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Research Paper

The Relationship of Drivers to Implementation of Sustainable Procurement in Aceh

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Abstract

Indonesia has implemented sustainable procurement, which aligns with sustainability in development implementation. Sustainable procurement includes economic, social, and environmental aspects. Even though the government has issued several related regulations, the provision of sustainable regulations for implementing construction work tenders has yet to be implemented evenly. This research was conducted to see how sustainable procurement is implemented in Aceh Province, examining the relationship between driving factors and the implementation of sustainable procurement. The research's objective is to describe the relationship between the factors driving sustainable procurement and Aceh's sustainable procurement implementation. Research data was collected through a questionnaire survey of 30 respondents consisting of selection working committee and commitment-making officer at several government agencies in Aceh. Structural Equation Modeling—Partial Least Square (SEM-PLS) is used as a method for analyzing data. The findings obtained from this research show that, from several supporting factors that have been identified from previous research, the relationship is positive and significant and has an influence of 93% on the implementation of sustainable procurement, except that knowledge of sustainable procurement has a negative relationship. The limitations of this research are limited to the procurement of government construction work in Aceh and the research respondents are work selection committee personnel and commitment making officers. The originality/value of the research is found in the study of the relationship between driving factors and the implementation of sustainable procurement, especially in Aceh.

Keywords: *Relationship, Implementation, Driving Factors, Sustainable Procurement*

INTRODUCTION

The construction industry is strongly entwined with the national economy and society, and it significantly influences global environmental issues both directly and indirectly (Vassen, 2021). The Indonesian construction industry has incorporated sustainable principles into its green building initiatives, even though legislation about this practice, particularly in the contractor procurement process, has not directly addressed it (Sukardi & Abduh, 2019). The procurement process represents an important starting point for implementing sustainability issues (Wall & Hofstadler, 2019). Encouraging sustainable development through procurement procedures and choices is the main goal of sustainable procurement (Opoku *et al.*, 2022).

The Government of the Republic of Indonesia is also making efforts to increase sustainable procurement of goods/services, as can be seen in Regulation of the President of the Republic of Indonesia Number 16 of 2018 on Government Procurement in article (5) which states that the policy for procurement of goods/services includes implementing sustainable procurement. The government's consistency can also be seen in Regulation of the President of the Republic of Indonesia Number 12 of 2021 which includes the objectives of procurement of goods/services, including increasing sustainable procurement.

Referring to the explanation above, the mention of increasing sustainable procurement in

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the goal of procurement of goods/services in the regulation can be an important basis for this study. Therefore, the problem studied in this research is the relationship between driving factors and the implementation of sustainable procurement in Aceh. The purpose of this study is to describe the relationship between driving factors and the implementation of sustainable procurement in Aceh.

LITERATURE REVIEW

Sustainable Procurement

Referring to ISO 20400 (2017) sustainable procurement is procurement that has an environmental, social, and economic impact, seeks to reduce negative impacts, and has the most positive potential for the entire life cycle. Sustainable procurement plays an important role in meeting sustainability requirements and contributing to sustainable development. Sustainable procurement is defined in Presidential Regulation of the Republic of Indonesia Number 16 of 2018 as the procurement of goods or services that aims to produce profitable economic value for the community and ministries, institutions, or regional apparatus as users, as well as significantly reducing negative impacts on the environment during its use cycle.

Johannesburg was the location of the 2002 UN World Summit on Sustainable Development, where the idea of sustainable procurement was first introduced and became a main focus (Mensah & Ameyaw, 2012). Economic aspects include costs incurred for producing goods and services over time, including economic aspects. An environmental aspect is ensuring fair working conditions that empower small businesses, communities, and local businesses and lower negative impacts on health, land, water, and natural resources as contained in the Presidential Regulation of the Republic of Indonesia Number 16 of 2018 concerning Government Procurement of Goods/Services as stated in article 68 paragraph (2).

Driving Sustainable Procurement

Referring to ISO 20400 (2017) sustainable procurement drivers are intended to encourage organizations to implement a variety of sustainable procurement strategies, depending on the type of organization and its environment. Sustainable procurement is driven by compliance with laws and regulations, technology and innovation, education and training, political support, knowledge of sustainable procurement, legal frameworks, global strategy, monitoring, market demand, government policies, reputation, and customer needs (Ogunsanya *et al.*, 2022).

RESEARCH METHODOLOGY

This research uses a quantitative method approach. The sampling technique uses nonprobability sampling, namely purposive sampling. The analysis uses descriptive analysis and SEM-PLS (Structural Equation Modeling-Partial Least Square). The research was conducted on five government agencies in Aceh, including the Aceh Regional Secretariat Goods and Services Procurement Bureau, the Aceh Department of Public Works and Spatial Planning, the Aceh Department of Water System, the Aceh Department of Transportation, and the Banda Aceh City Government Goods and Services Procurement Section. Respondents were given a questionnaire to fill out to collect primary data. The respondents in question were selection working committee personnel at the Aceh Regional Secretariat Goods and Services Procurement Bureau and the Banda Aceh City Government Goods and Services Procurement Section. Commitment-making officer at the Aceh Department of Public Works and Spatial Planning, the Aceh Department of Water Systems, and the Aceh Department of Transportation. Table 1 shows the research variables.

Table 1. Variable in This Research

No.	Factor	Code	Indicator	Sources														
				a	b	c	d	e	f	g	h	i	j	k	l	m	n	o
1.	Politic	X_1		•					•				•	•			•	
		$X_{1.1}$	Implementation of the sustainable procurement mandate		•		•								•			
		$X_{1.2}$	Political support	•					•				•	•				
		$X_{1.3}$	Lack of funding	•										•				•
2.	Knowledge of sustainable procurement	X_2		•				•		•		•	•	•		•		•
		$X_{2.1}$	Understanding of sustainable procurement	•	•		•		•				•	•				
		$X_{2.2}$	Perception	•					•				•	•				•
		$X_{2.3}$	Interest curiosity/ motivation		•			•	•			•						•
3.	Regulation	X_3		•			•	•	•	•		•	•	•			•	•
		$X_{3.1}$	Rules that regulate specifically/generally at the national level	•	•		•	•	•	•		•						•
		$X_{3.2}$	Lack of specific/inadequate regulations	•				•						•		•	•	•
		$X_{3.3}$	Commitment	•			•	•		•		•		•				
4.	Monitoring	X_4			•		•	•	•						•			
		$X_{4.1}$	e-procurement platform	•						•	•				•			
		$X_{4.2}$	System integration		•		•	•		•					•			

		$X_{4.3}$	SAP system (System, applications, and products in data processing)			•									•						
		Y		•	•			•		•		•	•			•	•				
5.	Implementation of sustainable procurement	Y_1	Legal basis for implementation					•	•	•			•			•	•				
		Y_2	Implementation system		•					•		•									
		Y_3	Human resource					•					•				•				

Sources: a. Opoku *et al.*, 2022; b. Shooshtarian *et al.*, 2022; c. Adriansyah, Ridwan & Hediyanto, 2022; d. Ershadi *et al.*, 2021a; e. Ershadi *et al.*, 2021b; f. Sönnichsen & Clement, 2020; g. Yu, Yevu & Nani, 2020; h. Singh *et al.*, 2020; i. Zaidi *et al.*, 2019; j. Montalban *et al.*, 2017; k. Dutra *et al.*, 2017; l. UNEP, 2016; m. Iles & Ryall, 2016; n. McMurray *et al.*, 2014; o. Sourani & Sohail, 2011.

The variable relationship context model consists of (X) as the independent variable, (Y) as the dependent variable which can be seen in Figure 1.

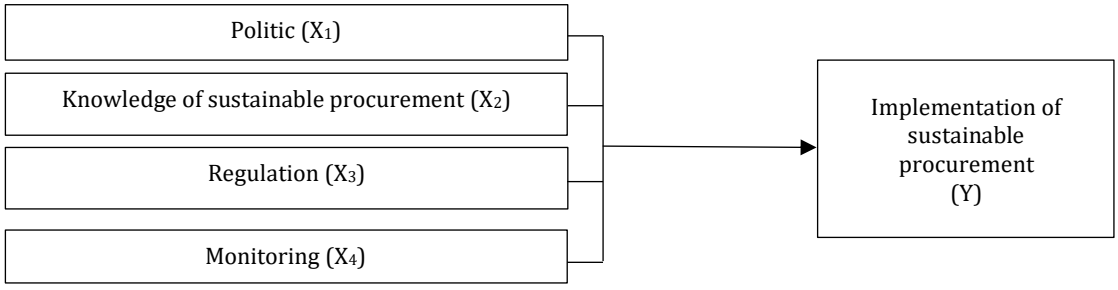

Figure 1. Conceptual Model Pattern of Relationships Between Factors

The output of SmartPLS consists of measurement model evaluation and structural model evaluation (Hair et al, 2014). Can be seen in Table 2.

Table 2. Model evaluation standards

Evaluation of the Standard Outer Model	
Convergent validity	Indicator reliability is confirmed if each correlation value is greater than 0.70. Still, loadings in the range of 0.50 to 0.60 are appropriate when creating research scales. (Ghozali, 2014).
Discriminant validity	Cross-loading measures using constructs can be used to measure models with reflective indicators. When a construct's correlation with measurement items is higher than that of other constructs, it means that the latent construct is more predictive of the measurements in that block than it is of other blocks (Ghozali, 2014).
Composite reliability	Cronbach's alpha and composite reliability are methods used to test construct reliability. If the value of both methods is > 0.60, then the construct is considered reliable (Chin, 1998).

Evaluation of the Standard Inner Model	
Path coefficients	If the estimated path coefficient value is near +1, it suggests a strong positive link; conversely, when it approaches a negative value, it suggests a tendency toward a negative relationship. Please be aware that there is nearly always statistical significance in this association (Hair *et al*, 2014).
R^2	There are three levels of goodness in the structural model: good, moderate, and weak, as indicated by the R-square values of 0.67, 0.33, and 0.19 (Chin, 1998).

FINDING AND DISCUSSION

Respondent Characteristics

Respondents consisted of selection working committee personnel and commitment-making officer seen in Table 3.

Table 3. Respondents Characteristics

Respondent Characteristics		
Position		
Selection working committee personnel	23	23 %
Commitment-making officer	7	77 %
Total	30	100%
Age		
35-44 years	17	56 %
45-54 years	11	37 %
55-60 years	2	7 %
Total	30	100%
Experience		
≤2 years	7	23%
3-5 years	9	30%
6-8 years	2	7%
>8 years	11	37%
Not answering	1	3%
Total	30	100%
Understanding related to sustainable procurement		
Understand	29	97%
Do not understand	1	1%

Respondents were dominated by the selection of working committee personnel. The majority of responders in this survey had more than 8 years of experience, which can be interpreted as having quite a lot of ability or skill, especially in their filed. 97% of respondents knew about sustainable procurement. The data that has been obtained is input into SmartPLS 3.0, and then the outer model and inner model are evaluated.

Evaluation of Outer Model

The factor loading values in the research and path coefficients can be seen in Figure 2 below.

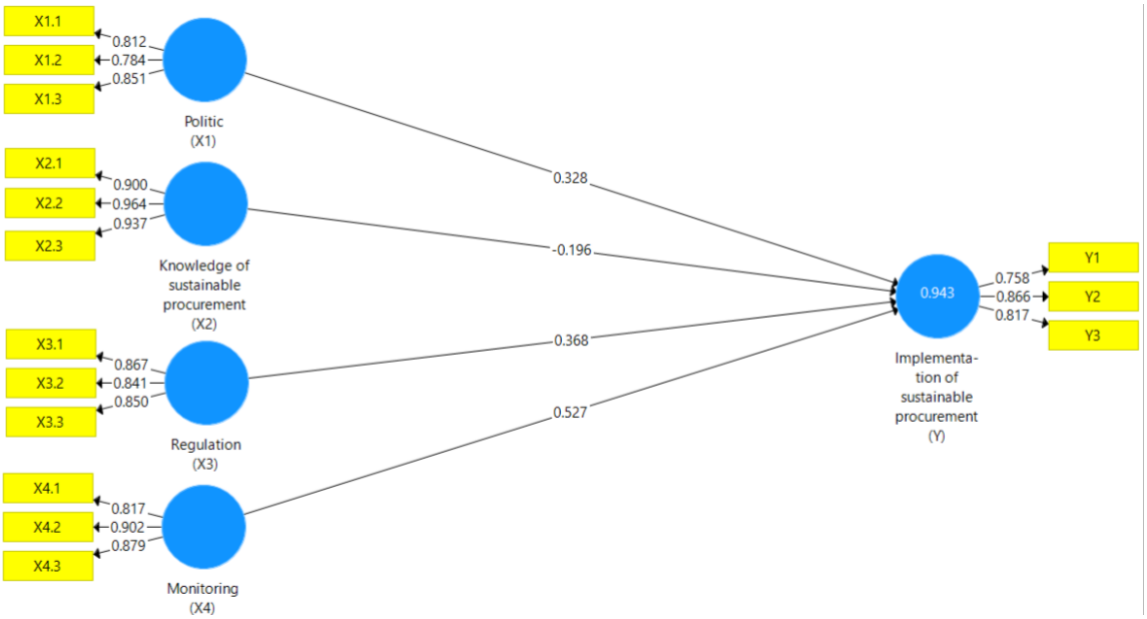

Figure 2. Model path diagram

Convergent validity is evaluated by the loading factor value seen in Figure 2, which shows all indicators are above 0.70, which can be interpreted as all indicators being valid. Discriminant validity is measured using cross-loading criteria; the level of correlation between the construct and measurement items is higher than other construct measures, so it can be concluded that all research indicators have met the discriminant validity criteria. Composite reliability with the lowest value of 0.855 and Cronbach alpha with the lowest value of 0.746 all obtained a value of > 0.70, which is considered a reliable construct.

Evaluation of Inner Model

Bootstrapping is implemented to evaluate parameters. Output Path Coefficients (Mean, STDEV, and T-Values) are used as the basis for hypothesis testing. H_0 is rejected if the t-statistic value <1.96. The subsamples used are by those recommended by the SmartPLS 3.0 software, namely 5000 subsamples. The critical t value for a two-sided test is 1.96 (significance level = 10 percent) (Hair et al, 2014). Recapitulation of t-statistic estimation results on path coefficient values in Table 3.

Table 3. *Path Coefficients* and T-Statistik

	Original sample	**T-*statistics* (|O/STDEV|)**	**P *values***
Politic → Implementation of sustainable procurement	0.328	3.103	0.002
Knowledge of sustainable procurement → Implementation of sustainable procurement	-0.196	2.526	0.012
Regulation → Implementation of sustainable procurement	0.368	3.547	0.000
Monitoring → Implementation of sustainable procurement	0.527	5.931	0.000

The R-square in implementing sustainable procurement using the path model obtained a value of 0.943 and an adjusted r-square value of 0.934. The driving factor in being able to explain the implementation of sustainable procurement is 93%, while 7% is explained by variables outside those studied, so it can be categorized as substantial (strong).

The relationship between political variables and the implementation of sustainable procurement is positively correlated, with a path coefficient value of 0.328. This shows that as politics increases, the implementation of sustainable procurement increases, especially in Aceh. The meaning of increased politics is political alignment towards the implementation of sustainable procurement. Institutions in the construction industry can take a more progressive stand and use sustainable procurement to advance sustainable development as governments step up their efforts to accommodate the necessary laws, policies, regulations, and advocacy (Opoku *et al.*, 2022). In line with the results obtained by this research, the political factor obtained a t-statistic value of 3.103 above 1.96, which is included in the significant level.

Opoku et al., (2022) stated that the lack of knowledge factor is included as an obstacle to implementing sustainable procurement dan Iles & Ryall (2016) mentioned barriers to implementation include cost, inertia, and lack of knowledge and acknowledged that a collaborative and seamless effort to eliminate inertia and correct knowledge breaches could create a more cohesive and standardized implementation approach. Based on the results of this research, the knowledge factor towards sustainable procurement has a t-statistic value of 2.526, which exceeds 1.96, which indicates that the knowledge factor is significant, and the path coefficient value between factors implementing sustainable procurement is -0.196, which has a negative relationship. The negative relationship between these two factors can be interpreted as a decreasing lack of knowledge regarding sustainable procurement, increasing the implementation of sustainable procurement.

Opoku *et al* (2022) stated that "government policy" and "regulations and legislation" are important. In line with this research, the results obtained have a positive relationship between regulations and the implementation of sustainable procurement, as indicated by the path coefficient value of 0.368, which can be interpreted as increasing regulations, increasing the implementation of sustainable procurement, and can be interpreted as increasing regulations, namely, increasing the number of regulations that regulate in detail the implementation of sustainable procurement, and t-statistic value of 3.547 > 1.96, so that it can be classified as significant.

Monitoring has a path coefficient value of 0.527, which is classified as positive in the relationship between monitoring and the implementation of sustainable procurement, which means that the higher the level of monitoring, the higher the level of implementation of sustainable procurement in Aceh, which can also be interpreted as greater control and implementation of sustainable aspects in sustainable procurement, and obtains a t-statistic value of 5.931 > 1.96, which is included in the significant level.

CONCLUSIONS AND FURTHER RESEARCH

The analysis results show a significant relationship between politics, knowledge of sustainable procurement, regulations, monitoring, and the implementation of sustainable procurement. The relationship between the factors driving the implementation of sustainable procurement and the implementation of sustainable procurement has a positive relationship, except that the knowledge factor towards sustainable procurement has a negative relationship, and the overall driving factors have a significant effect of 93% on the implementation of sustainable procurement.

Future research is hoped to expand the scope by adding variable research, which is not covered in this research, and then increasing the number of respondents and research samples. The limitations of this research are limited to the procurement of work construction, with a focus on government agencies in Aceh that are related to the procurement of work construction, and the research respondents are the working selection committee personnel and commitment-making officer. The originality/value of the research is found in the study of the relationship between

driving factors and the implementation of sustainable procurement, especially in Aceh.

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