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RESEARCH PAPER

What Drivers Factors for the Implementation of Sustainable Public Procurement in Indonesia?

Nia Budi Puspitasari[1,*], Anggit Kurnia Alfiati Devytasari[2], Aries Susanty[3]

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ABSTRACT
Sustainable Development Goals (SDGs) 12 promotes environmentally responsible consumption and production. One of its sub-objectives is to improve sustainable public procurement practices, in line with national policies and priorities. Sustainable Public Procurement (SPP) is a process of public organizations carrying out goods/services procurement activities that consider economic, social, and environmental aspects. This study identifies and evaluates the factors that drive the implementation of SPP in Yogyakarta Provinces, and seeks recommended solutions based on these driving factors. The respondents selected as the object of this study were 30 procurement actors in Yogyakarta Province. In this study, the driving factors for the application of SPP were divided into 6 factors with 22 subfactors. The analysis method used is the RII method. RII is a method for identifying the relative importance of causation of an event based on its likelihood and effect using the Likert Scale. The results showed that 6 of the 22 subfactors that encourage the implementation of SPP are the availability of sustainable products, sustainable goods/services procurement policies and procedures, the availability of sustainable human resources, the availability of sustainable product/service suppliers, organizational values, and the cost of sustainable products/services.

KEYWORDS: *Sustainability; Public procurement; Sustainable public procurement; Relative importance index.*

1. Introduction

The United Nations has set a global agenda for sustainable development known as the Sustainable Development Goals (SDGs). SDG's 12th aims to promote environmentally responsible consumption and production. One of its sub-objectives is to improve sustainable public procurement practices, in line with national policies and priorities [1].
This goal places a strong emphasis on actors, whether they be institutions, businesses, or members of the public, changing their behaviour to become more sustainable. Whether as a company, organization, or individual in a home, this behaviour encompasses not only the use/supply of materials/ production inputs but also the processes of manufacturing, distribution, and marketing in addition to consumption. Production materials and inputs must already be chosen in accordance with sustainable procurement guidelines before being supplied. Maintain a sustainable and effective production process while producing as little trash as possible or at a level that is safe for both the environment and people. In a similar vein, it is advised to use reusable containers, recycle and discard products, and minimize the use of non-renewable materials that will harm both the environment and people [2].
In Indonesia, carrying out a sustainable government procurement process is regulated in the Presidential Regulation of the Republic of Indonesia Number 16 of 2018 and its amendments to Presidential Regulation Number 12 of 2021 concerning Procurement of Government Goods/Services. According to Article 1 Number 50 of Presidential Regulation Number 16 of 2018, Sustainable Procurement is defined as "Procurement of Goods and Services that aims to achieve economically beneficial value benefits not only for Regional Ministries/Institutions/ Apparatus as users but also for the community, as well as significantly reducing negative impacts on the environment in the entire cycle of its use.
To meet the need for goods, services, construction, and utilities in a way that benefits not only the organization but also society and the economy at large, and significantly reduces its negative impact on the environment [3], public organizations engage in a practice known as Sustainable Public Procurement (SPP) [4]. Sustainable public procurement is often referred to as eco-friendly purchasing, environmentally preferred purchasing,

* *Corresponding author: Nia Budi Puspitasari*
niabudipuspitasari@lecturer.undip.ac.id

1. *Industrial Engineering, Diponegoro University, Semarang, Indonesia*
2. *Industrial Engineering, Diponegoro University, Semarang, Indonesia*
3. *Industrial Engineering, Diponegoro University, Semarang, Indonesia*

and socially responsible procurement [3].

The Sustainable Public Procurement Guidelines were released in 2012 by the United Nations Environment Programme (UNEP). The guidelines state that governments and organizations must balance social, economic, and environmental issues in their purchasing decisions [5]. In addition, in 2017 UNEP issued a Global Review of Sustainable Public Procurement. The need to implement sustainable public procurement for central and local governments was highlighted in the Global Review 2017 [3].

According to the Sustainable Public Procurement Implementation Guidelines, countries committed to investing their time, human resources, and funding to implement sustainable procurement will have the opportunity to contribute to national policy goals, improve environmental performance, deliver financial benefits, and develop markets for more sustainable products and services [5]. When sustainable procurement is implemented as a national policy instrument, it can support national goals such as poverty alleviation, local economic and employment stimulation, national sustainable development strategies, and technological innovation and development. In addition, the implementation of sustainable procurement can help reduce impacts on various aspects of the environment, such as climate change, water quality, to waste [3].

Sustainable procurement is not only an effective way to reduce environmental impact but can also help government organizations to reduce costs. Financial impacts were included in the procurement criteria assessed in the study by the European Commission. Six out of seven European countries surveyed demonstrated cost savings achieved by purchasing sustainable products and services [6]. By choosing more sustainable goods and services, sustainable procurement can be used to stimulate competition; create a market for the right technology; expand the market for innovative sustainable solutions; encourage early engagement and dialogue with the market; and enhance dialogue with stakeholders to drive growth in demand for locally marketed goods and by making sustainable products purchased by the public sector more readily available to individual consumers [7].

The benefits of Sustainable Public Procurement are not only limited to reducing environmental impacts but are related to social, health, economic, and political issues. In the city of Vienna, the implementation of sustainable procurement through the "Eco Buy" program can reduce 100,000 tons of CO2 in 2001 and save 44.4 thousand Euros. In the Netherlands, the implementation of sustainable procurement can reduce 3,000 tons of CO_2 and reduce public sector energy consumption by 10%. If the whole of Europe implements a policy of purchasing all IT products such as the Copenhagen City Council and the Swedish Administrative Development Agency, energy consumption in Europe can be cut by 30 terawatt-hours or the equivalent of 4 nuclear power plants. In addition, sustainable procurement can also be an opportunity to provide employment. This can be proven in Mexico, where there are 1.5 million people employed to plant and manage forests [8].

Sustainable public procurement can be used by public authorities to address environmental issues such as logging, through the purchase of legally logged wood products managed with the principles of sustainable development to reduce CO_2 emissions, through the purchase of products with low CO_2 emissions throughout their economic lifetime. Sustainable procurement can also be used as a means of controlling the use of natural resources, reducing pollution, supporting sustainable development, improving the quality of life, and concern for the quality of the environment. From an economic point of view, sustainable procurement can save costs and natural resources when considering Life Cycle Costing (LCCs). Politically, the implementation of sustainable procurement demonstrates the commitment of the public sector to improve the environment and the sustainability of production and consumption [8]. Government spending on goods and services is enormous, which is why sustainable procurement of goods and services is implemented as an organizational management tool. Indirectly and directly, nature conservation, environmental pollution, biodiversity, and climate change can be affected by the acquisition of high-value commodities and services that require large natural resources [9]. Sustainable procurement of goods and services also aims to do things like increase the use of local products or environmentally friendly domestic products; increase Micro Small Medium Enterprise (MSME) participation; and increase the profile of local and national business actors in the production of environmentally friendly goods/ services, support the implementation of research

and utilization of research goods/services; increase the participation of the creative industry in the production of environmentally friendly goods/services; and encourage economic equity, improve the quality of public health and welfare, as measured by quality, quantity, time, cost, location, and provider [8].

Based on data from BPS Indonesia government spending on goods and services represents 15%-30% of the National Gross Domestic Product (GDP). There are 14 provinces in Indonesia with a ratio of spending on goods and services above the national average in 2018, one of which is the Special Region of Yogyakarta. In addition to having a large ratio of goods and services spending, Yogyakarta Province has experienced an increase in the number of MSMEs from 2018 to 2022 and an increasing trend in projected spending on goods and services in Yogyakarta Province in the period from 2023 to 2026. In 2018 there were 259,581 and in 2022 it increased by 32%, namely there were 342,920 MSMEs in Yogyakarta Province. For spending on goods and services in Yogyakarta Province from 2023 to 2026, it projects approximately 60% of the total expenditure of Yogyakarta Province.

However, with a large ratio of goods and services spending, the value of the Gini index and the Environmental Quality Index value of Yogyakarta Province is low. The Gini index value of Yogyakarta Province in 2022 is relatively high at 0.459, which is higher than Indonesia's Gini index value of 0.384. The Gini index is an economic indicator to measure inequality or conditions of income inequality between people in a region, where the Gini index value ranges between 0 and 1. The Environmental Quality Index value of Yogyakarta Province from 2018 to 2022 is still below the good classification, which is above 70 and The Environmental Quality Index of Yogyakarta Province is below the National Environmental Quality Index. The Environmental Quality Index of Yogyakarta Province is a standard measure of environmental quality in all cities throughout Yogyakarta.

Based on the high Gini index value, the Environmental Quality Index value of Yogyakarta Province in 2018–2022 which is still below the limit the increasing number of MSMEs in 2018–2022 and the trend of funding projections for Goods and Services Spending in Yogyakarta in 2023–2026, it shows that the Yogyakarta Provincial Government has not fully implemented the Sustainable Development Goals, especially Sustainable Government Procurement of Goods and Services. In line with this, based on the results of an interview with the Head of the Yogyakarta Provincial Procurement Section, the government procurement of goods and services has not fully implemented SPP or sustainable procurement. The procurement process that has so far still prioritized the value for money factor. The procurement department of Yogyakarta Province stated that the implementation of SPP is considered very important to be fully implemented in the procurement process and should be a priority consideration. Previous research conducted by Nuaimi, Khan, & Ajmal (2020) [10] aimed to identify the important factors in the implementation of SPP in the United Arab Emirates using the AHP method. Then Jimenez, Lopez, & Escobar (2019) [11] identified the strengths, weaknesses, opportunities, and threats in the implementation of SPP. Subsequent research was conducted to identify the driving factors for the implementation of SPP in Pakistan [12]. Next, Zhang, Zhang, & Dijk (2022) [13] identified insights into SPP applied in China using methods such as interview surveys of Public Procurement Centres (PPCs), telephone interviews, and an expert workshop.

This is the basis for researchers to research the factors of implementing Sustainable Public Procurement in the Provincial Government of the Special Region of Yogyakarta. This research adopts the conceptual model framework by Mingshun Zhang, Li Zhang, Meine Pieter van Dijk [13]; Shahid Nadeem, Mohamad Hanapi bin Mohamad, and Nik Ab. Halim bin Nik Abdullah [12]; Bader Khamis Al Nuaimi, Mehmood Khan, and Mian Ajmal [10]; and Walker & Brammer [14] to evaluate the factors that encourage the implementation of SPP in Yogyakarta Provinces. In this study, the driving factors will be compiled to determine the most crucial factors in influencing the implementation of SPP in Yogyakarta Province. To compile a ranking of the driving factors for the application of SPP from the criteria of importance, a data analysis method is used by calculating the Relative Importance Index (RII). The importance of the driving factors for the application of SPP is assessed using the Likert Scale, which uses a scale of 1 to 5, where the level of the scale 1 represents the driving factor categorized as unimportant and 5 represents the very important category [15]. After knowing the most crucial driving factors, the Nominal Group

Technique (NGT) was carried out to determine recommendations for actions to be taken by the Yogyakarta Provincial Government to implement Sustainable Public Procurement. NGT is the process of finding solutions to a problem which includes the process of identification, finding solutions, and making decisions [16]. The contribution of this research can provide recommendations for organizations or government agencies based on the driving factors that influence the implementation of sustainable procurement.

2. Materials and Method

The initial step of this study is to determine the variables and indicators of SPP application that will be applied to the object of research. This research uses a literature study process by searching scientific journals about SPP that will be studied and used to help find variables and indicators that are in line. This research adopts the conceptual model framework by Mingshun Zhang, Li Zhang, Meine Pieter van Dijk [13]; Shahid Nadeem, Mohamad Hanapi bin Mohamad, and Nik Ab. Halim bin Nik Abdullah [12]; Bader Khamis Al Nuaimi, Mehmood Khan, and Mian Ajmal [10]; and Walker & Brammer [14], so that 6 factors and 22 subfactors are formed. In this study, the application of SPP is measured from 6 factors, namely cost, organization, innovation ability, stakeholders, culture, and market, and with 22 subfactors. These driving subfactors can be seen in Table 1.
After obtaining the driving factors and subfactors, they made a questionnaire that was distributed to 30 procurement actors in Yogyakarta Province. The questionnaire given by respondents was made using the Likert measurement scale, which uses a scale of 1 to 5, where the level of the scale 1 represents the driving factor categorized as unimportant and 5 represents the category as very important. The results of the questionnaire answers will be tested for validity and reliability before being processed using the Relative Importance Index (RII) method. RII determines the most influential factor in the ranking system based on the weight of the scores given by respondents after filling out the questionnaire [36]. RII values range from 0 to 1. The higher the RII value, it can be defined that the factor is a critical cause [37].

3. Result

The validity of the questionnaire can be seen from the r-count value which is the value of Corrected Item-Total Correlation, where if the r-count is > (greater) than the r-table then the data is valid.

Tab.1. Research variables

Factor	Code	Subfactor
Cost (C)	C1	Sustainable product/service costs [17]
	C2	Continuous product lifecycle costs [18]
	C3	Infrastructure costs [19, 20, 21]
Organization (O)	O1	Organizational commitment [22]
	O2	Organizational values [23]
	O3	SPP policies and procedures [24]
	O4	Sustainable HR availability [18]
	O5	SPP Training [25]
Innovation Capabilities (I)	I1	Technology adaptation [26]
	I2	Effective dissemination of SPP knowledge [23]
	I3	Knowledge and ability to produce new products/services [27]
Stakeholder (S)	S1	Government support [22]
	S2	Public/citizen support [28]
	S3	Top management support [23, 29]
Culture (CT)	CT1	Social awareness [27]
	CT2	Environmental awareness [17]
	CT3	Commitment to change [12, 19]
Market (M)	M1	Availability of sustainable product/service suppliers [30]
	M2	Supplier awareness [31]
	M3	Supplier capacity [32]
	M4	Sustainable product availability [33]
	M5	Sustainable product quality [34, 35]

The r-table value is searched based on the number of respondents (N) and the significance level [38]. For this study, the significance level was 5% and N= 30, then the r-table value was 3.61. If all question variables on the questionnaire produce an r-count value of >3.61, then the data is declared valid and can continue to perform reliability tests. The results of the validity test can be seen in Table 2.

Tab.2. Validity test result

Subfactor Code	r-calculate	result
C1	0.708	Valid
C2	0.379	Valid
C3	0.436	Valid
O1	0.475	Valid
O2	0.477	Valid
O3	0.682	Valid
O4	0.485	Valid
O5	0.621	Valid
I1	0.533	Valid
I2	0.565	Valid
I3	0.371	Valid
S1	0.424	Valid
S2	0.456	Valid
S3	0.365	Valid
CT1	0.603	Valid
CT2	0.624	Valid
CT3	0.682	Valid
M1	0.485	Valid
M2	0.662	Valid
M3	0.535	Valid
M4	0.389	Valid
M5	0.706	Valid

Based on Table 2, it can be seen that the validity test of the 22 variables in this study is valid. After all the data is valid, a reliability test can be carried out for the next step. The reliability test is a research instrument test to determine the accuracy of questionnaire answers in different periods. An instrument is said to be reliable if when used several times to measure the same object, it will produce relatively the same response for different times. A variable is said to be reliable when Croncbach's Alpha value >0.6 [38]. The results of reliability tests in this study conducted with the help of SPSS software can be seen in Table 3.

Based on the results of data analysis in Table 3, Cronbach's Alpha value of 0.880 is obtained, which shows that the measurement of the instrument can be said to be reliable and can provide consistent results when re-measuring the same object.

Tab.3. Reliability test results

Case processing summary			
		N	**%**
Cases	Valid	30	100.0
	Excluded[a]	0	0
	Total	30	100.0

a: Listwise deletion based on all variables in the procedure

Reliability statistics	
Cronbach's Alpha	**N of items**
0.880	22

After testing the validity and reliability of all variables of this study and all variables declared valid and reliable, it was continued by analyzing the data using the Relative Important Index (RII). Data that have been obtained from respondents' answers and have been converted into values 1-5 (Likert Scale), will be processed to obtain the weight and mean of each subfactor. Weight is the total sum of the index level of influence of each subfactor based on the assessment of 30 respondents. And for the mean or average of the weight is the quotient between the sum of the values of the weight of each subfactor with the number of respondents (30). Example of calculating weights and mean for subfactor C1:

Weight C1= 4+4+4+4+5+4+4+3+4+4+2+2+3+ 2+3+3+4+3+4+3+3+4+4+4+3+4+3+4+2+4=104

Mean C1= $\frac{\text{Weight C1}}{\text{number of respondents}} = \frac{104}{30} = 3{,}467$

Table 4 presents a recapitulation of the results of the calculation of weights and means of each subfactor driving the application of SPP.

The Relative Important Index (RII) value is determined after obtaining the weight and mean values of each subfactor. The driving factors for the implementation of SPP in Yogyakarta Province are ranked using RII values. The RII value is the result of the total weight divided by the product of the number of respondents (30) and the highest weight (5). The resulting range of RII values is between 0 (minimum) to 1 (maximum), with larger RII values showing more significance. Here's the equation that shows the formula for calculating the RII value:

$$RII = \frac{\sum W}{A \times N}$$

RII= Relative Importance Index

W= Weight (weight with range 1 to 5)

A= highest weight

N= number of respondents

Example of calculating the RII value for the subfactor C1:

RII C1= $\frac{\text{weight C1}}{\text{highest weight x number of respondents}} = \frac{104}{5x30} = 0.693$

From the RII value that has been calculated, the subfactors are ranked by sorting by RII value from large to small. A recapitulation of the results of the RII calculation and the ranking of each subfactor is listed in Table 5.

Tab.4. Results of calculation of weight and mean of each subfactor

Subfactor Code	Weight	Mean
C1	104	3.467
C2	92	3.067
C3	95	3.167
O1	85	2.833
O2	105	3.500
O3	111	3.700
O4	107	3.567
O5	95	3.167
I1	96	3.200
I2	96	3.200
I3	73	2.433
S1	91	3.033
S2	102	3.400
S3	71	2.367
CT1	94	3.133
CT2	102	3.400
CT3	98	3.267
M1	107	3.567
M2	98	3.267
M3	102	3.400
M4	114	3.800
M5	100	3.333

Based on the results of the calculation of the RII value in Table 5, it can be seen that there are several similarities in the RII value, namely in the subfactor with the O4 and P1 codes of 0.713; B2, P3, and S2 of 0.680; B3 and P2 of 0.653; K1 and K2 of 0.640; and C3 and O5 of 0.633; Then it is necessary to perform a confidence interval test. The confidence interval is one of the parameters to measure how accurately a sample's mean represents the value of the real population mean [15].

In this study, the number of respondents is 30 and the confidence interval is 95%, then the average distribution of the sample will be normal with the average value of the population μ with a standard deviation of σ. There is a probability (1-α) that the average n-sized sample will lie between $-z_{\alpha/2}$ and $z_{\alpha/2}$, then $P(-z_{\alpha/2} < Z < z_{\alpha/2} = 1-\alpha$, where $z = \frac{\bar{x}-\mu}{\sigma-\sqrt{n}}$).

Tab.5. Relative importance index result

Code	RII	Rank
C1	0.693	6
C2	0.613	18
C3	0.633	15
O1	0.567	20
O2	0.700	5
O3	0.740	2
O4	0.713	3
O5	0.633	15
I1	0.640	13
I2	0.640	13
I3	0.487	21
S1	0.607	19
S2	0.680	7
S3	0.473	22
CT1	0.627	17
CT2	0.680	7
CT3	0.653	11
M1	0.713	3
M2	0.653	11
M3	0.680	7
M4	0.760	1
M5	0.667	10

The results of the interval test can be seen in Figure 1.

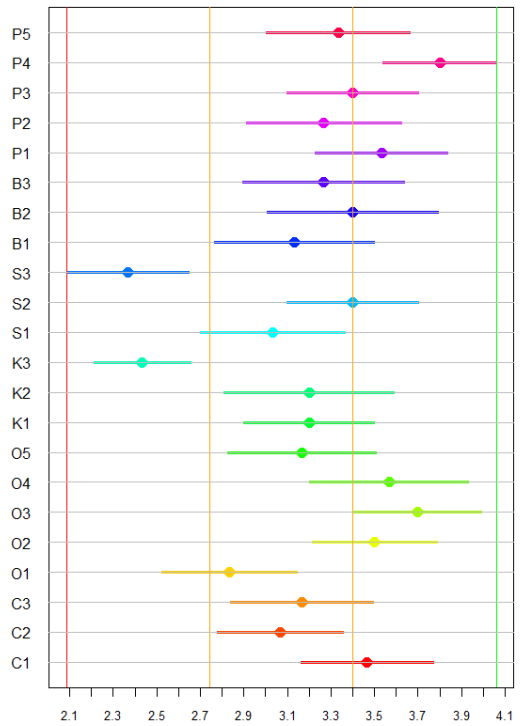

Fig.1. Confidence interval test results graph

Dividing several subfactors driving the application of SPP in the confidence interval

test requires grouping row boundaries by creating class intervals. The following Table 6 is the class interval obtained in the confidence interval test.

Tab.6. Class intervals

Class	Interval Class	Notation
1	3.402-4.061	
2	2.743-3.402	
3	2.085-2.743	

Classes that have been plotted on the results of the confidence interval test show that the known driving factors are grouped into 3 classes, where class 1 is a very significant factor in the application of SPP, class 2 means that the factors are significantly related to the application of SPP, and class 3 is not significant in the application of SPP. Table 7 shows the classification of subfactors based on their priority importance.

Table 7 shows that each subfactor's RII values are arranged from largest to smallest and fall into three categories: extremely significant, substantial, and not significant. The Yogyakarta Province's SPP implementation is influenced by six subfactors that are very high impact in the orange color, fourteen subfactors that are high impact in the blue color, and two subfactors that are medium impact in the green color.

4. Discussion

The calculation results in this study show that with a large RII value and being in the first class in the confidence interval test plotting, 6 top subfactors are considered crucial as driving factors for implementing Sustainable Public Procurement (SPP) in the Special Region of Yogyakarta. The 6 subfactors are the availability of sustainable products, policies, and procedures for the procurement of sustainable goods/services, the availability of sustainable human resources, the availability of suppliers of sustainable products/services, organizational values, and the cost of sustainable products/services with RII values of 0.760, 0.740, 0.713, 0.713, 0.700, and 0.693.

To determine what action recommendations will be taken by the Provincial Government of the Special Region of Yogyakarta to implement Sustainable Procurement of Goods and Services based on known driving factors, researchers conducted a Nominal Group Technique (NGT) with 4 experts who are experienced in the field of procurement as well as in the field of environment and forestry.

Tab.7. Ranking of factors driving SPP implementation

Priority	Subfactor	Code	Weight	Mean	RII	Rank
Very High Impact	Sustainable product availability	M4	114	3.800	0.760	1
	SPP policies and procedures	O3	111	3.700	0.740	2
	Sustainable HR availability	O4	107	3.567	0.713	3
	Availability of sustainable product/service suppliers	M1	107	3.567	0.713	3
	Organizational values	O2	105	3.500	0.700	5
	Sustainable product/service costs	C1	104	3.467	0.693	6
High Impact	Public/citizen support	S2	102	3.400	0.680	7
	Environmental awareness	CT2	102	3.400	0.680	7
	Supplier capacity	M3	102	3.400	0.680	7
	Sustainable product quality	M5	100	3.333	0.667	10
	Commitment to change	CT3	98	3.267	0.653	11
	Supplier awareness	M2	98	3.267	0.653	11
	Technology adaptation	I1	96	3.200	0.640	13
	Effective dissemination of SPP knowledge	I2	96	3.200	0.640	13
	Infrastructure costs	C3	95	3.167	0.633	15
	SPP training	O5	95	3.167	0.633	15
	Social awareness	CT1	94	3.133	0.627	17
	Continuous product lifecycle costs	C2	92	3.067	0.613	18
	Government support	S1	91	3.033	0.607	19
	Organizational commitment	O1	85	2.833	0.567	20
Medium Impact	Knowledge and ability to produce new products/services	I3	73	2.433	0.487	21
	Top management support	S3	71	2.367	0.473	22

Based on the Nominal Group Technique process that has been conducted, the researcher concluded several important points that can be implemented by the Government of the Special Region of Yogyakarta to apply Sustainable Public Procurement (SPP) or Sustainable Goods and Services Procurement (PBJ) based on the most crucial driving factors. These factors stem from policies and procedures for sustainable goods/services procurement, organizational values, availability of sustainable human resources, availability of sustainable product/service suppliers, availability of sustainable products, and costs of sustainable products/services.

Table 8 is the result of group discussions using the NGT method to determine recommendations for actions to be taken by Yogyakarta Province to implement SPP.

Based on Table 8, the recommendation for implementing SPP for the SPP policy and procedure driving subfactors is to formulate this policy, which means drafting rules, guidelines, and strategic plans to promote the implementation of sustainable PBJ in the regional government environment of YOGYAKARTA. Synchronization is necessary so that the sustainable procurement policy of the YOGYAKARTA Regional Government aligns with the national policy direction set by the central government, such as by the LKPP (Government Goods/Services Procurement Policy Agency). A pilot test is the initial step to test and refine the sustainable procurement approach before full implementation.

The suggestion for the implementation of SPP on the sub-factor that drives organizational values is to establish Norms-Standards-Procedures-Criteria.

Tab.8. Recommendations for Implementing SPP

No	Driving Factors	Driving Subfactors	Recommendations
1	Organization	SPP Policies and Procedures	Forming Yogyakarta Local Government SPP Implementation Policy
2			Synchronization or alignment of central and regional SPP policies/programs/activities
3			Implementing the SPP Piloting
4		Organizational Values	Establishing Norms-Standards-Procedures-Criteria as technical guidelines for SPP implementation within the scope of the Yogyakarta Regional Government
5			Develop online training modules for different levels of stakeholders
6			Implement periodic SPP monitoring and evaluation
7		Availability of Sustainable HR	Improve technical understanding and operationalization of SPP programs for procurement actors
8			Increase HR capacity and understanding of SPP
9			Training for procurement actors on SPP processes and methods
10	Market	Availability of Sustainable Product/ Service Suppliers	MSME certification facility for environmentally friendly product manufacturers
11			SPP workshop for providers/suppliers
12			Provide information about product/service standards to suppliers to achieve sustainability
13		Sustainable Product Availability	Consultation and advocacy for the development and improvement of environmentally friendly products
14			Increase the availability of environmentally friendly products on electronic procurement platforms (e-purchasing)
15			Create tools or methods to inform and verify sustainable product claims
16			Assessment of market readiness to provide environmentally friendly products
17	Cost	Sustainable Product/ Service Cost	Expanding the scope of implementation of the Service Goods Price Standard by also covering environmentally friendly products
18			Provide fiscal incentives to improve sustainable manufacturing processes

These guidelines are intended to provide technical guidance to ensure that the sustainable implementation of PBJ is conducted in accordance with the desired sustainability principles. The development of online training modules aims to enhance the capacity of stakeholders related to sustainable procurement. Monitoring and evaluation are conducted to ensure the implementation of sustainable procurement aligns with targets and delivers tangible impacts.

The technical understanding and operationalization of sustainable procurement for procurement actors are essential for the effective implementation of the designed policies, which is a recommendation for the implementation of SPP on the sub-factor driving the availability of sustainable HR. Competent human resources who understand the principles of sustainable procurement are the foundation for the success of the SPP program. Training for Procurement Practitioners aims to provide practical skills to procurement practitioners so they can effectively carry out the sustainable procurement process.

The recommendation for the implementation of SPP on the driving sub-factor availability of sustainable product/service suppliers is a certification facility that is designed to assist MSMEs in the production of goods/services that satisfy sustainability criteria. The workshop aims to enhance the understanding and skills of goods/services providers in supporting sustainable procurement. Providing information about sustainable product/service standards helps suppliers understand the requirements that must be met in sustainable procurement.

In an effort to assist goods/services providers, particularly MSMEs, in the development of environmentally friendly products, the recommendation for the implementation of SPP for factors influencing the availability of sustainable products consultation and advocacy is provided. The e-purchasing platform plays a crucial role in expanding access to environmentally friendly products in the government procurement process. Assessment of market readiness are designed to ensure the authenticity of sustainability claims of the products offered in procurement.

To ensure that government procurement of goods and services accommodates environmentally friendly products, recommendations for the implementation of SPP on the sub-factor influencing the cost of sustainable products/ services include adjustments to the Goods and Services Price Standards. Fiscal incentives aim to support producers, especially MSMEs, in adopting environmentally friendly manufacturing processes.

5. Conclusion and Future Works

Sustainable Public Procurement (SPP) is a process of public organizations carrying out goods/services procurement activities to achieve value for money that is beneficial not only for the organization, but also for society and the economy, and significantly reduces negative impacts on the environment. However, in Indonesia, it is still not implemented properly and comprehensively, especially in the central and regional governments.

This study found that in implementing SPP several factors can be a driver for local governments. These factors are cost, organization, innovation capabilities, stakeholders, culture, and market. Significant factors influencing the implementation of SPP are organizational, market, and cost factors with subfactors in the form of SPP policies and procedures, organizational values, availability of sustainable human resources, availability of suppliers of sustainable products/ services, availability of sustainable products, costs of sustainable products/services.

Recommendations for actions that need to be taken by the Procurement of Goods and Services of the Special Region of Yogyakarta, including forming policies for the implementation of Sustainable Public Procurement (SPP) of Yogyakarta Regional Governments, synchronization or alignment between SPP policies/programs/ activities at the central and regional levels, carrying out small-scale experiments or piloting SPP, forming Norms-Standards-Procedures-Criteria as guidelines technical implementation of SPP within the scope of Yogyakarta Local Government, developing online training modules for various levels of stakeholders, carrying out periodic monitoring and evaluation (monev) of SPP, increasing technical understanding and operationalization of SPP programs for procurement actors, increasing the capacity and understanding of human resources about SPP, training for procurement actors on SPP processes and methods, MSME certification facilities for environmentally friendly product manufacturers, SPP workshops for providers/suppliers, providing information on product/service standards to providers to achieve sustainability, consulting and

advocacy for the development and improvement of environmentally friendly products, increasing the availability of environmentally friendly products on electronic procurement platforms (e-purchasing), creating tools or methods to inform and verify sustainable product claims, assessing market readiness to provide environmentally friendly products, expanding the scope implementation of the Service Goods Price Standard by also covering environmentally friendly products, and providing fiscal incentives to improve sustainable manufacturing processes. Further research, is expected to increase the range of research objects to provide more varied and representative results on the conditions of SPP implementation problems in Indonesia. In addition, further research is expected to add other variables to complement the factors of SPP application in Indonesia.

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