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Cash Flow Analysis for Financial Control in the SDN 6 Kuta Building Construction Project

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ABSTRACT

The construction industry plays a significant role. Construction projects carry a high level of risk, particularly in financial management and in balancing cash flow between revenue and expenditure. This study aims to analyze cash flow and evaluate the financial condition of the SDN 6 Kuta building construction project based on the schedule. The method used is descriptive quantitative, utilizing secondary data in the form of the Implementation Budget Plan, time schedule, and project progress reports. The results indicate that the project's Implementation Budget Plan Rp 1,975,413,914, with a payment system in installments and a 10% down payment. An analysis of the existing cash flow indicates a cash flow imbalance. In some periods, particularly until the middle of the project, cash outflows exceeded cash inflows, resulting in a deficit (overdraft), requiring the contractor to use personal funds to maintain the project. The implementation of alternative policies, such as increasing the down payment to 25% and adding additional funding sources, resulted in a more stable cash flow pattern, with cash receipts tending to exceed expenditures for most of the project period. Although the profit under the existing policy is higher at 12.58% compared to the alternative policy at 9.45%, the alternative policy is considered more optimal because it reduces the risk of overdrafts and improves the project's financial stability. Therefore, proper cash flow management through adjustments to payment systems and funding strategies significantly impacts the success of construction projects, not only in terms of profitability but also in terms of liquidity and project sustainability.

Keywords: Cashflow; Cost Management; Cost Control; Construction Project

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1. INTRODUCTION

Construction projects carry significant risk, both technical and financial. Project success depends heavily on the effective and efficient implementation of construction management in managing available resources [1]. Construction project management aims to improve work by managing labor and other resources and by determining appropriate steps to address issues during project implementation [2], [3]. Construction projects face various risks, particularly time and cost risks. Time risks relate to project delays, while cost risks arise from inappropriate cash flow management, which can hinder project implementation [4], [5]. Therefore, effective financial management is key to success, given that construction projects involve significant investments and require a thorough planning process to ensure efficient [6].

To ensure the availability of financial resources, optimal cash flow planning is required by managing income and expenditure during the project to maximize profits through cost control. Cash flow forms a

sustainable financial cycle, in which funds generated by the project are used to procure subsequent resources [7]. Cash flow management is generally supported by a system of installment payments, adjusted to the agreement and work progress [5].

As in previous research on the Citadines Berawa Beach Bali Hotel Development Project, it was shown that to avoid negative cash flow in projects with a monthly payment system, it is necessary to rearrange the duration of work on non-critical paths, determine the grace period and predecessor on non-critical paths, and apply split tasks to several sub-jobs [8]. Another study on the Banjarmasin Tengah District Road project implemented a monthly payment system with a 30% down payment and a scheduling method based on the earliest start time (EST) [9]. The study was then re-analyzed with several variations of the payment scheme (progress payment), namely without a down payment and with down payments of 20%, 25%, and 30%. The analysis showed that the initial cash flow system produced a profit of 9.842%. Meanwhile, the optimal cash flow system was obtained with a 30% down payment and sliding payment schedule, yielding a profit of 9.855%. Another study conducted by Abma et al. [10] also analyzed the project cash flow by utilizing capital sources in the form of loans from Islamic banks, based on the earliest start work plan using the Precedence Diagram Method (PDM) scheduling network diagram. The results of this study indicate that implementing a payment system in installments from the project owner, combined with additional capital from Islamic bank funding, can produce optimal cash flow conditions in earliest start (ES) scheduling, with a profit level of 7.49%.

This situation also occurred in the SDN 6 Kuta building construction project, which implemented a payment system requiring a 10% down payment of the contract value. In the initial stages of project implementation, the down payment received was sufficient to cover initial project costs, including resource mobilization, site preparation, and material procurement. However, as work intensified in subsequent implementation stages, project costs also increased significantly. From the second to seventh month of project implementation, funding issues began to emerge as available funds were no longer sufficient to cover project operational costs optimally.

This situation indicates that the down payment amount and the implemented payment scheme were insufficient to maintain the project's cash flow. As a result, the contractor had to use additional funding sources, such as internal company funds or loans, to cover cash shortfalls that occurred during project implementation. If this situation is not managed properly, it could disrupt project implementation, increase the risk of delays, and affect the contractor's financial stability [11].

Therefore, a project cash flow analysis is necessary to evaluate cash flow conditions during the implementation period and assess the effectiveness of the implemented payment policy. Through cash flow analysis, the relationship between project cash receipts and disbursements can be identified, and periods with potential cash deficits can be identified. Furthermore, this analysis can be used to evaluate alternative, more optimal payment policies, resulting in a more stable cash flow pattern and supporting the ongoing project implementation.

2. RESEARCH METHODOLOGY

This research uses a quantitative descriptive method, namely an approach that aims to describe the actual condition of the project's cash flow based on numerical data and to analyze the relationship between cash receipts and disbursements during the project implementation period [12] [13].

2.1 Data Collection

The research was conducted on the SDN 6 Kuta building construction project located in Kuta District, Badung Regency, Bali. The research objectives included:

1. Project cash flow (cash inflow and cash outflow),
2. Project installment payment system,
3. Implementation Budget Plan (RAP),
4. Schedule and work progress.

2.2 Cashflow Analysis

A cash flow analysis is conducted to assess cash inflows and outflows during the project implementation period. This analysis is conducted on existing conditions and one alternative policy to compare cash flow stability and project profitability. The cash flow analysis stages in this study include the following steps [14].

1. Preparation of Implementation Budget Plan
   The Implementation Budget Plan is calculated based on a breakdown of the Cost Budget Plan by taking into account real field conditions.
   $$Implementation\ Budget\ Plan = (Labor\ Cost + Material\ Cost + Equipment\ Cost + Subcontracting\ Cost + Overhead) \quad (1)$$
2. Cash In Calculation

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Cash in is calculated based on the project's term payment system.

$$Cash\ In_t = (Progress_t + Contract\ Value) - Retention + DownPayment \quad (2)$$

Description:

$Cash\ In_t$ = Cash receipts in period t

$Cash\ In_t$ = Percentage of work progress

Retention is generally 5%

Down payment is given at the beginning of the project

3. Cash Out Calculation

Cash out is calculated based on actual cost requirements according to work progress:

$$Cash\ Out_t = Labor\ Cost_t + Material\ Cost_t + equipment\ costs_t + Subcontractor\ Fees_t \quad (3)$$

4. Cumulative Cashflow Calculation

$$Cummulative\ Cash\ Flow = \sum (Cash\ In - Cash\ Out) \quad (4)$$

If the result is negative, there is an overdraft (cash deficit).

5. Overdraft Calculation

Overdraft occurs when cumulative cash flow is negative.

6. Calculation of Overdraft Interest Fees

If using a loan:

$$Interest\ Cost = Interest\ Rate \times Overdraft\ Amount \quad (5)$$

7. Project Profit Analysis

Profit is calculated based on the difference between the contract value and the implementation budget plan.

$$Profit = Contract\ Value - Implementation\ Budget\ Plan \quad (6)$$

$$Profit\ Percentage = \frac{Profit}{Implementation\ Budget\ Plan} \times 100\% \quad (7)$$

3. RESULT AND DISCUSSION

A cash flow analysis was conducted to illustrate the cash flow patterns occurring during the project implementation period and to evaluate the contractor's financial situation at each work period. Furthermore, a comparison was made between the existing cash flow policy and alternative policies to determine their impact on the project's cash flow stability. The results of this analysis were then discussed to provide an overview of the effectiveness of the implemented payment system and its implications for the sustainability of construction project funding

3.1. Summary of the Budget Plan

The summary of the budget plan for the SDN 6 Kuta project is shown in Table 1 below.

Table 1. Summary of the Budget Plan

Number	Type of work	Total Price
A	**New classroom construction work**	
i	Preparatory work	Rp. 23,700,365.04
ii	Excavation and embankment work	Rp. 107,824,874.16
iii	Foundation masonry work	Rp. 57,272,562.98
iv	Concrete work	Rp. 1,082,628,354.76
v	Masonry and plastering work	Rp. 180,326,104.75
vi	Floor and wall covering work	Rp. 187,365,585.99
vii	Woodwork work	Rp. 80,913,773.97
viii	Glass lock and hanger work	Rp. 27,101,996.73
ix	Ceiling work	Rp. 153,663,091.38
x	Painting work	Rp. 145,903,256.30
xi	Roof work	Rp. 155,453,450.93
xii	Electrical work	Rp. 39,130,929.70
xiii	Indoor sanitation work	Rp. Rp 40,022,212.32
xiv	Other work	Rp 34,324,573.93
xv	Furniture work	Rp 44,038,277.64
xvi	Bali-style work	Rp 46,426,118.20
xvii	Yard landscaping work	Rp 127,991,327.21
B	**Work Safety and Health Work Plan (RK3K) work**	
I	Work Safety and Health Plan (RK3K) preparation	Rp. 104,895.00
ii	Work Safety and Health Plan (RK3K) socialization and promotion	Rp. 311,188.50
iii	Personal protective equipment and work safety equipment	Rp. 2,982,514.50
iv	Insurance and permits	Rp. 17,482.50

v	K3 personnel	Rp. 1,048,950.00
vi	Health facilities	Rp. 34,965.00
vii	Signs	Rp. 157,342.50
viii	Other matters related to K3 risk control	Rp. 104,895.00
	Total	**Rp. 2.538.849.089,02**

Based on the budget plan recapitulation, the total cost of the SDN 6 Kuta building construction project is Rp2,538,849,089.02, with the largest component coming from concrete work at Rp1,082,628,354.76. This indicates that the building structure is the primary focus and accounts for the largest portion of the costs. Furthermore, finishing works such as masonry and plastering, floor and wall coverings, ceilings, and painting also contribute significantly to the total cost, reflecting the importance of the building's quality and aesthetics. Supporting works such as roofing, yard landscaping, and Balinese-style work add value to the project, both functionally and aesthetically. Meanwhile, utility components such as electrical and sanitation work account for a relatively smaller proportion of the cost, but remain crucial in supporting the building's operations.

Conversely, occupational safety and health (RK3K) work is very small compared to the total cost, but it is still mandatory to ensure safety during project implementation. Overall, the cost structure in the RAB shows the dominance of structural and finishing work, which has implications for the need for large funds at the beginning of the project, thus potentially affecting cash flow conditions during project implementation.

3.2. Recapitulation of Implementation Budget Plan

The components of the Implementation Budget plan are divided into direct and indirect costs. Direct costs include all expenses directly related to field activities, including materials, labor, contract costs, and equipment rental. Meanwhile, indirect costs include project preparation and completion costs, as well as operational costs incurred during project implementation.

Table 2. Recapitulation of Implementation Budget Plan

Number	Job description	TotalCost	Percentage
I	**DIRECT COSTS**		
1	Labor wages	Rp 514,145,621	**26.03**
2	Material costs	Rp 919,262,423	46.54
3	Subcontractor costs	Rp 450,529,620	22.81
4	Equipment costs	Rp 39,700,000	2.01
	TOTAL DIRECT COSTS	**Rp 1,923,637,664**	**97.38**
II	**INDIRECT COSTS**		
1	Preparation and completion costs	Rp 15,576,250	
2	Operational costs	Rp 36,200,000	
	TOTAL INDIRECT COSTS	**Rp 51,776,250**	**2.62**
IMPLEMENTATION BUDGET PLAN (RAP)		**Rp 1,975,413,914**	
COST BUDGET PLAN (RAB)		**Rp 2,259,575,689**	
PROFIT		**Rp 284,161,775**	**12.58**

Based on the recapitulation of the implementation budget plan, the project cost structure is dominated by direct costs at 97.38%, with the largest component coming from material costs (46.54%), followed by labor (26.03%) and subcontractors (22.81%). This composition indicates that the project is highly dependent on material availability and labor productivity, making these two components key factors in cost control and project success.

Managerial Implications

The dominance of material costs indicates that procurement strategy plays a critical role in project management. Fluctuations in material prices, supply delays, or errors in planned volumes can significantly impact total costs. Therefore, contractors need to implement strategies such as phased purchasing planning, price negotiations with suppliers, and strict material inventory control.

Meanwhile, the significant proportion of labor costs demonstrates the importance of productivity management and work scheduling. Work delays due to low productivity will increase indirect costs and disrupt project cash flow. High subcontractor costs also indicate dependence on external parties. This requires strict supervision of subcontractor performance, both in terms of quality, time, and cost, to avoid budget overruns [15].

Project Financial Risks

The cost structure of this implementation budget plan poses several key financial risks, namely:

1. Cashflow (Liquidity) Risk

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With the dominance of direct costs, particularly materials, which are generally paid for up front, the project tends to experience large cash outflows in the initial phase. Meanwhile, the installment payment system means that cash receipts do not always match expenditures. This situation has the potential to lead to negative cash flow (overdraft), as found in the project cash flow analysis.

2. Over-Optimistic Profit Ris
   Although a profit of 12.58% was achieved, this value has the potential to be unrealized if cost deviations or cash flow disruptions occur during project implementation.

To mitigate this risk, several managerial strategies are required, including:

1. Payment System Optimization
   Increasing down payments or adjusting payment terms to better align with project cash out requirements, thereby reducing the risk of cash deficits.
2. Integrated Cash Flow Planning
   Integrating the implementation budget pla and time schedule to predict funding needs for each period allows for early anticipation of potential overdrafts.

Although the implementation budget plan demonstrated cost efficiency compared to the planned cost budget and generated a profit of 12.58%, this result does not directly reflect a secure financial position. A cost structure heavily weighted toward direct components actually increases pressure on the project's cash flow. Therefore, project success is determined not only by the size of the profit, but also by the contractor's ability to maintain stable cash flow throughout the project.

3.3. Cashflow Analysis

A cash flow analysis was conducted based on data from the Implementation Budget Plan, the project implementation schedule, and the payment system for the SDN 6 Kuta building construction project. The results of this analysis were used to periodically describe the project's cash flow conditions, identify potential cash deficits, and evaluate the effectiveness of the payment policies implemented in maintaining the project's financial stability during the implementation period.

1. Existing cash flow analysis

For the SDN. 6 Kuta construction project, the existing cash flow policy is based on the following provisions:

a. Payments are made in installments, with a retention fee deducted from the first installment.
b. A 10% down payment is used.
c. No bank loan capital is used.
d. A 5% retention fee is paid one month after the building reaches 100% physical completion.

Table 3. Cumulative existing cash receipts and disbursements

Month	Cumulative Admissions	Cumulative Expenditure	Difference
1	Rp 225,957,568.92	Rp 147,104,098.24	Rp 78,853,470.68
2	Rp 451,915,137.85	Rp 473,112,891.06	-Rp 21,197,753.21
3	Rp 451,915,137.85	Rp 925,464,386.89	-Rp 473,549,249.05
4	Rp 1,016,809,060.15	Rp 1,469,362,669.93	-Rp 452,553,609.77
5	Rp 1,016,809,060.15	Rp 1,821,219,748.48	-Rp 804,410,688.32
6	Rp 1,581,702,982.46	Rp 1,951,830,127.96	-Rp 370,127,145.50
7	Rp 2,146,596,904.77	Rp 1,975,413,914.37	Rp 171,182,990.40
8	Rp 2,259,575,689.23	Rp 1,975,413,914.37	Rp 284,161,774.86
	PROFIT	**Rp 284,161,775**	**12.58%**

Table 3 presents the accumulated cash receipts and disbursements over eight months under existing conditions. This data illustrates the cumulative cash flow pattern from one period to the next and also shows the difference between total receipts and disbursements for each month. Cumulative cash receipts are from

the project's down payment, while cash disbursements include labor, materials, subcontractor costs, and equipment rental costs.

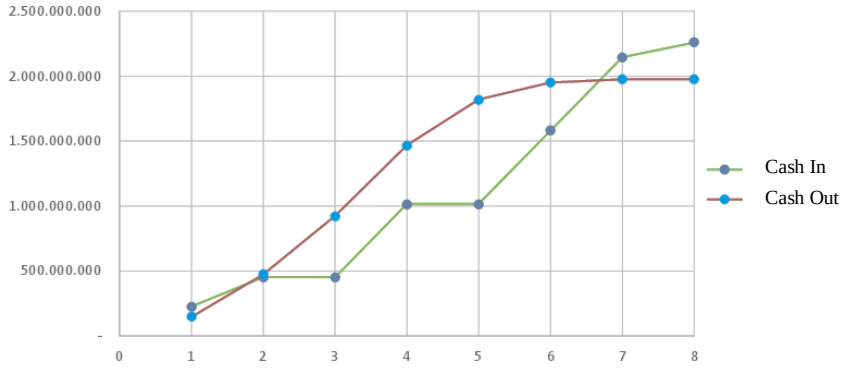

Figure 1. Existing cash flow

Project revenue in this analysis is calculated based on the actual cost of Rp 2,259,575,689.23, received in installments in accordance with applicable payment terms throughout the project's implementation period. This installment pattern reflects a progress-based payment system commonly used in construction projects. With this scheme, the balance between cash inflows and cash outflows is crucial for ensuring smooth project implementation and the contractor's financial stability.

Based on the cash flow illustration in Figure 1, we can compare project revenues and expenditures over the eight observation periods. During the initial implementation period, both revenues and expenditures were relatively low and balanced. This situation indicates that construction activity in the initial phase remained limited, so operational costs were not significant and could be covered by revenue. This situation reflects a relatively secure cash flow and did not create significant liquidity pressures. Entering the third to fifth months, expenditures increased more rapidly than revenues. This increase was primarily due to the intensification of construction activities during the main work phase, when demand for materials, labor, and equipment simultaneously increased. This imbalance between expenditures and revenues resulted in a negative project cash flow, with cash outflows exceeding cash inflows. This condition indicated financial pressure midway through the project and could have led to a liquidity shortage if not managed effectively.

In the sixth month, project revenues increased significantly, approaching expenditures. This increase in revenues reflected greater progress on the work, which directly affected the installment payments received from the project owner. This indicated an improvement in cash flow performance, with the gap between revenues and expenditures narrowing. This indicated that the project was entering a cash flow recovery phase after experiencing pressure in the previous period.

Furthermore, in the seventh to eighth months, project revenues exceeded expenditures. This indicated a positive project cash flow and greater financial stability. In this phase, revenues not only covered expenditures but also generated a cash surplus that could be utilized to strengthen the project's financial position. The stability of cash flow in this final period indicated that the project could conclude its implementation in a relatively healthy financial condition. Based on the results of the existing cash flow analysis, it can be concluded that although the project generated a profit of Rp 284,161,775 with a profitability level of 12.58%, there was significant cash flow pressure during the middle period of implementation. The presence of negative cash flow and the imbalance between income and expenditure indicate that the project's cash flow condition was not fully stable throughout the implementation period. Therefore, although the existing policy overall generated profits, further analysis is needed through the implementation of alternative policies to improve cash flow stability and minimize financial risks during the project implementation period.

2. Cash flow analysis with alternative policies

For the SDN 6 Kuta construction project, an alternative policy was implemented to address the existing cash flow imbalance. The cash flow analysis using this alternative policy is based on the following provisions:

a. Payments are made in installments, with a retention fee deducted from the first installment.
b. No initial capital is used.
c. A 25% down payment is used.
d. A bank loan of IDR 1,000,000,000 is used, with an average interest rate of 8.48%.
e. A 5% retention fee is paid one month after the building reaches 100% physical completion.

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Table 4. Alternative policy cash receipts and disbursements

Month	Cumulative Admissions	Cumulative Expenditure	Difference
1	Rp 564,893,922.31	Rp 147,104,098.24	Rp 417,789,824
2	Rp 1,451,915,138	Rp 473,112,891.06	Rp 978,802,247
3	Rp 1,451,915,138	Rp 1,032,531,054	Rp 419,384,084
4	Rp 2,016,809,060	Rp 1,683,496,003	Rp 333,313,057
5	Rp 2,016,809,060	Rp 2,142,419,748	Rp -125,610,688
6	Rp 2,581,702,982	Rp 2,380,096,795	Rp 201,606,188
7	Rp 3,146,596,905	Rp 2,510,747,248	Rp 635,849,657
8	Rp 3,259,575,689	Rp 2,617,813,914	Rp 641,761,775
9	Rp 3,259,575,689	Rp 2,724,880,581	Rp 534,695,108
10	Rp 3,259,575,689	Rp 2,831,947,248	Rp 427,628,442
11	Rp 3,259,575,689	Rp 2,939,013,914	Rp 320,561,775
12	Rp 564,893,922.31	Rp 3,046,080,581	Rp 213,495,108
PROFIT		**Rp 213,495,108**	**9.45 %**

Table 4 presents cumulative cash receipts and disbursements under alternative policies over 12 months. The data illustrates the development of cumulative cash flows over time and the difference between cash receipts and disbursements each month. Cash receipts come from project down payments and additional funding in the form of loans. Meanwhile, cash disbursements include labor costs, material procurement, subcontractor fees, equipment usage costs, and loan repayments and interest payments.

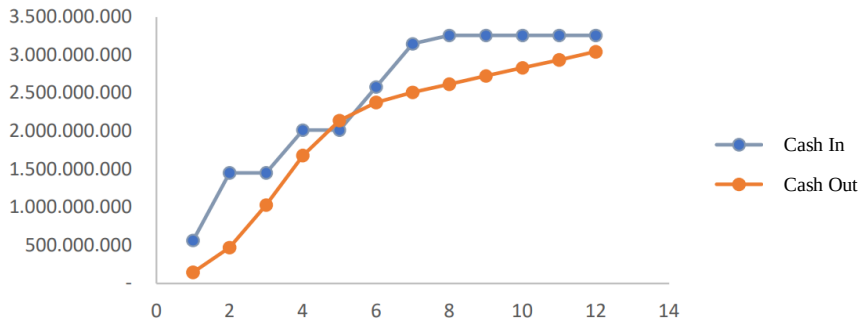

Figure 2. Cashflow with alternative policies

The calculation of project revenue in this study is based on the actual cost of Rp 2,259,575,689, which was incurred in installments in accordance with the payment scheme applicable to the project's implementation. This installment payment scheme reflects common practice in construction projects, where funds are received from the project owner based on work progress. With this approach, cash flow analysis is crucial for assessing the project's ability to maintain a balance between cash inflows and outflows during the implementation period. The cash flow illustration in Figure 2 shows that during the initial period of project implementation, cash flow was positive. This indicates that the funds received were sufficient to cover project expenditures. This situation was generally influenced by the relatively low work intensity in the initial phase, resulting in limited operational and implementation costs. Furthermore, the initial project revenue provided sufficient liquidity for the contractor to finance construction activities without significant financial pressure.

Entering the middle period, cash outflows increased significantly, approaching the value of cash inflows. This increase reflects the project's main implementation phase, during which the costs of materials, labor, and equipment increased simultaneously. This situation puts pressure on the project's cash flow, as the gap between revenues and expenditures narrows. At this stage, the project's financial management capability becomes crucial to maintaining work continuity without liquidity constraints. However, from the sixth period to the end of the observation period, cash inflows increased more than cash outflows. This indicates that the work progress achieved has contributed significantly to the value of the installment payments received. Meanwhile, although cash outflows continued to increase, the increase was more controlled and gradual [16]. This condition indicates improvements in project cost management, where expenditures are aligned with the capacity to generate revenue.

Overall, the cash flow analysis indicates that the project maintained a positive, relatively stable cash flow throughout the 12 observation periods. This cash flow stability reflects the project's ability to maintain a balance between revenues and expenditures, thereby minimizing the risk of a cash deficit. Based on the financial evaluation, implementing alternative policies improved the project's financial performance,

generating a profit of Rp 213,495,108, for a profitability of 9.45%. This value indicates that alternative policies significantly increased project profitability relative to the existing policy.

The results of this analysis align with those of Wimantara et al. [17], who found that existing policies tend to yield lower profits than alternative policies based on more comprehensive financial analysis. Furthermore, the study showed that alternative policies generated more positive and stable cash flow patterns, thereby supporting the sustainability of project implementation. This alignment of results indicates that a cash flow analysis-based financial management approach plays a significant role in improving the financial performance of construction projects.

Furthermore, the findings of this study are consistent with those of research on road infrastructure development [18], which concluded that implementing a down payment and installment payment system by the project owner, with funding support from banking institutions, generated more optimal cash flow. This system provides greater financial flexibility for project implementers, allowing operational funding needs to be met without disrupting financial stability. Therefore, implementing alternative financial policies, supported by appropriate payment schemes and effective cash flow management, is a significant strategy for increasing the profitability and financial stability of construction projects [19].

Comparison of Existing Cash Flow and Alternative Cash Flow

A comparative cash flow analysis between the existing and alternative policies was conducted to more comprehensively evaluate the project's financial performance, particularly regarding cash flow stability and the ability to maintain a balance between cash inflows and outflows during the implementation period. This comparison is important, as although the existing policy generated overall profits, there were indications of cash flow imbalances at certain points, potentially creating liquidity risks.

Based on the existing cash flow analysis, the project's cash flow exhibited significant fluctuations. In the initial period, cash flow was relatively balanced because revenues and expenditures remained low. However, midway through implementation, particularly in the third to fifth months, expenditures increased more rapidly than revenues. This condition resulted in a negative project cash flow, with cash outflows exceeding cash inflows. Although cash flow recovered and showed a positive trend in the final period of the project, the negative cash flow phase indicates that the existing policy was unable to maintain consistent cash flow stability throughout the implementation period.

In contrast, the cash flow analysis under the alternative policy demonstrated better and more stable performance. Under this scenario, project revenues are structured to more closely align with expenditure patterns through a more adaptive payment scheme and improved cost management. This alignment ensures that the inflow of funds is more proportional to the actual financial demands of each project phase. As a result, although expenditures continue to increase during the middle stages of the project particularly due to intensive structural and finishing works—the gap between revenues and expenditures is significantly reduced, thereby minimizing or even avoiding negative cash flow conditions.

This improved balance has important implications for project execution. Under the existing policy, periods of cash deficit required the contractor to rely on internal funds or external short-term financing, which increases financial pressure and exposes the project to liquidity risk. In contrast, the alternative policy maintains cash flow closer to equilibrium or in a positive position, reducing the dependence on emergency funding sources and enabling smoother financial operations throughout the project lifecycle. From a managerial perspective, stable cash flow directly contributes to maintaining project continuity. Adequate cash availability ensures timely procurement of materials, consistent payment of labor wages, and uninterrupted engagement of subcontractors. Conversely, cash deficits such as those observed in the existing policy can lead to delayed payments to suppliers and workers, which may trigger a chain reaction of operational disruptions, including reduced productivity, work stoppages, or even contractual disputes.

Furthermore, the alternative policy significantly reduces the need for large working capital reserves. In the existing condition, the contractor must prepare substantial working capital to cover the mismatch between early-stage expenditures and delayed revenue realization [20]. This requirement not only ties up financial resources but also increases the risk of project delays if sufficient capital is not available. By improving the synchronization between cash inflow and outflow, the alternative policy lowers the burden of working capital, allowing contractors to allocate resources more efficiently and reduce financial strain. However, this improved cash flow stability comes with a trade-off. The use of additional financing mechanisms, such as increased down payment and potential borrowing, may introduce extra costs (e.g., interest expenses), which ultimately reduce the overall profit margin. Despite this, from a project management standpoint, ensuring liquidity and minimizing financial risk is often more critical than maximizing short-term profit, particularly in projects with tight schedules and high upfront costs. Overall, the findings highlight that a well-structured cash flow strategy not only improves financial stability but also plays a crucial role in preventing project delays, reducing dependency on external funding, and enhancing the overall reliability of project execution.

The most significant difference between the two policies was observed during the mid- to late-stage of the project period, where financial pressure typically reaches its peak. Under the existing policy, cash flow recovery only occurred toward the end of the project, indicating a prolonged period of financial strain. During this phase, expenditures particularly for structural completion, finishing works, and subcontractor payments remained high, while incoming payments were not sufficient to offset these costs in a timely manner. As a result, the project experienced extended periods of negative cash flow, increasing reliance on internal reserves or external financing.

In contrast, under the alternative policy, cash flow recovery occurred earlier and was followed by a more stable and consistent growth pattern. This indicates that the alternative policy is more effective in managing the critical transition from a high-expenditure phase to a revenue-generating phase [21]. By improving the synchronization between inflows and outflows, the alternative policy reduces the duration and magnitude of financial deficits, thereby enhancing the overall financial resilience of the project. Furthermore, the more consistent positive cash flow under the alternative policy provides greater financial flexibility for project implementers. This flexibility allows contractors to meet operational obligations such as timely payment of labor wages, procurement of materials, and settlement of subcontractor invoices without disruption. It also reduces dependence on external funding sources, which are often associated with additional costs, administrative burdens, and financial risk exposure. From a financial performance perspective, the two policies present a clear trade-off. The existing policy generated a higher nominal profit of Rp284,161,775 with a profitability rate of 12.58%. However, this higher profit is accompanied by periods of negative cash flow, indicating a significant risk of financial imbalance and potential liquidity constraints. On the other hand, the alternative policy yielded a lower profit of Rp213,495,108 with a profitability rate of 9.45%, but demonstrated a more stable and predominantly positive cash flow pattern throughout the project duration.

This finding highlights an important consideration that is often overlooked in conventional financial evaluation namely, the balance between profitability and cash flow stability within the context of risk management. While higher profit margins are generally desirable, they do not necessarily guarantee financial sustainability if accompanied by poor cash flow conditions. In construction projects, where cash-intensive activities dominate early and mid phases, the ability to maintain liquidity is critical to avoiding delays, work stoppages, or contractual penalties. Therefore, the alternative policy can be considered more robust from a risk management perspective. By prioritizing cash flow stability, it reduces the likelihood of liquidity-related disruptions, such as delayed payments, decreased workforce productivity, or interrupted material supply [22]. This stability also minimizes the contractor's exposure to financial risk, particularly in uncertain economic conditions or when access to external financing is limited.

In conclusion, although the existing policy offers higher profitability in nominal terms, the alternative policy provides a more balanced financial performance by ensuring stable cash flow and lower risk exposure. This suggests that project decision-making should not rely solely on profit indicators, but also incorporate cash flow behavior and risk considerations to achieve a more sustainable and resilient project financial strategy.

4. CONCLUSION

Based on the cash flow analysis of the SDN 6 Kuta building construction project, it can be concluded that the existing cash flow policy generated a higher profit of Rp284,161,775 with a profitability level of 12.58%. However, the resulting cash flow pattern exhibited significant fluctuations throughout the project implementation period. Midway through the project, particularly in the third to fifth months, a negative cash flow condition occurred, with project expenditures exceeding revenues. This condition indicated a cash flow imbalance that potentially created liquidity risks during project implementation. Conversely, the cash flow analysis under the alternative policy showed a more stable pattern. Although the resulting profit was smaller, at Rp213,495,108 with a profitability level of 9.45%, the alternative policy was able to maintain a balance between project revenues and expenditures throughout most of the implementation period. This minimized the risk of a cash deficit, thereby maintaining the project's financial stability. Overall, the research results indicate that the existing cash flow policy was more focused on achieving the project's final profit but less effective at maintaining cash flow stability throughout the implementation period. Meanwhile, alternative policies provide a better balance between profitability and cash flow stability, making them safer and more sustainable from a project financial management perspective. Therefore, alternative policies can be considered as a more optimal cash flow management strategy, particularly for construction projects with relatively long implementation durations and high operational funding requirements.

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