

Sensitivity Analysis of Investment Feasibility Assessments and Monte Carlo Risk Analysis in High-Profile Real Estate Companies

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Abstract: This study aims to analyze the feasibility of investment development using investment analysis methods, including the payback period (PP), Net Present Value (NPV), Internal Rate of Return (IRR), and profitability index, which are part of the capital budgeting method. Furthermore, this study is expected to provide a framework for financial feasibility studies with various scenarios. Through calculations using the PP, NPV, and IRR methods, it is hoped that property companies can make decisions and analyze whether investment capital can be returned according to a predetermined schedule with an acceptable level of risk. Additionally, this study evaluates the risks that may arise during the development process using Monte Carlo sensitivity analysis. Based on the research findings, the researcher concludes that investment development using PP, NPV, IRR, and PI in high-profile property projects is feasible. The development of high-profile property projects using Monte Carlo simulations involves elements of uncertainty.

Introduction

In line with the fulfillment of basic needs, population growth, and the rise in new households, the demand for new housing located near activity centers and easily accessible has become the top priority year after year. This is the basis for property developers to expand their investment businesses in the real estate sector. The real estate sector is one of the main pillars of national economic development, characterized by being capital-intensive and having a long-term return on investment. For high-profile real estate companies that typically manage large-scale projects such as mixed-use developments, skyscrapers, or self-contained districts, the dynamics of global and domestic markets exert significant pressure on financial stability. Economic uncertainty triggered by interest rate fluctuations, changes in regulatory policies, and volatility in construction material prices demands that management possess the acumen to evaluate investment feasibility before committing substantial capital. The primary challenge in large-scale real estate investment development is the reliance on cash flow projections, which are often deterministic in nature. Traditional approaches such as Net Present Value (NPV), Internal Rate of Return (IRR), and Payback Period do provide a basic picture of financial viability. However, these figures often fail to capture the reality of a dynamic market. High-profile projects are highly sensitive to input variables; a small shift in the occupancy rate or a 5% increase in operating costs can substantially alter a project's status from profitable to unprofitable. Therefore, relying solely on single-point estimates without testing the resilience of these variables is considered high-risk for companies with a strong reputation. Sensitivity analysis serves as a solution to identify which variables most significantly impact a project's profitability. By mapping critical variables, management can develop more targeted mitigation strategies. However, sensitivity analysis has limitations regarding variable isolation; it tends to change one factor while keeping others constant (*ceteris paribus*). In reality, within the real estate industry, risks often occur simultaneously and are interrelated. For instance, rising inflation is typically followed by higher bank interest rates, which simultaneously reduce consumer purchasing power and increase developers' financing costs.

The real estate sector is one of the most dynamic pillars of the economy, yet it is characterized by a high degree of uncertainty, particularly in the high-profile segment, which requires substantial capital and long investment horizons. Empirically, the luxury real estate segment—with properties priced above 1 billion rupiah—has demonstrated greater resilience compared to homes priced below 1 billion rupiah when facing economic shocks such as a pandemic (Samudra & Ervianto, 2021). However, price stability does not automatically guarantee a project's viability if it is not accompanied by precise financial risk management. Commonly used investment feasibility metrics such as Payback Period (PP), Net Present Value (NPV), and Internal Rate of Return (IRR) often yield optimistic results (Kurnianto, 2020) yet these methods are deterministic and often fail to capture external risk variables such as inflation, interest rates, and policy changes that can drastically alter a project's feasibility (Amrullah & Indryani, 2023). Limitations in traditional methods are also evident in the use of the Benefit-Cost Ratio (BCR), which has not been able to thoroughly address operational risks such as project delays or fluctuations in material prices (Sururi & Agustapraja, 2020). Although a project may be deemed feasible with a $BCR > 1$ or a high IRR (Krisnawan et al., 2015) sensitivity analysis indicates that real estate projects are highly vulnerable to changes in construction costs and the volume of units sold, where certain cost increases can immediately render the project unfeasible (Rahayu & Nurghany, 2019). This phenomenon underscores that risk identification is insufficient when limited to technical aspects alone; it must also

encompass macroeconomic factors such as currency devaluation and rising loan interest rates (Firmansyah et al., 2006).

To address this gap, the integration of Monte Carlo risk analysis becomes highly relevant. Monte Carlo simulation uses probability distributions to model uncertainty across thousands of iterations, thereby generating a spectrum of possible outcomes rather than a single definitive figure. For high-profile real estate companies, this method provides a competitive advantage by quantifying the likelihood of investment failure (e.g., the probability of $NPV < 0$). This aligns with the principles of good corporate governance, where investment decisions must be based on comprehensive and mathematically measurable risk analysis. A research gap exists because most previous studies have only conducted static single-variable sensitivity analyses or used qualitative approaches through risk weighting (Herwitasari & Utomo, 2016). However, in high-profile property development, variables such as selling price and construction costs interact randomly. The use of the Discounted Cash Flow-based Monte Carlo simulation method has proven effective in simultaneously modeling the uncertainty of critical variables in office building projects (Huwae et al., 2018) yet its application in the luxury residential sector remains very limited.

Based on the above phenomena, this study aims to fill this gap by integrating financial feasibility analysis (PP, NPV, IRR, and PI) with Monte Carlo simulation to provide a more accurate and measurable estimate of investment success probability for high-profile real estate companies. The results of this study can provide a more precise framework for developers in making strategic decisions amid increasingly complex market uncertainties. The use of data from high-profile companies adds value because the cost structures and risk profiles they face reflect the most challenging standards in the real estate industry. Consequently, the researcher is interested in conducting a study titled “Sensitivity Analysis of Investment Development Feasibility Measurements and Monte Carlo Risk Assessment for High-Profile Real Estate Companies”.

Financial Management

Historically, financial management was originally termed “expenditure management” because, at that time, financial managers focused solely on raising funds from within the company. With advancements in the economy and business, expenditure management evolved into financial management, encompassing broader management activities—not only raising funds but also managing how those funds are utilized to maximize returns (efficiency) and overseeing asset management. According to (Hanafi, 2018, p. 1) financial management can be defined as the management of financial functions and also as the activities of planning, organizing, staffing, executing, and controlling financial functions.

According to (Weston & Copeland, 1989, p. 3) the definition of financial management can be formulated based on the functions and responsibilities of financial managers, where the primary functions of financial management include decisions regarding capital investment, financing business activities, and the distribution of dividends within a company. From the various definitions of financial management provided by experts as outlined above, it can be concluded that financial management relates to three main activities: the allocation of funds; the activity of investing funds in various assets, where the allocation of funds takes the form of: financial assets, which are securities that have market value because they confer the right to receive income. such as stocks, certificates of deposit, bonds, and real assets (real assets), which are tangible assets such as land, buildings, and equipment. Fund raising activities (Raising of funds); activities to obtain funding sources from both internal and external sources, including dividend policy. Asset management activities; funds that have been raised and

allocated in the form of assets must be managed as efficiently as possible.

Budget

Funding refers to the provision of financial resources derived from the revenue and expenditure budget or other funding sources that are spent on the implementation of housing and residential areas in accordance with regulations. Financing refers to any revenue that must be repaid and/or any expenditure that will be recovered for the purpose of implementing housing and residential areas, whether derived from public funds, housing savings, or other funding sources. When starting a business, we always need initial working capital or equity to carry out operations. Working capital is needed for daily business operations, such as purchasing raw materials, paying labor wages, and covering employee salaries. A budget is a detailed plan for the acquisition and use of financial and other resources over a specific period, particularly a fiscal year. A budget encompasses both financial and non-financial aspects of planned operations and projects; for a given period, it serves as a guideline for operations and a projection of operational results for the budgeted period. The process of preparing a budget is also known as budgeting. This is, of course, aimed at recovering the working capital expended in the form of maximum profit and with efficient costs through the sale of its production output. The investment budget of a company differs from the operational cost budget, as the investment budget has long-term impacts and benefits. According to (Halim, 2012, p. 123), the methods that can be used to determine the amount of working capital required are the tied-up funds method and the turnover method.

Cash Flow

Cash flow refers to the inflow and outflow of cash within a specific time frame, such as daily, weekly, or other time periods (Umar, 2009, p. 179; Sugiyanto, 2020, p. 131). Cash flow consists of two main calculation approaches. It is used to illustrate the movement of cash over a specific period and can be calculated using tabular tools or diagrams. Cash flow can originate from operating, investing, or financing activities. Cash flow statements also yield two results: positive and negative cash flow. Cash has three main components: initial cash flow (related to expenditures for investments), operational cash flow (which has a positive net difference that can be used to make installment payments on investment returns), and terminal cash flow (which is the cash flow from the residual value of fixed assets considered to have no further economic value and the return of working capital).

Sensitivity Analysis

Sensitivity analysis of the investment plan for a project is conducted to identify alternative possible outcomes of the feasibility study resulting from various potential changes to one or more components related to project implementation (Tenawaheng et al., 2021). The changes to components made in connection with this sensitivity analysis may be caused by one or more of the following factors: Cost overruns; these occur during project construction and result from cost increases exceeding previously established estimates. During implementation, costs turn out to be higher than initially estimated. Price changes; changes in the prices of inputs used and/or outputs from previous price estimates. Implementation timeline: the project's construction timeline is accelerated and/or postponed from the previously established schedule. Changes in the Internal Rate of Return (IRR) or Return on Investment (ROI): adjustments made to the project's IRR or the ROI desired by management, and the extent to which these changes affect the selling price of the project's output in

relation to its competitiveness in the global market.

Investment Feasibility

The feasibility of a proposed project aims to professionally evaluate the proposal from all angles so that once it is accepted and implemented, it can achieve the planned results. Development projects require significant funds and other resources, which significantly impact the company's sustainability (Soeharto, 2001). The aspects covered in a feasibility study extend beyond financial considerations to include customer needs, internal business processes, market and marketing strategies, human resources, economic and social factors, technical and production aspects, organizational structure, and legal compliance.

Investment Risk with Monte Carlo Simulation

To ensure that the business investment or project to be undertaken is not in vain and does not cause problems in the future, a risk analysis within the investment feasibility study is necessary. Risk in investment is the possibility that the investment outcome differs from what is expected. Definitions of risk according to several experts are as follows: According to (Fahmi, Irham, 2010, p. 3), generally, risk can be understood as a form of uncertainty regarding an event that will occur in the future, with decisions made based on certain considerations. In the context of investment, risk is always associated with the variability of returns obtained from securities. According to (Gole, 1981, p. 204) the Monte Carlo simulation technique is a simulation method that uses random numbers and probabilistic data from probability distributions to calculate the cash flows and NPV of a project. This simulation process allows an investment model to be developed and tested using a set of historical data to ensure that the model reflects actual conditions. The use of appropriate computer software is highly beneficial for this method, as numerical data is randomly selected from various distribution sources as input variables to obtain potential outcomes from each data combination, such as the equity investment ratio, the square-root dimension of the property, and depreciation methods. The results take the form of a probability distribution with a standard deviation. The model simulation relies on the repetition of the same random- t process. This simulation uses statistical sampling techniques to estimate solutions to quantitative problems. The simulation method approximates the expected reality, representing the probability distribution function of each variable's value. The simulation is performed repeatedly, and in each randomization, it generates a value for each variable from its probability distribution.

Research Method

This research method employs a qualitative approach using case studies and project participation to explore data in specific contexts by collecting detailed information through various data collection procedures over a specific period. The research design provides procedures for obtaining the information needed to formulate or resolve issues in the study. Theoretical review: conducting a review of theories relevant to the feasibility of investment implementation. Empirical review: analyzing the assumptions used in feasibility study documents. Feasibility study; estimating the feasibility of the investment to be developed based on risk and return analysis, calculating the project's cash flow projections using inputs including investment cost plans, revenue, and operational costs and performing calculations for Net Present Value (NPV), Internal Rate of Return (IRR), Profitability Index (PI), and Payback Period (PP). Risk analysis; conducting an investment risk analysis based on the Value at Risk (VaR) Monte Carlo method or normal variance. Data collection for this study was conducted based on the research subject, with case studies often being subjective in nature due to the need to draw specific conclusions regarding the issues at hand. The data subjects for this study

were identified by the researcher while analyzing the financial statements of a high-profile property company (PT Intiland Development, Tbk). The data used for this study includes: Field research: Observation of the current system; Literature review: Aimed at obtaining secondary data to support this study and also serving as a theoretical foundation; The data period used is from 2014 to 2024.

Several operational definitions of variables used to assess investment feasibility can be outlined: The Payback Period is a method used to calculate the length of time required to recover the invested capital from the annual cash inflows (proceeds) generated by the investment. Net Present Value is a more advanced capital budgeting calculation technique. The calculation involves subtracting the initial investment from the present value of discounted cash inflows and outflows, measured in present-day monetary terms. The Internal Rate of Return (IRR) is a discount rate expressed as a percentage that determines the interest rate (discount rate) at which the present value of a project's net cash flow equals the present value of the investment. The IRR is the interest rate that makes the project's NPV equal to zero. The Profitability Index (PI) or benefit-cost ratio is the ratio of net cash flows. This method suggests that if the PI is greater than 1, the investment plan for the project in question is sufficiently sound. Compared to NPV, the PI measures the relative increase in the company's owners' wealth, whereas NPV measures the absolute increase in the company's owners' wealth.

The main steps in Monte Carlo Simulation generally include: Determining the Probability Distributions of Key Variables: Identify the variables in the system that involve uncertainty, and determine the probability distributions that represent them (e.g., normal, Poisson, exponential, or empirical distributions from historical data). Creating Cumulative Probability Distributions: Convert standard probability distributions into cumulative probability distributions for each variable. Defining Random Number Ranges: Set random number ranges for each possible value or output of the variables. Generating Random Numbers: Use a random number generator to produce random numbers. Simulating a Series of Experiments: Repeat this process multiple times, using different random numbers each time to simulate various possible scenarios. Analyzing Results: Collect and analyze the results of all simulations to obtain an overall picture of the possible outcomes and their probabilities. The data analysis techniques used in this study, as developed by the author, allow for drawing conclusions through several testing methods, such as: conducting an analysis of the cost of capital and investment financing, and estimating the cash flow of the project. Evaluating investment feasibility using various methods such as Payback Period, Net Present Value, Internal Rate of Return, and Profitability Index; conducting risk analysis in investments using probability, risk identification, impact assessment, planning, and risk mitigation; and analyzing market aspects by examining household growth and housing market growth as indicators of housing demand, since every household requires a home for residential needs.

Result and Discussion

Financial aspects play a crucial role in determining whether a business venture is feasible or not. The results obtained from these methods, as shown in Table 1, can determine whether a business is feasible or not for future implementation.

Table 1. Research Results Data

Year	Cash Flow	Present Value Interest Factor 6%
2014	7,196,944.00	1.0000
2015	550,012.00	0.9434
2016	473,342.00	0.8900
2017	749,510.00	0.8396
2018	1,124,187.00	0.7921
2019	1,415,756.00	0.7473
2020	1,424,740.00	0.7050
2021	1,753,785.00	0.6651
2022	1,162,691.00	0.6274
2023	954,308.00	0.5919
2024	752,320.00	0.5584

Table 2 presents the Payback Period calculation, which is an investment evaluation method that measures the time required for a project to generate sufficient cash flow to cover its initial investment. Based on the table, the Payback Period can be calculated as follows: The initial investment is recovered in 6 full years, with a remaining balance of Rp 797,274.00 yet to be recovered. In the 7th year, the cash flow generated is Rp 1,753,785.00. Therefore, the Payback Period for this project is approximately 6 years and 5.46 months.

Table 3. Net Present Value

Year	Cash Flow	Total
2014	7,196,944.00	7,196,944.00
2015	550,012.00	5,984,809.00
2016	473,342.00	5,511,467.00
2017	749,510	4,761,957.00
2018	1,124,187.00	3,637,770.00
2019	1,415,756.00	2,222,014.00
2020	1,424,740.00	797,274.00
2021	1,753,785.00	- 956,511.00
2022	1,162,691.00	- 2,119,202.00
2023	954,308.00	- 3,073,510.00
2024	752,320.00	- 3,825,830.00

The Internal Rate of Return is a discount rate expressed as a percentage that calculates the interest rate (discount rate) that makes the present value of a project's net cash flows equal to the present value of the investment. The IRR is the interest rate that makes the project's NPV equal to zero. Table 4 presents the calculation of the Internal Rate of Return (IRR) for an investment project. IRR is the discount rate that makes the Net Present Value (NPV) of all project cash flows equal to zero. In other words, IRR is the expected rate of return on an investment.

Table 1 . Internal Rate of Return

Year	Cash Flow	Present Value
2014	-7,196,944.00	-7,196,944.00
2015	550,012.00	518,879.25
2016	473,342.00	421,272.69
2017	749,510.00	629,303.05
2018	1,124,187.00	890,461.40
2019	1,415,756.00	1,057,935.24
2020	1,424,740.00	1,004,385.48
2021	1,753,785.00	1,166,367.19
2022	1,162,691.00	729,486.72
2023	954,308.00	564,853.44
2024	752,320.00	420,091.56
IRR		6.54%

Table 5 presents the calculation of the Profitability Index (PI), also known as the Benefit-Cost Ratio. PI is a ratio that compares the present value of future cash inflows with the present value of the initial investment.

Table 5. Profitability Index

Year	Cash Flow	Present Value
2014	7,196,944.00	7,196,944.00
2015	550,012.00	518,879.25
2016	473,342.00	421,272.69
2017	749,510.00	629,303.05
2018	1,124,187.00	890,461.40
2019	1,415,756.00	1,057,935.24
2020	1,424,740.00	1,004,385.48
2021	1,753,785.00	1,166,367.19
2022	1,162,691.00	729,486.72
2023	954,308.00	564,853.44
2024	752,320.00	420,091.56
Gross Present Value		7,403,036.02
Investment Outlay		7,196,944.00
Profitability Index		1.03

Table 6 is the first step in conducting a Monte Carlo simulation for an investment project. This table illustrates the probability distribution of various possible cash flow values that may occur in the future.

Table 2 . Probability Distribution of Cash Flows

No	Cash Flow	Frequency Distribution	Cumulative Distribution	range area
1	473,342	0.05	0.05	0–5
2	550,012	0.10	0.15	6–15

No	Cash Flow	Frequency Distribution	Cumulative Distribution	range area
3	749,510	0.15	0.30	16–30
4	752,320	0.10	0.40	31–40
5	954,308	0.15	0.55	41–55
6	1,124,187	0.05	0.60	56–60
7	1,162,691	0.10	0.70	61–70
8	1,415,756	0.15	0.85	71–85
9	1,424,740	0.05	0.90	86–90
10	1,753,785	0.10	1.00	91–100

Tables 7 through table 11 represent five different iterations (simulations) of the Monte Carlo method used to project the cash flows of an investment project over 10 periods. Each table represents a possible "scenario," generated randomly based on the cash flow probability distribution defined in Table 6.

Table3. Results of Monte Carlo Simulation 1

Cash Flow for the Next 10 Periods Ahead	Random	Cash Flow
1	52	954,308
2	86	1,424,740
3	10	550,012
4	91	1,753,785
5	96	1,753,785
6	17	749,510
7	70	1,162,691
8	54	954,308
9	74	1,415,756
10	69	1,162,691
Total		11,881,586

Table 4. Results of Monte Carlo Simulations 2

Cash Flow for the Next 10 Periods	Random	Cash Flow
1	97	1,753,785.00
2	12	550,012.00
3	7	550,012.00
4	38	752,320.00
5	75	1,415,560.00
6	94	1,753,785.00
7	37	752,320.00
8	96	1,753,785.00
9	78	1,415,560.00
10	85	1,415,560.00
Total		12,112,699.00

Table 5. Results of Monte Carlo Simulations 3

Cash Flow for the Next 10 Periods	Random	Cash Flow
1	84	1,415,560.00
2	7	550,012.00
3	91	1,753,785.00
4	32	752,320.00
5	40	752,320.00
6	77	1,415,560.00
7	61	1,162,691.00
8	24	749,510.00
9	24	749,510.00
10	7	550,012.00
Total		9,851,280.00

Table 6. Results of Monte Carlo Simulations 4

Cash Flow for 10 Periods	Random	Cash Flow
1	81	1,415,560.00
2	96	1,753,785.00
3	25	749,510.00
4	100	1,753,785.00
5	78	1,415,560.00
6	44	954,308.00
7	49	954,308.00
8	4	473,342.00
9	52	954,308.00
10	79	1,415,560.00
Total		11,840,026.00

Table 7. Results of Monte Carlo Simulations 5

Cash Flow for 10 Periods	Random	Cash Flow
1	68	1,162,691.00
2	94	1,753,785.00
3	5	473,342.00
4	5	473,342.00
5	38	752,320.00
6	63	1,162,691.00
7	92	1,753,785.00
8	86	1,424,740.00
9	1	473,342.00
10	27	749,510.00
Total		10,179,548.00

These tables collectively illustrate how uncertainty in cash flow projections can result in a range of possible total cash flows at the end of the project period. Rather than having a single estimate of total cash flow, Monte Carlo simulation allows us to see a range of possible outcomes, from the lowest (Rp9,851,280 in Simulation 3) to the highest (Rp12,112,699 in Simulation 2) in the example of five simulations. For statistically reliable results in a Monte Carlo simulation, hundreds to tens of thousands of iterations are required. The more iterations, the more accurately the probability distribution of project outcomes can be mapped, and the more valid the risk conclusions that can be drawn. The varying total cash flows in these five tables are initial evidence of uncertainty, which is the primary focus of Monte Carlo analysis.

Discussion

First Steps in Risk Analysis

These five simulations (and ideally thousands more) serve as input for further risk analysis. From each of these simulations, we can calculate investment decision metrics such as Net Present Value (NPV) or Internal Rate of Return (IRR) using the cash flows generated in those simulations.

For example, if we calculate the NPV for each of these total cash flows (by subtracting the initial investment and discounting it), we will obtain five different NPV values. This is far richer information than just a single NPV value.

Significance in Decision-Making

Better Understanding of Risk: By having multiple outcome scenarios (represented by different total cash flows), managers can better understand the risks inherent in the project. They don't just see one "best guess" but also the worst-case scenario, the best-case scenario, and scenarios in between.

Probability of Success/Failure

After running numerous simulations, the total cash flow data (and subsequently the NPV/IRR) can be statistically analyzed. From this analysis, we can determine:

The probability that the project will have a positive NPV.

The probability that the project will have an IRR above the required rate of return.

The most likely range of values for NPV or IRR.

The risk of loss (e.g., the probability of a negative NPV) can be measured and managed.

Basis for Sensitivity and Scenarios: Although Monte Carlo simulations inherently encompass many scenarios, these tables individually show randomly generated "scenarios." These can serve as a basis for discussions regarding extreme "what-if" scenarios or their probabilities.

The Importance of Multiple Simulation Iterations

It should be emphasized that these five simulations are merely a small sample. For statistically reliable results in Monte Carlo simulation, hundreds to tens of thousands of iterations are typically required. The more iterations, the more accurately the probability distribution of project outcomes can be mapped, and the more valid the risk conclusions that can be drawn. The varying total cash flows in these five tables are initial evidence of uncertainty, which is the primary focus of Monte Carlo analysis

Conclusion

Based on the results of the research and analysis conducted, the researcher concludes that: the Payback Period of 7–8 years is feasible; the NPV of 206,092.02 is positive and therefore feasible; the IRR of 6.54% is greater than the BI rate of 6% and is therefore feasible; and the PI of 1.03 is greater than 1.00 and is therefore feasible. Overall, the development of a high-profile company's property project is feasible. The development of a high-profile company's property project, as simulated using the Monte Carlo method, involves elements of uncertainty.

Although the investment in the high-profile company's property development project is deemed feasible based on PP, NPV, IRR, and PI, it is recommended to conduct a more in-depth sensitivity analysis. This is important to understand how changes in key assumptions (e.g., property selling price, construction costs, occupancy rate, or discount rate) can affect these feasibility indicators. Sensitivity analysis will provide a stronger picture of the investment's resilience under various market scenarios. High-profile companies are advised to periodically review and update the financial projections and assumptions used in the calculations of PP, NPV, IRR, and PI. The real estate market is highly dynamic, so regularly updating assumptions will ensure that feasibility indicators remain relevant and accurate. Consider additional qualitative factors. In addition to financial indicators, it is advisable to evaluate qualitative factors such as the developer's reputation, strategic location, design quality, and long-term market demand potential, which can further strengthen investment decisions.

Given that Monte Carlo simulations reveal elements of uncertainty in project development, high-profile companies are advised to implement comprehensive risk mitigation strategies. This may include establishing adequate contingency reserves, diversifying the project portfolio (where possible), utilizing relevant insurance, or drafting contracts that minimize specific risks. Companies should utilize the results of Monte Carlo simulations to identify the key variables that contribute most to the uncertainty of project outcomes. By understanding these variables (e.g., fluctuating material prices, permitting delays, or changes in market demand), management can focus monitoring and control efforts on those areas. It is recommended to develop "best-case," "most likely," and "worst-case" scenarios based on the results of the Monte Carlo simulation. Creating these scenarios will aid in strategic planning and decision-making, enabling the company to prepare for various possible outcomes and develop effective contingency plans. Conduct continuous monitoring and evaluation of the variables identified as sources of uncertainty. By monitoring the movement of these variables in real-time, the company can respond quickly to changing conditions and adjust project strategies as needed. Overall, even though a project is considered feasible, acknowledging the presence of uncertainty through Monte Carlo simulation highlights the importance of proactive and adaptive risk management in dealing with the dynamics of the real estate market.

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