFE calculates equity's NPV. [10].

J. Net Present Value (NPV)

Net Present Value (NPV) represents the current value of all cash flows, discounted to the present. It assesses the value of businesses, investments, and projects. A negative NPV indicates an undertaking is not worthwhile. NPV is a widely used intrinsic valuation method in finance [4].

K. Internal Rate of Return (IRR)

The internal rate of return (IRR) is a measure of an investment's profitability and effectiveness. It represents the rate of return throughout the investment's lifespan. By finding the discount rate that equates to the present value of cash flows, the IRR is calculated. Project feasibility is determined by comparing the IRR to the required rate of return (WACC). If the IRR is lower than the required rate of return, the project is not feasible [3].

L. Payback Period

The Payback Period measures the time it takes for a business to recoup its initial investment. It helps compare investment options and choose ventures with quicker returns. This metric is valuable for organizations prioritizing prompt return on investment [12].

M. Sensitivity Analysis

Sensitivity analysis is a technique used in financial modeling to understand how changes in independent variables impact a dependent variable under specific conditions. It is widely employed in various fields, including biology, geography, economics, and engineering. The purpose of sensitivity analysis is to assess the effects of factors such as production volume, selling prices, costs, investment expenses, and interest rates on economic indicators like net present value, profit, and return on investment. The process involves analyzing the correlation between variations in these factors and their impact on the selected economic parameters of the project [15].
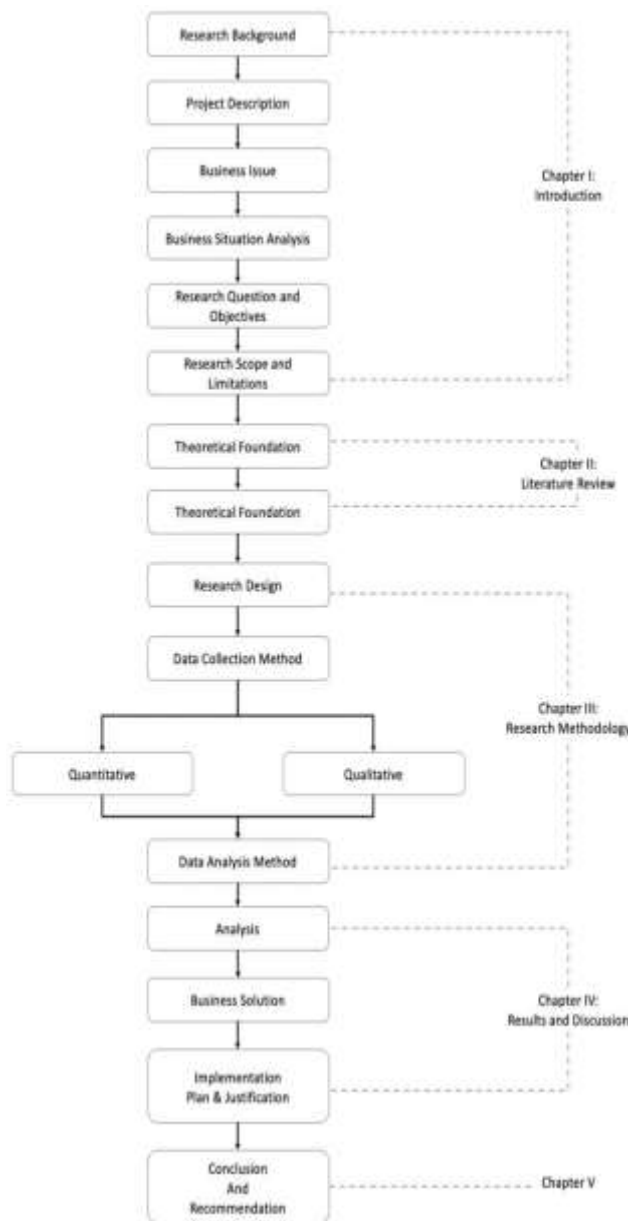

Figure- 1: Research Methodology

N. Risk Mitigation

Risk mitigation is a systematic approach to minimizing the negative impact of risks by implementing measures that reduce exposure. It involves reducing the likelihood and consequences of risks. Mitigation procedures emphasize the importance of identifying and focusing on the risk factors relevant to the subject being examined [18].

RESEARCH METHODOLOGY

This research design is divided into 5 chapters. The first chapter will discuss, Background Research: This section summarizes prior research on the topic. It helps to understand existing knowledge and identify gaps and opportunities for further study ; Project Description: This section describes the research project's goals, objectives, and outcomes. It describes the study's goals and implications ; Business Issue: The specific business problem or issue that the research seeks to address is identified and explained. It helps establish the relevance and importance of the study in the context of real-world business challenges ; Business Situation Analysis: This section involves analyzing the current business situation or context that led to the identification of the business issue. It may include factors such as industry trends, market conditions, competitive landscape, organizational challenges, or any other relevant factors affecting the business ; Research Question and Objectives: The identified business issue informs the research question(s). The study's objectives and areas of study are then determined. Research Scope and Limitations: This section defines the study's target demographic, geographical location, and timeframe. It also highlights potential study restrictions such as data access, time, and resource limits.

The second chapter will discuss, Theoretical Foundation: It discusses significant research theories, concepts, and models. The literature review reveals knowledge gaps and inconsistencies. The researcher can identify unexplored areas by examining previous studies. These research gaps justify the current investigation. The literature review reviews field empirical research. It examines these research methods, findings, and limitations ; Conceptual Framework: The inclusion of a literature review aids in the formation and refinement of the conceptual framework utilized in the study. The research aims to identify and analyze the fundamental variables, constructs, and relationships that will be examined in the study. The conceptual framework serves as a theoretical foundation for the research design and aids in the development of hypotheses or research inquiries ;

The third chapter will discuss, Research Design: This section discusses the study's general research design. The research's method is discussed. Data collection and analysis are outlined in the research design. It gives a clear research framework and ensures the study is well-structured ; Data Collection Method: This section details the study's data collection procedures. Surveys, interviews, observations, experiments, and document analysis are all data-gathering approaches depending on the research design and question. The target population, sample methods, and data collection tools are explained in the section ; Data Analysis Method: This section examines data analysis approaches. It describes the methods used to analyze, interpret, and make sense of the data. Quantitative methods like statistical analysis or qualitative methods like thematic analysis or content analysis may be used for data analysis. Research goals and data type should determine the method.

The fourth chapter will discuss, Analysis: This section pertains to the examination and elucidation of the gathered data. This section presents the results derived from the data analysis conducted using the selected data analysis methodology discussed in the preceding chapter. The analysis comprises statistical calculations ; Business Solution: This section proposes a business issue solution based on data analysis. Research findings and aims should support the proposed solution. It may suggest process improvements ; Implementation Plan and Justification: This section details the business solution implementation plan. It details the steps needed to implement the solution. The implementation plan may include dates, roles, budgets, risks, and challenges. The chapter justifies the business solution and execution plan. Based on data research, demonstrates why the chosen solution solves the business challenge. The research question, theoretical framework, and empirical evidence may support the chosen approach.

Lastly, the fifth chapter will discuss:

Conclusion: The conclusion summarizes the study and interpretation. Section 4 must inform this conclusion. Statements are used to avoid ambiguity in writing. Conclusions must answer Chapter 1 research questions. This chapter must flow logically and systematically to enable the reader to understand it from beginning to end without having to refer to other chapters ; Recommendation: This section may summarize recommendations or practical/managerial consequences for connected stakeholders from the proposed implementation strategy (prior subchapter). This section can suggest further research.

RESULT AND DISCUSSION

This study is intended to conduct the financial feasibility study of the Karebosi Sports Center project. To support the decision-making, the author analyzes and explores the issue through internal and external factors that may have specific impacts on the project and industry. The external factors explore macroeconomic conditions by using the PESTEL approach and the microeconomic analysis explores the industrial condition by using Porter's five forces. On the other hand, the internal factors explore the resources that the project has. Furthermore, the author conducts the financial feasibility study analysis technique to ascertain the process of decision-making. The financial feasibility study serves the purpose of evaluating the viability of the project, determining whether it is feasible or requires a shift in direction towards an alternative concept. After the best funding structure to fund the project was determined, the author then conduct a risk analysis which included sensitivity analysis, and riskmitigation.

A. Funding Structure Scenarios

The author conducted 3 scenarios of funding structure, which in the end the best funding structure to fund the project willbe chosen.

Table 1. Funding Structure Scenarios

In IDR Million			
Scenario	Funding Structure	Bank loan	Equity
Scenario 1	Full Equity	0%	100%
		-	78.360
		Total CapEx	**78.360**
Scenario 2	Hybrid funding	50%	50%
		41.105	41.105
		Total CapEx	**82.210**
Scenario 3	Hybrid funding	70%	30%
		58.625	25.125
		Total CapEx	**83.750**

The project is scheduled to span a period of two years, beginning in 2023, finishing in 2024, and start operating in 2025. The objective is to commence operations immediately upon completion of the project. The Capital Expenditure (CapEx) will be allocated towards the development of the Karebosi Sport Center, encompassing the construction of two Soccer Fields, four Futsal Fields, a Softball Field, and supplementary amenities. Notably, the project will also include the construction of designated parking areas, that includes 400 spots for cars and 600 spots for motorcycles.

B. Scenario 1 of Full Equity Funding – WACC

Table 2. Scenario 1 of Full Equity Funding – WACC

Cost of Debt	7.41%
Cost of Equity	17.07%
Funding structure:	
Full Equity	

Bank loan	0%	Bank loan	0%
Equity	100%	Equity	100%
WACC			17.07%

C. Scenario 1 of Full Equity Funding – Project Return – FCFE

Table 3. Scenario 1 of Full Equity Funding – Project Return – FCFE

Free Cash Flow to Equity						
In IDR million						
Funding Structures:	Worst-case Base-case Best-case	scount rate (WACC)	IRR	NPV	PbP	Positive Cumulative – Equity
0% Debt : 100% Equity	40%	17,07%	13,74%	(18.056)	8,86	31-Dec-31
	60%	17,07%	18,81%	10.049	6,82	31-Dec-29
	80%	17,07%	23,35%	38.155	5,73	31-Dec-28

D. Scenario 2 of Hybrid Funding 50% Debt : 50% Equity – WACC

Table 4. Scenario 2 of Hybrid Funding 50% Debt : 50% Equity – WACC

Cost of Debt		7.41%	
Cost of Equity		17.07%	
Funding structure:			
Hybrid funding			
Bank loan	50%	Bank loan	50%
Equity	50%	Equity	50%
WACC			12.24%

E. Scenario 2 of Hybrid Funding 50% Debt : 50% Equity – Project Return – FCFF & FCFE

Table 5. Scenario 2 of Hybrid Funding 50% Debt : 50% Equity – Project Return – FCFF & FCFE

Free Cash Flow to Firm						
In IDR million						
Funding structures:	Worst-case Base-case Best-case	Discount rate (WACC)	IRR	NPV	PbP	Positive Cumulative - Firm
50% Debt : 50% Equity	40%	12,24%	11,89%	(2.883)	10,51	31-Dec-33
	60%	12,24%	16,71%	39.078	7,84	31-Dec-30
	80%	12,24%	21,04%	81.038	6,41	31-Dec-29

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Free Cash Flow to Equity						
In IDR Million						
Funding structures:	Worst-case	Cost ofEquity	IRR	NPV	PbP	Positive Cumulative - Equity
	Base-case					
	Best-case					
50% Debt : 50% Equity	40%	17,07%	16,17%	(3.192)	9,17	31-Dec-32
	60%	17,07%	23,92%	24.913	5,99	31-Dec-28
	80%	17,07%	31,20%	53.019	4,71	31-Dec-27

F. Scenario 3 of Hybrid Funding 70% Debt : 30% Equity – WACC
Table 6. Scenario 3 of Hybrid Funding 70% Debt : 30% Equity – WACC

Cost of Debt		7.41%	
Cost of Equity		17.07%	
Funding structure:			
Full Equity			
Bank loan	0%	Bank loan	0%
Equity	100%	Equity	100%
WACC			17.07%

G. Scenario 3 of Hybrid Funding 70% Debt : 30% Equity – Project Return – FCFF & FCFE
Table 7. Scenario 3 of Hybrid Funding 70% Debt : 30% Equity – Project Return – FCFF & FCFE

Free Cash Flow to Firm						
In IDR million						
Funding structures:	Worst-case	scount rate (WACC)	IRR	NPV	PbP	Cumulative -Firm
	Base-case					
	Best-case					
70% Debt : 30% Equity	40%	10,31%	11,20%	8.707	11,24	31-Dec-34
	60%	10,31%	15,92%	59.572	8,31	31-Dec-31
	80%	10,31%	20,16%	110.436	6,73	31-Dec-29
Free Cash Flow to Equity						
In IDR Million						
Funding structures:	Worst-case	Cost of Equity	IRR	NPV	PbP	Positive Cumulative - Equity
	Base-case					
	Best-case					

70% Debt : 30% Equity	40%	17,07%	18,32%	3.239	9,47	31-Dec-32
	60%	17,07%	29,30%	31.344	5,21	31-Dec-28
	80%	17,07%	40,00%	59.450	3,92	31-Dec-26

H. Best Funding Structure

The best funding structure in this project is determined by the proportion of debt and equity that results in the lowest possible weighted average cost of capital (WACC) for the firm, IRR that exceeds WACC, and the positive NPVs even when applying 3 different operational occupancies per day. This enables the company to undertake many profitable projects.

Table 8. Best Funding Structure

Free Cash Flow to Firm						
In IDR million						
Funding structures:	Worst-case Base-case Best-case	Discount rate (WACC)	IRR	NPV	PbP	Positive Cumulative - Firm
0% Debt : 100% Equity	40%	17,07%	13,74%	(18.056)	8,86	31-Dec-31
	60%	17,07%	18,81%	10.049	6,82	31-Dec-29
	80%	17,07%	23,35%	38.155	5,73	31-Dec-28
50% Debt : 50% Equity	40%	12,24%	11,89%	(2.883)	10,51	31-Dec-33
	60%	12,24%	16,71%	39.078	7,84	31-Dec-30
	80%	12,24%	21,04%	81.038	6,41	31-Dec-29
70% Debt : 30% Equity	40%	10,31%	11,20%	8.707	11,24	31-Dec-34
	60%	10,31%	15,92%	59.572	8,31	31-Dec-31
	80%	10,31%	20,16%	110.436	6,73	31-Dec-29
Free Cash Flow to Equity						
In IDR Million						
Funding structures:	Worst-case Base-case Best-case	Cost of Equity	IRR	NPV	PbP	Positive Cumulative - Equity
0% Debt : 100% Equity	40%	17,07%	13,74%	(18.056)	8,86	31-Dec-31
	60%	17,07%	18,81%	10.049	6,82	31-Dec-29
	80%	17,07%	23,35%	38.155	5,73	31-Dec-28
50% Debt	40%	17,07%	16,17%	(3.192)	9,17	31-Dec-32

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: 50% Equity	60%	17,07%	23,92%	24.913	5,99	31-Dec-28
	80%	17,07%	31,20%	53.019	4,71	31-Dec-27
70% Debt : 30% Equity	40%	17,07%	18,32%	3.239	9,47	31-Dec-32
	60%	17,07%	29,30%	31.344	5,21	31-Dec-28
	80%	17,07%	40,00%	59.450	3,92	31-Dec-26

Based on the analysis, the proposed funding structure is hybrid funding with the combination of 70% Debt and 30% Equity. With 3 assumptions of Worst-case, Base-case, and Best-case ranging from 40%, 60%, and 80%, the results of IRR are higher than the WACC. The IRR that exceeds WACC rates means the investment is generating returns higher than the cost of capital, making it potentially attractive for investors. Moreover, the IRR that is higher than the Cost of Equity will also be profitable for the owner of Karebosi Sports Center, the Makassar City Government. Moreover, with the best funding structure resulted in positive NPVs. When the net present value (NPV) of a project or investment is positive, it indicates that the anticipated rate of return will exceed the discount rate.

I.   Sensitivity Analysis – Hybrid Funding 70% Debt : 30% Equity – Worst-Case Scenario

Table 9. Sensitivity Analysis – Hybrid Funding 70% Debt : 30% Equity – Worst-Case Scenario

Input Variables	Current Assumption	+20% Swing	-20% Swing	Current NPV	+20% Swing NPV	-20% Swing NPV	Percentage +20% Swing	Percentage -20% Swing	Absolute
WACC	10,31%	12,37%	8,25%	8.707	(9.738)	34.752	-211,84%	299,12%	5,11
Assumption of Operational Occupancy perDay	40,00%	48,00%	32,00%	8.707	29.053	(11.639)	233,67%	-233,67%	4,67
Interest Rate - Jibor & Margin	9,50%	11,40%	7,60%	8.707	(4.428)	24.028	-150,85%	175,95%	3,27
Soccer FieldRental Rate	3.500.000	4.200.000	2.800.000	8.707	18.825	(1.410)	116,20%	-116,20%	2,32
Operating Expense Ratio to Revenue	30,00%	36,00%	24,00%	8.707	(13)	17.427	-100,14%	100,14%	2,00
Inflation Rate	3,50%	4,20%	2,80%	8.707	13.644	4.267	56,70%	-50,99%	1,08
Car Parking Revenue - Assumption ofHourly Rate	5.000	6.000	4.000	8.707	12.932	4.482	48,52%	-48,52%	0,97
Motorcycle Parking Revenue - Assumption of Hourly Rate	2.000	2.400	1.600	8.707	11.242	6.172	29,11%	-29,11%	0,58
Futsal Field Rental Rate - Assumption of 2Hours Rate	350.000	420.000	280.000	8.707	10.731	6.684	23,24%	-23,24%	0,46
Softball Field Rental Rate - Assumption of 2Hours Rate	1.000.000	1.200.000	800.000	8.707	10.152	7.262	16,60%	-16,60%	0,33

The sensitivity analysis presented in this study reveals that several variables have significant effects on the net present value (NPV) whenever there is a change in the input. These variables include the weighted average cost of capital (WACC), assumption of operational occupancy per day, interest rate, and operating expense ratio to revenue. The Weighted Average Cost of Capital (WACC) variable swings by a positive or negative 20%. The modification of the assumption regarding operational occupancy per day results in a corresponding influence of approximately plus or minus 200% on the Net Present Value (NPV). Furthermore, the variable interest rate, soccer field rental rate, and the ratio of operating expenses to revenue significantly influence approximately +/- 100%.
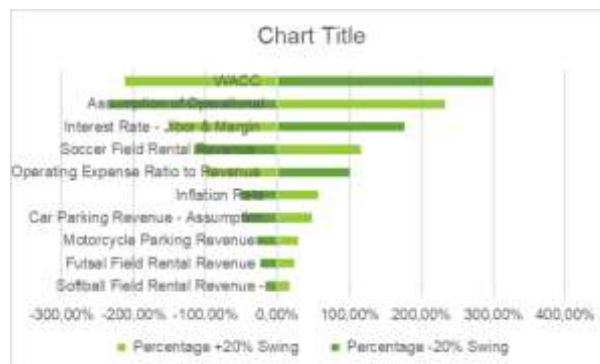

Figure- 2: Tornado Chart - Worst-Case Scenario

J. Sensitivity Analysis – Hybrid Funding 70% Debt : 30% Equity – Base-Case Scenario

Table 10. Sensitivity Analysis – Hybrid Funding 70% Debt : 30% Equity – Base-Case Scenario

Input Variables	Current Assumption	+20% Swing	-20% Swing	Current NPV	+20% Swing NPV	-20% Swing NPV	Percentage +20% Swing	Percentage -20% Swing	Absolute
WACC	10,31%	12,37%	8,25%	59.572	31.722	98.787	-46,75%	65,83%	1,13
Assumption of Operational Occupancy perDay	60,00%	72,00%	48,00%	59.572	90.091	29.053	51,23%	-51,23%	1,02
Interest Rate - Jibor & Margin	9,50%	11,40%	7,60%	59.572	41.325	80.949	-30,63%	35,89%	0,67
Soccer Field Rental Rate	3.500.000	4.200.000	2.800.000	59.572	74.748	44.396	25,48%	-25,48%	0,51
Operating Expense Ratio toRevenue	30,00%	36,00%	24,00%	59.572	46.492	72.651	-21,96%	21,96%	0,44
Inflation Rate	3,50%	4,20%	2,80%	59.572	66.977	52.912	12,43%	-11,18%	0,24
Car Parking Revenue - Assumption of Hourly Rate	5.000	6.000	4.000	59.572	65.909	53.235	10,64%	-10,64%	0,21
Motorcycle Parking Revenue - Assumption of Hourly Rate	2.000	2.400	1.600	59.572	63.374	55.769	6,38%	-6,38%	0,13

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Futsal Field Rental Rate - Assumption of 2 Hours Rate	350.000	420.000	280.000	59.572	62.607	56.537	5,10%	-5,10%	0,10
Softball Field Rental Rate - Assumption of 2 Hours Rate	1.000.000	1.200.000	800.000	59.572	61.740	57.404	3,64%	-3,64%	0,07

When the Weighted Average Cost of Capital (WACC) variable and the assumption regarding operational occupancy perday are adjusted by the swing of +20% and -20%, the impact on the change of Net Present Value (NPV) is approximately +/-40%. Furthermore, it should be noted that the variable interest rate, soccer field rental rate, and the ratio of operatingexpenses to revenue have a significant influence, with an impact of up to +/-20%.
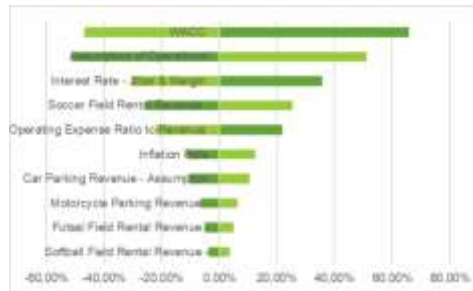

Figure- 3: Tornado Chart - Base-Case Scenario

K.   Sensitivity Analysis – Hybrid Funding 70% Debt : 30% Equity – Best-Case Scenario

Table 11. Sensitivity Analysis – Hybrid Funding 70% Debt : 30% Equity – Best-Case Scenario

Input Variables	Current Assumption	+20% Swing	-20% Swing	Current NPV	+20% Swing NPV	-20% Swing NPV	Percentage +20% Swing	Percentage -20% Swing	Absolute
WACC	10,31%	12,37%	8,25%	110.436	73.183	162.823	-33,73%	47,44%	0,81
Assumption of Operational Occupancy per Day	80,00%	96,00%	64,00%	110.436	151.128	69.745	36,85%	-36,85%	0,74
Interest Rate - Jibor & Margin	9,50%	11,40%	7,60%	110.436	87.077	137.871	-21,15%	24,84%	0,46
Soccer FieldRental Rate	3.500.000	4.200.000	2.800.000	110.436	130.671	90.202	18,32%	-18,32%	0,37
Operating Expense Ratio to Revenue	30,00%	36,00%	24,00%	110.436	92.997	127.876	-15,79%	15,79%	0,32
Inflation Rate	3,50%	4,20%	2,80%	110.436	120.310	101.557	8,94%	-8,04%	0,17
Car Parking Revenue - Assumption ofHourly Rate	5.000	6.000	4.000	110.436	118.886	101.987	7,65%	-7,65%	0,15

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Motorcycle Parking Revenue -Assumption of Hourly Rate	2.000	2.400	1.600	110.436	115.506	105.367	4,59%	-4,59%	0,09
Futsal Field Rental Rate - Assumption of 2Hours Rate	350.000	420.000	280.000	110.436	114.483	106.389	3,66%	-3,66%	0,07
Softball Field Rental Rate - Assumption of 2 Hours Rate	1.000.000	1.200.000	800.000	110.436	113.327	107.546	2,62%	-2,62%	0,05

When the Weighted Average Cost of Capital (WACC) variable, the assumption regarding operational occupancy per day, and the interest rate are adjusted by the swing of +20% and -20%, the impact on the Net Present Value (NPV) is approximately +/-20%.

Figure- 4: Tornado Chart - Best-Case Scenario

According to the sensitivity analysis of the 3 scenarios above, it can be concluded that: the variables of the inflation rate, the assumption of an hourly rate of the car and motorcycle parking, and the assumption of 2 hours rate of the futsal field and softball field are the variables that even though a swing of +20% and -20% is conducted, the impact on the change of NPV amount is not that significant and did not require risk mitigation.

L. Risk Mitigation

Table 12. Risk Mitigation

| No. | Identification | Analysis | | Evaluation (Mitigation) |
		Causes	Impact	
1.	Assumption of Operational Occupancy perDay	Future pandemics	Increase demand and occupancy, whereas economic downturns may lower occupancy due to reduced consumer spending and company activity	Maximizing occupancy rates through the implementation of efficient marketing and operational strategies
	Soccer Field Rental Rate	Government regulation		Establish backup plans to effectively manage possible swings in occupancy rates
2.		Political instability		promoting during low demand or exploring new revenue streams to avoid financial losses

3.	WACC	The financial institutions or lenders increase their required rate of return	Since the project's best funding structure is 70% debt, the change in interest rate will have a big impact on:	Consider negotiating long-term interest rate fixes with lenders. This would provide certainty and stability in interest expense, protecting the project from sudden fluctuations in interest rates
4.	Interest Rate			
			Increase expenses	
			Reduced net income	
			Decreased cash flow	
			Increased debt burden	
5.	Operating Expense Ratio to Revenue	Inflation	Increase or decrease in operating expense depends heavily on the economic and political factor	Implementing cost-cutting strategies, optimizing operational efficiency, and closely monitoring expenses
		Taxation policies		
		Government regulation		
		Political instability		
		Commodity prices		

CONCLUSION

Project feasibility is determined by the project's positive net present values (NPVs), internal rates of return (IRRs) that exceed WACC, and payback period with the shortest period, which have been calculated considering three funding structures and different operational occupancies per day.

The best funding structure resulted in a hybrid funding structure with a combination of 70% debt and 30% equity. The decision to choose this scenario is made based on the debt and equity allocation that results in the lowest practical weighted average cost of capital (WACC) for the company. Investment recovery and breakeven point depend on the operational occupancy per day, the investment is anticipated to be recovered and the investor is anticipated to reach the breakeven point at different times. The recommended funding structure's payback periods for the worst-case, base-case, and best-case scenarios range from 3.92 to 11.24 years.

Important factors affecting NPV in the event of a swing from the sensitivity analysis demonstrated that when inputs change, several variables have a considerable impact on the net present value (NPV). The weighted average cost of capital (WACC), the assumption of operational occupancy each day, the interest rate, soccer fields rental rate, and the proportion of operating expenses to revenue are some of these variables.

Based on the potential hazards found in the sensitivity analysis, the use of effective marketing and operational strategies, the implementation of backup plans, the negotiation of long-term interest rate fixes, and the implementation of cost-cutting techniques are some risk mitigation strategies.

The project is feasible, and a hybrid funding strategy with 70% debt and 30% equity is suggested as the funding option. The investment in the project is anticipated to be repaid within a specific amount of time, and several important inputs, including WACC, operational occupancy, interest rate, and expenditure ratios, have a big impact on the project's net present value. Strategies are suggested to increase occupancy rates, control occupancy swings, negotiate interest rates, and improve operational effectiveness to reduce potential risks.

RECOMMENDATION FOR FUTURE RESEARCH

In determining the optimal funding, it is crucial for the Internal Rate of Return (IRR) to exceed the Weighted Average Cost of Capital (WACC). The concept of risk-adjusted return is captured by the weighted average cost of capital (WACC), which considers the cost of both debt and equity and represents the average cost of capital for a company. The stated concept denotes the minimum level of return that investors demand to offset the inherent risk linked with a specific investment. An organization can evaluate the feasibility of a specific investment undertaking through a comparative analysis of the Internal Rate of Return (IRR) and the Weighted

Average Cost of Capital (WACC).

If the internal rate of return (IRR) is higher than the weighted average cost of capital (WACC), this implies that the investment is potentially attractive and produces profits that surpass the expense of funding. This suggests that the project is generating value for the organization and holds the possibility of augmenting the wealth of its shareholders.

If the Internal Rate of Return (IRR) is less than the Weighted Average Cost of Capital (WACC), it implies that the project is not producing returns that are adequate to compensate for the capital cost, which may indicate a heightened level of risk.

When the Internal Rate of Return (IRR) surpasses the Weighted Average Cost of Capital (WACC), the Free Cash Flow to the Firm (FCFF) is anticipated to rise since the project is producing favorable cash inflows. Enhancing the organization's financial standing can fortify its position and furnish additional resources for forthcoming investments, debt settlement, distribution of dividends, or other purposes that are advantageous to the company and its stakeholders.

The findings indicate that five variables, namely WACC, assumption of operational occupancy per day, interest rate, soccer field rental rate, and the ratio of operating expenses to revenue, significantly impact the net present value (NPV).

RECOMMENDATION FOR INVESTORS

Investors must consider FCFF and FCFE while assessing a project or firm. FCFF and FCFE financial performance measurements show cash available after capital and debt requirements. FCFF is the cash accessible to all financial claim holders, including common stock, bondholders, and lenders. FCFF helps investors determine whether to invest in a firm by assessing its overall value. FCFE defines cash available for common shareholders following capital and debt obligations. FCFE shows common stockholder cash more clearly. FCFE helps investors appraise a company's equity. Consider the financial goals while choosing FCFF or FCFE. FCFF may be a better statistic for bondholders and lenders assessing the company's value. FCFE may be important if their focus is equity value and corporate stock investment. However, it is important to remember that FCFF and FCFEare complementary analytical tools. Looking at both can provide a more complete picture of a company's financial performance and help investors make better decisions.

REFERENCES
1. Andrean, D., & Santoso, S. (2020). BUILD OPERATE TRANSFER (BOT) AS BUSINESS ROLE MODEL FOR METERING SYSTEM AND DEVELOPMENT PROJECTS (STUDY CASES ON METERING SYSTEM PROJECT WHICH LOCATED AT PT. REXAUDIA SASADA SENTOSA). Dinasti International Journal of Management Science (DIJMS), 2(1). https://doi.org/10.31933/dijms.v2i1
2. Andrew Indrawan Aidina, Aidina Indrawan Andrew, Najamuddin, & La Malihu. (n.d.). LAPANGAN KAREBOSI KOTA MAKASSAR (1990-2017).
3. Arisandy, M. R., & Prasetyo, A. D. (2022). Recommendations for Land Value of Non-Cash State Capital Participation (PMN) for Optimal Property Development in Plaju Assets, Palembang. European Journal of Business and Management Research, 7(3), 277–280. https://doi.org/10.24018/ejbmr.2022.7.3.1455
4. Dai, H., Li, N., Wang, Y., & Zhao, X. (2022). The Analysis of Three Main Investment Criteria: NPV IRR and Payback Period.
5. Frank, M. Z., & Shen, T. (2016). Investment and the weighted average cost of capital. Journal of Financial Economics, 119(2), 300–315. https://doi.org/10.1016/j.jfineco.2015.09.001
6. Havard T. (2014). Financial Feasibility Studies for Property Development.
7. Indrawan, S., & Abdulgani, H. (n.d.). ANALISIS KELAYAKAN INVESTASI PARKIR DI KOMPLEK GELANGGANG OLAHRAGA BUNG KARNO.
8. Islam, F. M., & Prasetyo, A. D. (2020). Financial Feasibility Study for New Investment in New Digital Product of PT Telkom Indonesia (Case Study: SKP Project). European Journal of Business and Management Research, 5(5). https://doi.org/10.24018/ejbmr.2020.5.5.558
9. Ivankova, M. (2013). Mathematical Economic Model of Minimizing Interest during Construction (Example-Nuclear Power Plant). 3(5), 273–278.https://doi.org/10.5923/j.mm.20130305.05

10. Kustra, A., & Lorenc, S. (2021). Financial balance analysis of geothermal companies in Poland based on managerial cash flows. Energies, 14(23). https://doi.org/10.3390/en14237885

11. Meidute, I., & Paliulis, N. K. (2011). Feasibility study of public-private partnership. International Journal of Strategic Property Management, 15(3), 257– 274. https://doi.org/10.3846/1648715X.2011.617860

12. Novitasari, J., Rahadi, R. A., & Rahadi, R. A. (2022). Evaluation of Property Investment (Case of Buy or Build Commercial Office Building in Jakarta's CBD Area). European Journal of Business and Management Research, 7(4), 116–120. https://doi.org/10.24018/ejbmr.2022.7.4.1423

13. PPP Book 2022. (n.d.).

14. Schwarz, E. C., Hall, S. A., & Shibli, S. (2017). SPORT FACILITY OPERATIONS MANAGEMENT: A GLOBAL PERSPECTIVE.

15. Senova, A., Tobisova, A., & Rozenberg, R. (2023). New Approaches to Project Risk Assessment Utilizing the Monte Carlo Method. Sustainability, 15(2), 1006. https://doi.org/10.3390/su15021006

16. Shen, L. yin, Tam, V. W. Y., Tam, L., & Ji, Y. bo. (2010). Project feasibility study: the key to successful implementation of sustainable and socially responsible construction management practice. Journal of Cleaner Production, 18(3), 254–259. https://doi.org/10.1016/j.jclepro.2009.10.014

17. Vartiainen, E., Masson, G., Breyer, C., Moser, D., & Román Medina, E. (2020). Impact of weighted average cost of capital, capital expenditure, and other parameters on future utility-scale PV levelised cost of electricity. Progress in Photovoltaics: Research and Applications, 28(6), 439–453. https://doi.org/10.1002/pip.3189

18. Voelker, C., Permana, A., Sachs, T., & Tiong, R. (2008). Political risk perception in Indonesian power projects. Journal of Financial Management of Property and Construction, 13(1), 18–34. https://doi.org/10.1108/13664380810882057