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Analisis Perbandingan Rencana Anggaran Biaya Perhitungan Kontraktor dengan Metode Perhitungan AHSP 2025 pada Proyek Pembangunan BRI Unit Setu Bekasi

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Abstract: Indonesia is a developing country, and as such, many projects are underway or about to commence. In practice, there are often discrepancies between the budget prepared by the contractor and that prepared based on the AHSP 2025. This study aims to analyze the comparative Budget Plan (RAB) using two different approaches, namely the contractor's calculation method and the 2025 Work Unit Price Analysis (AHSP) method on the BRI Unit Setu Bekasi construction project. This study uses a descriptive-comparative quantitative approach, where all components of the structural work are analyzed in terms of unit prices of materials, labor wages, and tools based on both methods. The results show that the total budget cost based on the contractor's method is Rp. 1,995,455,880.00, while based on the 2025 AHSP method is Rp. 2,414,858,280.00. From these results, there is a difference of Rp. 419,402,400.00 or approximately 21%, where the contractor's method is lower in terms of total costs. This difference is caused by the flexibility of the contractor's method, which adjusts the unit price to field conditions and cost efficiency strategies, while the AHSP method is standard and administrative in nature according to the provisions of the Ministry of PUPR. This study contributes to choosing the most effective and efficient budget approach in construction projects. For the project implementers and owners, this comparison serves as an evaluative basis for preparing a realistic yet accountable budget.

Keywords: Cost Budget Plan (RAB), Contractor Method, AHSP 2025, Project Efficiency, Construction Projects

INTRODUCTION

Indonesia is a developing country; therefore, many potential projects are currently underway or about to begin. These projects are being undertaken in various major cities across the country. As is well known, a project is based on time and resource factors, including money, materials, equipment, labor, and implementation methods. Managing project constraints requires a sound management system. The larger the project, the more complex the system must be to ensure that objectives are achieved without any obstacles.

The Cost Budget Plan (RAB) is a crucial element in project implementation. The RAB serves as the basis for planning, financing, controlling costs, and assessing project performance. In practice, several methods can be used to prepare the RAB, one of which is the Work Unit Price Analysis (WUPA) method. This method is the official standard issued by the Ministry of Public Works and Public Housing (PUPR) of the Republic of Indonesia.

In this study, researchers will analyze the differences between the RAB prepared by contractors and the RAB calculated using the AHSP method. By conducting a comparative analysis, it is hoped that a deeper understanding of the accuracy, efficiency, and feasibility of contractor budget planning will be gained, as well as its impact on the sustainability and quality of project implementation.

This research is expected to make a significant contribution to the field of project management, particularly in the area of project budget planning. Academically, this research can serve as a reference for students and other researchers in calculating unit prices for work.

LITERATURE REVIEW

According to the Project Management Institute (2013), project management is the application of knowledge, skills, tools, and techniques to project activities to meet all project requirements. Project management encompasses the planning, implementation, supervision, and completion of work within a specified timeframe, budget, and quality standards.

The Cost Budget Plan (RAB) is a document that outlines the total costs required to implement a construction project. The RAB includes calculations of work volumes, unit prices for materials, labor wages, and equipment used. According to Sastraatmadja (1994), a detailed estimate is essentially a complete, detailed RAB, including indirect costs or overhead, contractor profit, and taxes. Typically, overhead, profit, and taxes are calculated as a percentage of the construction cost.

The AHSP method tends to be more conservative because it refers to national standards that have been adjusted to current economic conditions and provides a more detailed cost structure. Meanwhile, the contractor method generally adopts a more flexible approach based on field experience. This can be influenced by the contractor's internal cost-saving strategies aimed at winning tenders or reducing implementation costs.

Previous research (Amanda M. B. Iwawo et al., 2024) explained that the AHSP method provided lower estimated values than the contractor method. Meanwhile, research (Dwi Febriana Sitompul, 2023) showed that the contractor method can produce a more efficient budget.

RESEARCH METHOD

This research uses a quantitative approach, where quantitative methods are used research that uses number-based or statistical data collection to explain observed phenomena. This study aims to analyze the project cost budget calculated by 2 different methods, namely contractor calculations and method calculations based on the Analysis of Unit Prices of Work (AHSP) 2025.

The location of this research was carried out at the BRI Unit Setu Bekasi Development Project, which is located on Jalan H. Djole, Lubang Buaya, Kec. Setu, Bekasi Regency, West Java 17631. The BRI Unit Setu Bekasi Development Project, West Java has been agreed upon by the project owner on behalf of PT Bank Rakyat Indonesia (Persero) Tbk, and the planning consultant on behalf of PT Cakra Globalindo Utama. The project owner has approved the contract value that has been submitted by the planning consultant after going through a public or open tender process.

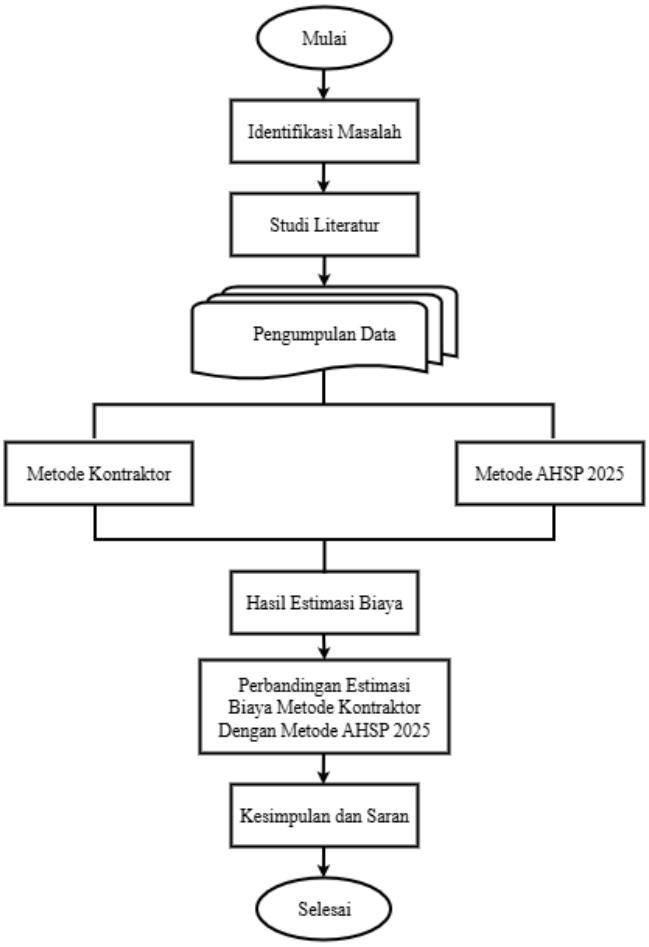
The population in this study is all work components listed in the Budget Plan (RAB) on the BRI Unit Setu Bekasi Development Project. The population includes all types of construction work; besides that, this population is used as the basis for analyzing the comparison between the contractor's calculation method and the 2025 Analysis of Unit Prices of Work (AHSP) method. This research instrument consists of the contractor's version of the RAB document, the AHSP 2025 version of the RAB document, the unit price list of materials and wages, and software using Microsoft Excel.

The data collection techniques consisted of documentation studies and literature studies. Secondary data collection was carried out through documentation studies, such

as the Cost Budget Plan (RAB) document from the contractor, the Cost Budget Plan document based on the Analysis of Unit Prices of Work (AHSP) 2025 method based on official guidelines from the Ministry of PUPR, a list of unit prices of materials and wages. Data collection is also carried out by studying literature related to construction cost budget theories, the AHSP Method, and project management principles.

The sources of literature used came from civil engineering books, scientific journals, and technical regulatory documents such as Permen PUPR. Data analysis techniques are processed using Microsoft Excel software. The steps include: (1) Conduct a literature study to obtain secondary data; (2) Determine the work used in the 2025 Analysis of Unit Price of Work (AHSP); (3) Calculate the Unit Price of Work of the 2025 Analysis of Unit Price of Work based on the latest list of basic unit prices of wages and building materials; (4) Make a recap of the Budget Plan (RAB), (5) Review The difference in cost estimates between the Contractor's calculations and the 2025 AHSP.

Flowchart



Gambar 1 Flowchart
Sumber: Penulis

RESULT AND DISCUSSION

General Description

The project that is the object of this research is the BRI Unit Setu Bekasi Development Project, which is located on Jalan H. Djole, Lubang Buaya, Setu District, Bekasi Regency, West Java. The project is implemented by PT Cakra Globalindo Utama and is designed to have three floors with a total building area of 489.75 m^2 on an area of 337 m^2. The project is planned to be completed within 7 months, from March to September 2024, with a maintenance period of 180 days after project completion.

Cost Budget Plan (RAB)

The Cost Budget Plan (RAB) is the amount of costs required for both wages and materials in a construction project, whether houses, buildings, bridges, or others. The steps in calculating RAB are: (1) Create work items and calculate the volume of work; (2) Make a list of unit prices for wages and materials; (3) Make a job analysis per work item; (4) Make a cost budget plan.

Work Volume

Calculation of volume after obtaining items or descriptions of work to be carried out, then calculating the volume for each job in accordance with existing units.

Table 1. Example of Work Volume Calculation

No	Type of Work	Unit	Volume of Work
	Reinforced Concrete Work		
	Practical concrete grade K175		
	Structural Concrete Quality K250		
A	**Structure Concrete**		
1	Working Floor Foot Plate Foundation (ATM)	m^3	0.90
2	Foot Plate Foundation P1 (100/100)	m^3	7.26
3	Sloof Structure (15/20) (ATM)	m^3	3.43
4	Column K1 (40/40)	m^3	13.82
5	Beam B1 (30/50)	m^3	14.67
6	Beam B2 (20/35)	m^3	1.15
7	Beam B3 (15/20)	m^3	1.77
8	Floor Plate Concrete LT.02 tb. 12 cm	m^3	23.11
9	Concrete Stairs 1 ke 2	m^3	1.67
10	Concrete Wall Brangkas Wiremesh M8 Double	m^3	5.89
B	**Practical Concrete**		
1	Practical Column 12/12	m^3	0.40
2	Practical ring beam 12/20	m^3	0.17
3	Latei beam 12/20	m^3	0.31

Unit Price List of Wages

The wage unit price list in Table 4.4 is a list of unit prices used as a reference in making the Budget Plan (RAB), which is the Standard Unit Price of Construction Work Wages in 2025.

Table 2. Example of Wage Unit Price Standard

No.	Code	Wages	Unit	Unit Price
1	L.01	Worker	OH	Rp 100.000,00
2	L.02	Bricklayer	OH	Rp 145.000,00
3	L.02	Carpenter	OH	Rp 145.000,00
4	L.02	Ironworker	OH	Rp 145.000,00
5	L.02	Painter	OH	Rp 145.000,00
6	L.02	Upholsterer	OH	Rp 145.000,00
7	L.02	Plumber	OH	Rp 145.000,00
8	L.02	Slash fitter	OH	Rp 145.000,00
9	L.02	Welder	OH	Rp 145.000,00
10	L.02	Electrician	OH	Rp 145.000,00
11	L.02	Aluminum fitter	OH	Rp 145.000,00
12	L.02	Erection worker	OH	Rp 145.000,00
13	L.02	Planting worker	OH	Rp 145.000,00
14	L.03	Head handyman	OH	Rp 175.000,00
15	L.04	Foreman	OH	Rp 200.000,00

Unit Price of Materials and Equipment

The list of unit prices of Materials and Equipment in Table 3 is a list of unit prices used as a reference in making the Budget Plan (RAB), which is the Standard Unit Price of Materials and Equipment for Construction Work in 2025.

Table 3. Example of Standard Unit Price of Materials and Equipment in 2025

No.	Description	Unit	Unit Price	
A	**Earth and Rock Material**			
	Red brick	buah	Rp	700,00
	Red brick 5 x 11 x 22 cm (per m3)	m3	Rp	590.000,00
	Light brick	m3	Rp	703.500,00
B	**Wood Material**	m3	Rp	685.800,00
	Dolken wood φ 8-10 length 400 cm	m'	Rp	5.000,00
	Dolken wood φ 8-10 length 400 cm	rod	Rp	20.000,00
	Wood	m3	Rp	11.950.000,00
C	**PVC Pipe Material**			
	PVC accessories	m'	Rp	5.700,00
	HDPE pipe 40/33 mm	m'	Rp	13.300,00
	PVC pipe type D Ø 2"	m'	Rp	23.500,00
D	**Electrical Material**			
	NYM cable 3 x 2.5 mm²	m	Rp	21.300,00
E	**Equipment Rental**			
	Concrete pan mixer	hour	Rp	800.700,00
	Jack hammer + generator	day	Rp	2.300.000,00
	Drilling machine	unit	Rp	450.000,00

CONTRACTOR METHOD COST BUDGET PLAN ANALYSIS

The contractor's method of preparing a Cost Budget Plan (RAB) is a budgeting approach based on experience, efficiency of previous project implementation, and actual field calculations by the implementing contractor. The following are the results of the calculation of the contractor's method Budget Plan Cost (RAB) on the BRI Unit Setu Bekasi Development Project, as shown in Table 4.

Table 4. Example of Calculation of Budget Plan Cost (RAB) Contractor Method

No	Type of Work	Volume	Unit	Unit Price (Rp)	Amount (Rp)
II	**PREPARATORY WORK**				
1	Directors keet and material warehouse	9.00	m^3	750.000,00	6.750.000,00
2	Uitzet and Bouwplank	74.80	m^1	55.000,00	4.114.000,00
3	Project safety fence	15.00	ls	325.000,00	4.875.000,00
4	Tools, etc.	7.00	bln	2.725.000,00	19.075.000,00
5	Environmental and security coordination	7.00	bln	2.250.000,00	15.750.000,00
	Sub Total				**339.335.255,00**

COST BUDGET PLAN ANALYSIS AHSP METHOD 2025

The Analysis of Work Unit Price (AHSP) method is a systematic approach that refers to national standards in the preparation of a construction project Budget Plan (RAB). The following are the results of the analysis of the Cost Budget Plan (RAB) of the 2025 Analysis of Unit Prices of Work (AHSP) method on the BRI Unit Setu Bekasi Development Project, as shown in Table 5.

Table 5. Example of Calculation of Budget Plan Cost (RAB) AHSP Method 2025

No	Type of Work	Volume	Unit	Unit Price (Rp)	Amount (Rp)
II	**PREPARATORY WORK**				
1	Directors keet and material warehouse	9.00	m^3	5.958.700,00	53.628.300,00
2	Uitzet and Bouwplank	74.80	m^1	250.100,00	18.707.480,00
3	Project safety fence	15.00	ls	664.400,00	9.966.000,00
4	Tools, etc.	7.00	bln	3.660.400,00	25.622.800,00
5	Environmental and security coordination	7.00	bln	2.250.000,00	15.750.000,00
	Sub Total				**123.674.580,00**

RECAPITULATION OF COST BUDGET PLAN (RAB) BETWEEN CONTRACTOR METHOD AND AHSP 2025 METHOD

After getting all the calculations for each work item, they are then recapitulated to make it easier to compare the two methods. The recapitulation of the Cost Budget Plan (RAB) for the BRI Unit Setu construction project, Bekasi, using the contractor method and the AHSP 2025 method can be seen in Table 6 and Table 7.

Table 6. Example of Recapitulation of Cost Budget Plan (RAB) Contractor Method

No	Description	Nominal
I	Planner, Drawing and Administration Work	Rp 55.500.000,00
II	Preparatory Work	Rp 50.564.000,00
III	Earthwork	Rp 49.937.525,00
FLOOR 1		
IV	Pair Work	Rp 170.707.051,00
V	Reinforced Concrete Work (Practical Concrete grade K175 & Structural Concrete grade K250)	Rp 339.335.255,00
VI	Floor & Wall Finishing Work	Rp 52.079.780,00
VII	Ceiling Work	Rp 35.990.360,00
VIII	Painting Work	Rp 43.149.560,00
IX	Window and Frame Work	Rp 104.463.250,00
X	Customer Bathroom Work	Rp 15.655.470,00
FLOOR 2		
XI	Pair work	Rp 128.964.010,00
XII	Reinforced Concrete Work (Practical Concrete quality K175 & Structural Concrete quality K250)	Rp 223.889.238,00
XIII	Floor & Wall Finishing Work	Rp 52.051.980,00
XIV	Ceiling Work	Rp 36.616.650,00
XV	Painting Work	Rp 47.303.625,00
XVI	Window and Frame Work	Rp 19.295.000,00
XVII	Employee Bathroom Work	Rp 13.494.180,00
FLOOR 3 (DAK)		
XVIII	Pair Work	Rp 44.930.556,00
XIX	Reinforced Concrete Work (Practical Concrete grade K175 & Structural Concrete grade K250)	Rp 36.161.694,00
XX	Ceiling Work	Rp 1.608.160,00
XXI	Painting Work	Rp 13.406.450,00
XXII	Window and Frame Work	Rp 6.750.000,00
XXIII	Roof Work	Rp 6.466.210,00
XXIV	Sanitary and Plumbing Work	Rp 19.965.424,00
XXV	Electrical Work	Rp 87.415.750,00
XXVI	Infrastructure Work	Rp 92.850.943,00
XXVII	Generator House Work	Rp 16.656.200,00
XXVIII	Mobilization & Transportation	Rp 32.500.000,00
TOTAL		**Rp 1.797.708.320,00**
CANCELLED		**Rp 1.797.708.000,00**
PPN 11%		**Rp 197.747.880,00**
GRAND TOTAL		**Rp 1.995.455.880,00**

Tabel 7. Rekapitulasi Rencana Anggaran Biaya (RAB) Metode AHSP 2025

No	Description	Nominal
I	Planner, Drawing and Administration Work	Rp 55.500.000,00
II	Preparatory Work	Rp 123.674.580,00
III	Earthwork	Rp 55.757.571,70
FLOOR 1		
IV	Pair Work	Rp 245.072.337,11
V	Reinforced Concrete Work (Practical Concrete grade K175 & Structural Concrete grade K250)	Rp 238.430.877,21
VI	Floor & Wall Finishing Work	Rp 51.485.342,40
VII	Ceiling Work	Rp 42.259.386,00
VIII	Painting Work	Rp 77.041.498,40
IX	Window and Frame Work	Rp 107.204.755,00
X	Customer Bathroom Work	Rp 20.397.940,60
FLOOR 2		
XI	Pair work	Rp 189.408.413,00
XII	Reinforced Concrete Work (Practical Concrete quality K175 & Structural Concrete quality K250)	Rp 148.350.968,44
XIII	Floor & Wall Finishing Work	Rp 51.392.156,40
XIV	Ceiling Work	Rp 42.463.740,00
XV	Painting Work	Rp 84.705.507,90
XVI	Window and Frame Work	Rp 34.506.500,00
XVII	Employee Bathroom Work	Rp 17.127.212,40
FLOOR 3 (DAK)		
XVIII	Pair Work	Rp 60.635.174,40
XIX	Reinforced Concrete Work (Practical Concrete grade K175 & Structural Concrete grade K250)	Rp 165.142.199,33
XX	Ceiling Work	Rp 1.781.166,00
XXI	Painting Work	Rp 17.739.016,70
XXII	Window and Frame Work	Rp 6.900.000,00
XXIII	Roof Work	Rp 9.754.420,00
XXIV	Sanitary and Plumbing Work	Rp 33.010.690,40
XXV	Electrical Work	Rp 131.682.755,00
XXVI	Infrastructure Work	Rp 111.463.264,41
XXVII	Generator House Work	Rp 20.161.008,00
XXVIII	Mobilization & Transportation	Rp 32.500.000,00
TOTAL		**Rp 2.175.548.480,80**
CANCELLED		**Rp 2.175.548.000,00**
PPN 11%		**Rp 239.310.280,00**
GRAND TOTAL		**Rp 2.414.858.280,00**

The result of the recapitulation of the cost budget plan for the BRI Setu Bekasi Unit construction project using the Contractor method is Rp. 1,995,455,880.00 while the AHSP 2025 method is Rp. 2,414,858,280.00.

COMPARISON OF THE RESULTS OF THE CALCULATION OF THE COST BUDGET PLAN (RAB) BETWEEN THE CONTRACTOR METHOD AND THE AHSP 2025 METHOD

Based on the results of the cost estimation recapitulation, the total budget based on the contractor method is Rp. 1.995.455.880,00 while the total budget based on the AHSP 2025 method is Rp. 2.414.858.280,00. The difference in estimates between the two methods reached Rp. 419.402.400,00 indicating that the calculation based on the AHSP 2025 method was 21% higher than the contractor's method.

This difference can be caused by several factors, including differences in work units, analysis coefficients, and the components of wages, materials, and equipment used. The AHSP method tends to be more conservative because it refers to national standards that have been adjusted to the latest economic conditions and provides a more detailed cost structure. Meanwhile, the contractor method generally adopts a more flexible approach based on field experience. This may be influenced by the contractor's internal cost-saving strategies to win tenders or reduce implementation costs.

CONCLUSION AND SUGGESTION

Conclusion

Based on the results of the analysis and discussion that have been carried out on the comparison of the Cost Budget Plan (RAB) between the contractor method and the AHSP 2025 method on the BRI Unit Setu Bekasi Development Project, the following conclusions can be drawn:

1. Comparison of the calculation results of the contractor's cost budget plan of Rp.1.995.455.880,00 and the AHSP 2025 method of Rp. 2.414.858.280,00, a budget difference of Rp.419.402.400,00, or about 21% higher than the Contractor's method.
2. The difference in the calculation results obtained in the cost component comes from the reinforced concrete structure component and finishing work, between the AHSP 2025 method and the existing method in the contractor's method.

Suggest

Based on the results of the analysis and discussion that have been carried out, the following suggestions can be given, namely:

1. The contractor is advised to continue to prepare cost calculations based on field conditions, but must also consider AHSP references to improve accuracy, transparency, and compliance with applicable national standards.
2. This research can be the basis for further analysis of other types of work (MEP, architecture, landscape, etc.) or can be applied to projects with different scales and geographical locations to enrich comparative data on RAB preparation methods.
3. Technology Utilization It is recommended to apply project management and cost estimation software (such as Primavera, Microsoft Project, and Cost Estimator) to facilitate project monitoring, accelerate cost analysis, and minimize human error in manual calculations.

REFERENCES

[1]. Badan Pusat Statistik. 2021. "Laju Pertumbuhan Penduduk Kabupaten Bekasi (Persen),

[2]. Adinda, A. (2023). Analisis Perbandingan Biaya Dengan Metode AHSP, BOW, Dan Lapangan (Redesain Islamic Center Lampung Tengah) Doctoral dissertation, Universitas Muhammadiyah Metro).

[3]. Endom, S. T., Saleh, L. M., & Titaley, H. D. (2023). Rencana Anggaran Biaya Menggunakan Metode AHSP 2016 dan SNI 2018 pada Proyek Pembangunan Gedung Madrasah Ibtidaiyah Negeri 5 Kabupaten Maluku Tengah. Journal Agregate, 2(2), 255-261.

[4]. Iwawo, A. M., Dundu, A. K., & Pratasis, P. A. (2024). Analisis Perbandingan Rencana Anggaran Biaya Kontraktor Dengan Perhitungan Biaya Berdasarkan AHSP Permen PUPR No. 1 Tahun 2022 Pada Proyek Pembagunan Rumdis Kodim 1302 Minahasa. TEKNO, 22(88), 1089-1098.

[5]. Juansyah, Y., Oktarina, D., & Zulfiqar, M. (2017). Analisis perbandingan Rencana Anggaran Biaya bangunan menggunakan metode SNI dan BOW (Studi kasus: Rencana Anggaran Biaya bangunan gedung Kwarda Pramuka Lampung). Jurnal Rekayasa, Teknologi, dan Sains, 1(1).

[6]. Sitompul, D. F. (2023). Analisis Perbandingan Estimasi Anggaran Biaya SNI dan Kontraktor (Studi Kasus: Peningkatan Jalan Jrs Panji Dabutar-Lae Gorat, Kec. Sitinjo, Sumatera Utara) (Doctoral dissertation, Universitas Medan Area).