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ANALYSIS OF THE CALCULATION VALUE OF DOMESTIK COMPONENT LEVEL (TKDN) ON HIGH-RISE BUILDING PROJECTS

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Abstract

Domestic products can be used to increase productivity and competitiveness in international markets. The government stipulates the use of domestic products by setting the sum of the value of the domestic component level and the weight of company benefits at 40%. Until now, there has not been much use of domestic products in the construction sector. Therefore, this study considers the value of the domestic component level in high-rise building projects to strengthen Indonesia's competitiveness in the industrial sector. In this study, the calculation method and value of the domestic component level will be analyzed along with the weight of benefits of construction service companies for multi-story building construction projects. The technique used in this study is quantitative, and it processes data such as technical specifications, cost budget plans, unit price analysis of work, and finding the percentage level of domestic material components through the Ministry of Industry website. The result obtained by this study is the percentage value of the domestic component level (TKDN) in high-rise building projects is 74.53%, the percentage value of the company's benefit weight is 3%, and the total value of TKDN and BMP is 77.53%. The conclusion obtained in this study is that the high-rise building project has met the requirements in the Presidential Regulation of the Republic of Indonesia Number 12 of 2021 concerning the Procurement of Goods and Services.

Kata Kunci:
Tingkat Komponen Dalam Negeri, Bobot Manfaat Perusahaan

Abstract

Penggunaan produk dalam negeri dapat digunakan sebagai alat untuk meningkatkan produktivitas dan daya saing pasar internasional. Pemerintah menetapkan bahwa penggunaan produk dalam negeri dengan menetapkan penjumlahan nilai tingkat komponen dalam negeri dan bobot manfaat perusahaan sebesar 40%. Sampai saat ini belum banyak penggunaan produk dalam negeri pada bidang konstruksi maka dari itu pada penelitian ini memperhitungkan nilai tingkat komponen dalam negeri pada proyek gedung bertingkat untuk memperkuat daya saing Indonesia pada bidang industri. Pada penelitian ini akan dianalisa cara perhitungan dan nilai tingkat komponen dalam negeri beserta bobot manfaat perusahaan jasa konstruksi proyek pembangunan gedung bertingkat. Metode yang

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digunakan pada penelitian ini adalah metode kuantitatif dengan mengolah data-data seperti spesifikasi teknis, rencana anggaran biaya, analisa harga satuan pekerjaan dan mencari persentase tingkat komponen dalam negeri material melalui website kementerian Perindustrian. Hasil yang diperoleh penelitian ini adalah persentase nilai tingkat komponen dalam negeri (TKDN) pada proyek gedung bertingkat sebesar 75,86%, nilai persentase bobot manfaat perusahaan sebesar 3% dan total nilai TKDN dan BMP adalah 78,86%. Kesimpulan yang didapat pada penelitian ini adalah proyek gedung bertingkat sudah memenuhi persyaratan pada Peraturan Presiden RI Nomor.12 Tahun 2021 tentang Pengaadaan Barang dan Jasa.

INTRODUCTION

Data-driven *Global Competitiveness Index* (GCI), WEF, 2017, Indonesia's infrastructure competitiveness index in 2017-208 was ranked 52nd, and this lifted Indonesia's global competitiveness index, which was ranked 36th. With this data, it can be said that Indonesia is still lagging. Infrastructure development can be a top priority in increasing people's productivity and competitiveness in the International Market, as contained in the NAWA CITA program designed by the President and Presidential Candidates[1].

Using domestic products can increase people's productivity and competitiveness in the international market [2]. The use of domestic products or PDN, including goods and services, is a design and engineering produced by companies that invert and produce in Indonesia using all or part of the Indonesian workforce; the process uses raw materials, all or part of which come from within the country[3].

The use of domestic products is then calculated using the value of the domestic component level (TKDN). In Presidential Regulation No. 12 of 2021, article 66 concerning amendments to Presidential Regulation No. 16 of 2018 concerning the procurement of government goods/services stipulates that the use of domestic products with a summation value of TKDN and BMP is at least 40%.% [4]. Domestic products that must be used must have a TKDN value of at least 25%. The level of domestic components can be classified into 3, namely the level of domestic components of goods, which can be seen on the website of the Ministry of Industry, the level of domestic components of services, and the level of combined domestic components of goods and services [5]. Another component that supports the calculation of the domestic component level is the analysis of the unit price of work. Unit price analysis of work calculates the cost of materials, tools, and services that produce the unit price. [6]. The unit price of work is calculated starting from the primary unit price of materials, tools, and labor [7]. After getting the unit price of work, the total price of one job can be obtained and multiplied by the percentage of the domestic component level to get the cost of domestic components[8].

Company Benefit Weight is the value of appreciation for industrial companies that invest and produce in Indonesia. Based on the Regulation of the Minister of Industry Number 16 of 2011 concerning the provisions and procedures for calculating the domestic component level, it is explained in Article 13 that the maximum value of the company's benefit weight is 15%. The value is based on four specific factors: the empowerment of micro and small businesses or cooperatives, health maintenance, work safety and the environment, community empowerment, and after-sales service facilities[9].

Based on the facts in the BPK examination results, realizing the value of the domestic component level of state-owned

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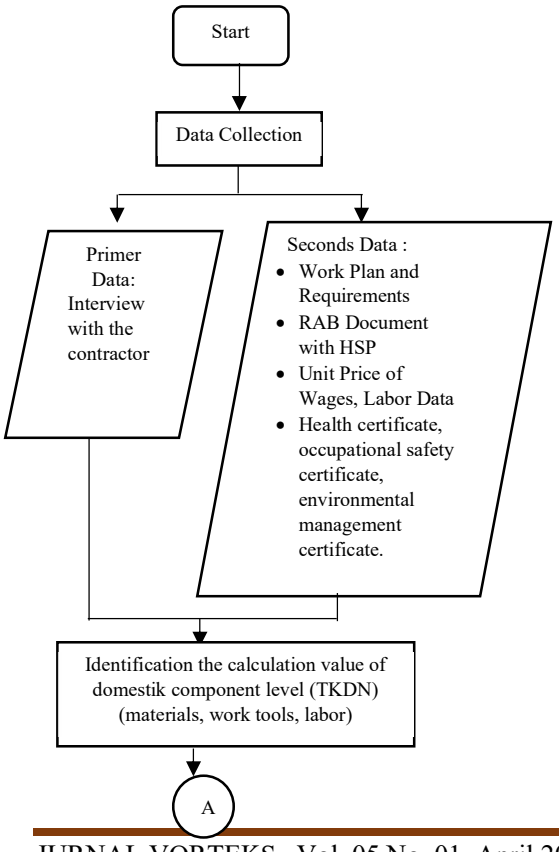
companies is still not optimal or needs to be improved. Based on this explanation, it is necessary to increase the value of TKDN in construction projects. In this study, the calculation method and value of the domestic component level will be analyzed along with the weight of benefits of construction service companies for multi-story building construction projects. The results of this study are the percentage of TKDN and BMP values of high-rise building projects and compliance with Presidential Regulation No. 12 of 2021 article 6 [9].

RESEARCH METHODS

The research method used in this study is quantitative research because this research uses data in the form of technical specifications and project cost budget plans to be analyzed. The stages of analysis are contained in the flow chart below.



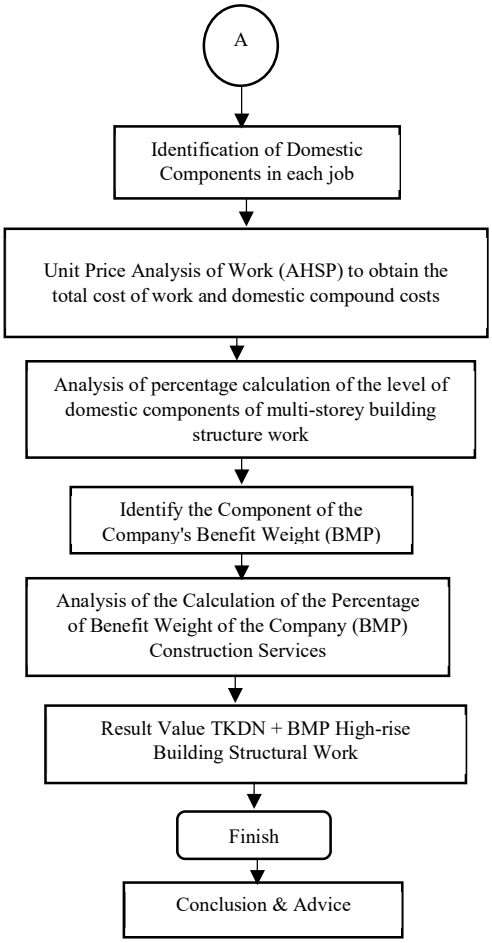


Figure 1. Research flow chart

RESULTS AND DISCUSSION

Percentage Calculation TKDN Materials

Percentage TKDN from materials obtained from the Ministry of Industry website: https://tkdn.kemenperin.go.id/. Several examples of values for TKDN Materials can be seen in Table 1.

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Table 1. Example of TKDN Value of Material

Materials	Brand	TKDN (%)
Cement PC (Packaging 40 kg)	Dynamix	91.33%
Instant Cement (Mortar)	MU	73.78%
Ready Mix Concrete Fc' = 30 Mpa	Indonesian Concrete Anugerah	87.91%
Concrete steel screw	Hanil Jaya Steel	55.77%
Plain Concrete Iron	Hanil Jaya Steel	55.77%
Spun Pile Piles	WIKA CONCRETE	71.47%
Mini Pile Piling	WIKA CONCRETE	72.08%
Iron paint	Propane	57.12%
Lumajang Couple Sands	Local	100.00%
Local Landfill	Local	100.00%
Local gravel	Local	100.00%

Table 1 above explains that some material products used for high-rise building construction projects have various TKDN values, such as PC Cement with the Dynamix brand, which has a TKDN value of 91.33%, seen on the Ministry of Industry website. Lumajang pair sand material has a TKDN value of 100% because the material comes from nature.

Percentage Calculation TKDN Labor

The percentage of TKDN of labor is obtained based on the origin of the worker's nationality as stated in the Regulation of the Minister of Industry RI No.16/M-IND/PER//2/2011[10]. An example of calculating the percentage of TKDN of labor is shown in Table 2.

Table 2. Example of Labor TKDN Value

Labor	Citizenship (WNI/WNA)	TKDN (%)
Worker	WNI	100%
Foreman	WNI	100%
Craftsman	WNI	100%
Head Handyman	WNI	100%

Table 2 explains that the TKDN value of the workforce is 100% because all workers in high-rise building construction projects are Indonesian citizens.

Percentage Calculation TKDN Work Tools

The percentage of TKDN of work tools is obtained based on the origin of the country of work equipment produced and ownership of work tools listed in the Regulation of the Minister of Industry of the Republic of Indonesia No.16/M-IND/PER//2/2011. There is an example of calculating the percentage of TKDN of work tools in Table 3

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Table 3. Example of TKDN Value of Work Tools

Work Tools	Made (DN / LN)	Owned (DN / LN)	TKDN (%)
Stemper	LN	DN	75%
Concrete Pump IHI Long Boom - Min. 3 jam	LN	DN	75%
Blender Tools	LN	DN	75%
Welding Set - 250 watt	LN	DN	75%
Excavator PC 75	LN	DN	75%
Jack Hammer Pile	LN	DN	75%

Table 3 explains that the average tool used for high-rise building construction projects has a TKDN value of 75% because it comes from or is made from abroad and operates domestically.

Calculation of Unit Price Analysis of Work

The unit price analysis of work is calculated to obtain the cost of domestic components on each work item. An example of the unit price analysis of work is shown in Table 4.

Table 4. Calculation Example of Unit Price Analysis of Work

NO	DESCRIPTION	SAT	KOEFISIEN	UNIT PRICE	SUM	TKDN%	Cost KDN (IDR)
I	**LABOR**						
	Foreman	O/H	0.00900	150,000.00	1,350.00	100.00%	1,350.00
	Head Handyman	O/H	0.00600	145,000.00	870.00	100.00%	870.00
	Craftsman	O/H	0.02000	140,000.00	2,800.00	100.00%	2,800.00
	Craftsman	O/H	0.02000	140,000.00	2,800.00	100.00%	2,800.00
	Craftsman	O/H	0.02000	140,000.00	2,800.00	100.00%	2,800.00
	Worker	O/H	0.18000	135,000.00	24,300.00	100.00%	24,300.00
II	**MATERIAL**						
	Cement	Sak	0.10000	55,000.00	5,500.00	91.33%	5,023.15
	Concrete Sand	m3	0.00600	240,240.00	1,441.44	100.00%	1,441.44
	Crushed Stone	m3	0.00900	236,314.89	2,126.83	100.00%	2,126.83
	Steel bar	Kg	3.00000	10,000.00	30,000.00	55.77%	16,731.00
	Nail Usuk	Kg	0.01000	17,000.00	170.00	55.97%	95.15
	Meranti Wood Formwork	m3	0.00200	500,000.00	1,000.00	100.00%	1,000.00
	Bendrat Wire	Kg	0.04500	19,000.00	855.00	54.97%	469.99
III	**EQUIPMENT**						
IV	**SUM (I+II+III)**				**76,013.27**		**61,807.57**
V	**PROFIT**				**3,800.66**		**3,090.38**
VI	**TOTAL (IV + V)**				**79,813.94**		**64,897.94**
VII	**TKDN**				**81.31%**		

Table 4 describes AHSP calculations on practical column work (10 x 10 cm), which has a total cost of work of IDR. 79,813.94 and domestic component costs of IDR. 64.897,94. Based on these results, it can be calculated the TKDN percentage of practical column work (10 x 10 cm) as below:

$$\% \text{ TKDN} = \frac{KDN\ fees}{Total\ Cost}\ x\ 100\%$$

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$= \frac{64.897,94}{79.813,94} \; x \; 100\%$
$= 81,31\%$

Based on the calculation of the TKDN Percentage above, the percentage of TKDN of practical column work obtained (10x10 cm) is 81,31%. Practical column work (10 x 10 cm) is included on each floor. After calculating the analysis of the unit price of work on each work item, then a recapitulation of the calculation can be carried out.

TKDN Calculation Recapitulation

A recapitulation of the calculation of the TKDN value of each work item on the structural work of a multi-story building project can be seen in Table 5.

Table 5. Recapitulation of TKDN Value Calculation

No	Description	Total Price (IDR)		KDN Cost (IDR)		% TKDN
1	EARTHWORKS	IDR	142,948,370.25	IDR	142,881,712.31	99.95%
2	FOUNDATION	IDR	1,545,353,838.40	IDR	1,158,872,324.94	74.99%
3	FLOOR Elv. -0.050	IDR	1,912,581,969.79	IDR	1,413,751,067.32	73.92%
4	FLOOR Elv. +4.450	IDR	1,760,169,147.65	IDR	1,296,595,619.38	73.66%
5	FLOOR Elv. +8.950	IDR	1,756,144,698.84	IDR	1,293,214,835.46	73.64%
6	FLOOR Elv. +13.450	IDR	1,752,185,508.01	IDR	1,290,061,939.86	73.63%
7	FLOOR Elv. +17.950	IDR	1,056,133,423.45	IDR	774,472,959.29	73.33%
8	FLOOR Elv. +21.000	IDR	39,275,250.47	IDR	29,466,867.54	75.03%
9	ROOF FRAME	IDR	1,256,426,944.26	IDR	955,994,661.27	76.09%
10	STAIRCASE STRUCTURE	IDR	130,088,070.63	IDR	101,799,244.81	78.25%
11	STRUCTURE GWT (GROUNDWATER TANK)	IDR	58,186,247.35	IDR	44,748,260.16	76.91%
12	STRUCTURE STP (SEWAGE TREATMENT PLANT)	IDR	68,544,038.87	IDR	52,317,564.28	76.33%
TOTAL		IDR	11,478,037,507.96	IDR	8,554,177,056.61	74.53%

In Table 5. Explained that the total cost of building multi-story structure work amounted to IDR 11,478,037,507.96 with domestic component costs of IDR 8,554,177,056.61 Based on these results, the percentage of TKDN of high-rise building structural work can be calculated as below:

$\% \text{ TKDN} = \frac{KDN\ fees}{Total\ Cost} \; x \; 100\%$

$= \frac{\text{IDR } 8,554,177,056.61}{\text{IDR } 11,478,037,507.96} \; x \; 100\% = 74,53\%$

Calculation of the Weight of Company Benefits

Calculate the company's benefit weight (BMP) on high-rise building construction projects by interviewing construction services. The results of the interview are in Table 6.

Table 6. BMP Value Calculation

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No	FACTORS DETERMINING THE WEIGHT OF THE ENTERPRISE	CRITERIA	WEIGHT	MAXIMUM WEIGHT LIMIT	BMP VALUE (%)
I	Empowering Micro and Small EnteIDRrises and small cooperatives through partnerships	Minimum IDR 500 Million	5%	-	-
		Every Multiple IDR 500 Million	5%		
II	Certificate ownership: occupational health, safety (SMK3/OHSAS 18000) (30%); and	None	0%	20%	3,00%
		Exist	6%		
	Environmental Management (1SO 14000) (70%)	None	0%		
		Exist	14%		
III	Community empowerment (*community development*)	Minimum IDR 250 Million	3%	-	-
		Every Multiple IDR 250 Million	3%		
IV	After-sales service facilities	Minimum investment IDR 1 Billion	5%	-	-
		Every Multiple 1 Billion	5%		
				20%	3,00%

In Table 6. Explained that in construction services, multi-story building construction projects have a company benefit weight of 3% due to the ownership of health and work safety certificates (SMK3 / OHSAS 18000) and environmental management (ISO 14000). The certificates owned are ISO 9001: 2008, OHSAS 180001: 2007, and ISO 45001: 2018.

TKDN and BMP Recapitulation

The percentage of TKDN value in high-rise building projects is 74.53%, and a BMP value of 3%. Based on these two values, the rate of TKDN and BMP values of high-rise building projects is 77.53%

CONCLUSION

Based on the results of the research obtained, the following conclusions can be drawn:

1. Percentage value of domestic component level (TKDN) in high-rise building projects amounted to 74.53%
2. The percentage of the value of the company's benefit weight (BMP) in high-rise building projects is 3%
3. The total percentage of TKDN and BMP values is 77.53%, which means that the multi-story building project has met the requirements of Presidential Regulation Number 12 of 2021 concerning the Procurement of Goods and Services.

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