A Study on the Influence of Various Factors in the Implementation of the E-Procurement System in Ngada Regency, East Nusa Tenggara

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Abstract: The procurement of goods and services was previously conducted manually or conventionally. Presidential Regulation No. 54 of 2010, which replaced Presidential Decree No. 80 of 2003, formally contained the objective of e-procurement in the procurement of government goods/services for the first time. Neither the committee nor the providers of goods/services readily accepted the newly implemented system. The success of the e-procurement program is highly determined by the human factor. User readiness to accept the technology is the key to successful implementation, because their response will determine whether this technology succeeds or fails. This study uses mixed methods and aims to obtain empirical evidence about the influence of human resource competence, infrastructure, and supervision factors in the implementation of the e-Procurement system, as well as to provide strategic recommendations for improving the implementation of the e-Procurement system in Ngada Regency. The research sample consisted of 39 employees of the Goods and Services Procurement Section of Ngada Regency, selected using the saturated sampling technique within the nonprobability sampling method. Data was collected through questionnaire surveys and interviews, then analyzed using Smart Partial Least Square 3.2. The results of this study revealed that human resource competence, infrastructure, and supervision have a significant influence on the implementation of the e-Procurement system in Ngada Regency. Improvement in these three factors can enhance the success of the e-Procurement system implementation. Some recommended strategies to improve the implementation of the e-Procurement system are to conduct education and training, provide internet networks and backup servers through the Department of Information and Communication, carry out socialization to involve the public in monitoring, increase evaluation transparency by adding an evaluation column on the Electronic Procurement Institution (LPSE) website, conduct routine audits, and issue regulations regarding the implementation of e-audit in the process of procuring goods/services.

Keywords: Human resource competence, infrastructure, supervision, and e-Procurement system implementation.

INTRODUCTION

The change in paradigm and the implementation of the e-procurement system encourage all related parties to adapt, changing the method of procuring goods/services from initially manual to internet-based. In the process of procuring goods/services, the Government aims for the results to provide a meaningful contribution to improving public welfare, both directly and indirectly. The procurement of goods/services in Indonesia is developing rapidly with the adoption of the E-Procurement system by LKPP. The goal is to simplify the procurement process and reduce the risk of corruption, collusion, and nepotism (KKN) in this sector. E-Procurement is a technology designed to facilitate the procurement of goods by private companies and government agencies to connect business processes between users of goods/services and providers of goods/services by interacting indirectly.

The Electronic Procurement Service (LPSE) manages the Electronic Procurement System (SPSE) for e-Procurement. New policies mandate that all government procurement of goods and services be conducted electronically, using the official websites of central and regional ministries and government agencies, replacing the manual method previously used. The implementation of e-procurement is also part of innovation in public service.

The Ngada Regency Regional Government holds construction service auctions for Government projects. This process officially began with the implementation of Presidential Regulation No. 61 of 2004 concerning Procurement, which was then updated with Presidential Regulation Number 70 of 2012, and finally updated again with Presidential Regulation Number 16 of 2018. LPSE Ngada Regency and ULP Ngada Regency facilitate e-Procurement in Ngada Regency. LPSE Ngada Regency acts as a provider of facilities and infrastructure for e-Procurement, while ULP Ngada Regency serves as the auction implementation committee that manages the submission of goods and services in the Ngada Regency government. In general, the procurement of government goods and services in Ngada Regency is still not efficient and transparent. The main problem is the high level of cases of corruption, collusion, and nepotism (KKN), which still dominates around 80 percent of the entire goods and services procurement process. This is consistent with information quoted from electronic mass media. Based on the KPK's study, the vulnerable points for irregularities in the goods and services procurement sector are in the stages of procurement planning, evaluation process, auction announcement, and supervision. There are cases of uncompetitive practices, bribery and collusion between providers and the committee during the planning and procurement stages, as well as the mindset and ethics of employees that allow them to commit joint irregularities. Some cases also stem from supervision that is only carried out internally, supervision conducted manually with minutes, and no supervision from the participants following the auction. The phenomenon of these cases illustrates that human resource competence, infrastructure, and supervision factors are resistant factors in the implementation of the e-Procurement system in Ngada Regency.

Identification at the Goods and Services Procurement Section of Ngada Regency revealed several main challenges in the implementation of the e-Procurement system. One challenge is the issue of technical infrastructure, especially concerning the e-Procurement network which cannot be directly managed by LPSE Ngada Regency because the infrastructure is centralized at LKPP Jakarta. Handling these technical issues depends on the response from the center, while LPSE Ngada Regency is only tasked with reporting the problems that occur. This constraint hinders the implementation of e-Procurement because it requires a long time to resolve. Another interesting issue is that human resource competence in the Goods and Services Procurement Section of Ngada Regency is still considered lacking in supporting the use of e-Procurement. Many procurement committee members have difficulty understanding and using the features of the e-Procurement application due to a lack of adequate training and guidance. This is a major obstacle in the implementation of e-Procurement among government officials and committees, which is important for the success of this system (Benyamin, 2020). Supervision and evaluation currently still use a manual minutes system, which makes the process less effective and transparent. Supervision is a crucial matter in the implementation of the e-Procurement policy because there has been no electronic audit (e-audit) conducted by the Ngada Regency Inspectorate. E-audit is necessary to ensure that all procurement activities run according to established standards, thereby supporting the realization of good and efficient government governance in procurement (Benyamin, 2020).

Based on the background of the phenomena in the implementation of the e-Procurement system, there are several factors that play an important role and are sources of problems. The implementation of e-Procurement will be evaluated from three main perspectives: human resource competence, infrastructure, and supervision. These three factors will then be examined based on this research.

METHODS

This research aims to empirically investigate the influence and significance level of human resource competence, infrastructure, and supervision in the implementation of the e-Procurement system in Ngada Regency. Additionally, the research will identify strategies to enhance the implementation of the e-Procurement system. Based on this description, the research problem to be investigated in this study is: How does the influence of five competence indicators, based on the Iceberg Model of Lyle and Signe Spencer (1993), affect the implementation of the e-Procurement system in Ngada Regency? After formulating the research problem, the next step is to formulate the research hypotheses and collect data. The sampling technique used is nonprobability sampling, with the selected sampling method being saturated sampling. Data collection is carried out through the distribution of questionnaires to LPSE Ngada Regency and ULP Ngada Regency.

The location or scope of this research covers parties directly involved in the electronic procurement of goods/services (e-Procurement) in Ngada Regency, namely the Electronic Procurement Service (LPSE) Ngada Regency and the Procurement Service Unit (ULP) Ngada Regency. Both are currently incorporated into the Goods and Services Procurement Section of Ngada Regency. This research is planned to be conducted for one month. The population in this study are the employees at the Electronic Procurement Service (LPSE), employees at the Procurement Service Unit (ULP) of Ngada Regency, or in the Goods and Services Procurement Section of Ngada Regency. The sample used in this study is taken from the entire population, consisting of 33 people who handle or are responsible for Goods and Services Procurement in Ngada Regency, all of whom are included as samples in the study. Data collection uses questionnaires distributed to LPSE Ngada Regency and ULP Ngada Regency. The data analysis technique in this study combines quantitative and qualitative approaches. The survey method uses the distribution of questionnaires and is complemented by interviews. Data analysis is performed using Inferential Analysis. In accordance with the formulated hypothesis, the inferential analysis in this study uses the Structural Equation Modeling (SEM) statistical test tool with the Partial Least Square (PLS) method using SmartPLS software. The software version used is Partial Least Square 3.2.8. (Abdillah and Hartono, 2015).
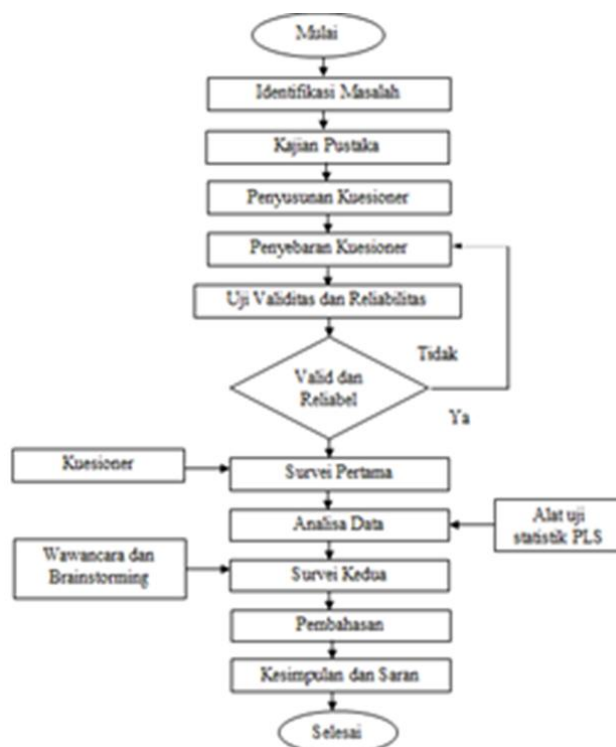

Figure 1. Research Flow Chart

RESULT AND DISCUSSION

Research Results

a. Measurement Model Evaluation (Outer Model)
   The evaluation of the measurement model or outer model is conducted to test the relationship between manifest variables or indicators used and their latent variables. The measurement model or outer model is assessed by testing convergent validity, discriminant validity, and composite reliability (Ghozali and Latan, 2015).
   a) Average Variance Extracted (AVE) The PLS output results for Average Variance Extracted (AVE) are presented in Table 1.

Table 1. Average Variance Extracted (AVE)

Average Variance Extracted (AVE)	
Implementation of the e-Procurement system	0.943
Infrastructure	0.934
Competence	0.942
Supervision	0.899

b) *Discriminant validity*
   The assessment of discriminant validity is done by comparing the square root of the Average Variance Extracted (√AVE) for each variable with the correlation between the variable and other variables in the model. The model has sufficient discriminant validity if the square root of AVE for each variable is greater than the correlation between the variable and other variables in the model.

Tabel 2 *Discriminant validity*

	Implementation of the **e-Procurement** system	Infrastruktur	Competence	Supervision
Implementation of the **e-Procurement** system	0.939			
Infrastruktur	0.946	0.956		
Human Resource Competence	0.937	0.938	0.971	
Supervision	0.902	0.871	0.842	0.944

c) *Composite Reliability*
   The reliability testing of variables is measured by two criteria: composite reliability and Cronbach's alpha of the indicator block that measures the variable. A variable is declared reliable if the value of both composite reliability and Cronbach's alpha is above 0.70.

Tabel 3 *Composite Reliability*

	Cronbach's Alpha	rho_A	Composite Reliability	Average Variance Extracted (AVE)
Implementation of the e-Procurement system	0.956	0.975	0.971	0.889
Infrastructure	0.943	0.967	0.956	0.934
Competence	0.978	0.955	0.946	0.956
Supervision	0.957	0.957	0.968	0.897

b. Structural Model Evaluation (Inner Model)

The evaluation of the structural model or inner model is evaluated using bootstrapping calculation. The inner model testing includes goodness of fit (R2), Predictive relevance, and hypothesis testing of direct influence using p-values and t-statistics.

a) *Goodness of Fit*

The structural model in this study has one endogenous variable, namely e-Procurement system implementation (Y1).

Tabel 4 *R-square*

	R Square	R Square Adjusted
Implementation of the e-Procurement system	0.934	0.928

b) *Predictive relevance* (Q)

Inner model testing is performed by examining the Q-square value, which is a goodness-of-fit test. A Q-square value greater than 0 (zero) indicates that the model has predictive relevance, while a Q-square value less than 0 (zero) indicates that the model lacks predictive relevance. However, if the calculation results show a Q-square value greater than 0 (zero), then the model can be said to have relevant predictive value. The Q-square calculation is performed using the following formula:

$Q2 = 1 - [(1-R12)]$

So the following results are obtained:

$Q2 = 1 - [(1-R12)]$

$Q2 = 1 - [(1-0,934)]$

$Q2 = 1 - [(0,066)]$

$Q2 = 0,934$

Based on the calculation above, the Q-square value obtained is 0.934, which is more than 0 and close to 1, so it can be concluded that the model has a predictive relevance value or the model can be said to have a relevant predictive value.

c. Hypothesis Testing

Hypothesis testing for direct influence is performed using p-values and t-statistics.

Table 5 Results of Direct Influence Testing

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (|O/STDEV|)	P Values
Infrastructure -> Implementation	0.375	0.335	0.164	2.072	0.035
Competence -> Implementation	0.356	0.345	0.173	1.987	0.047
Supervision -> Implementation	0.273	0.295	0.125	2.168	0.033

Discussion

The statistical analysis results show that human resource competence plays an important role in the implementation of the e-Procurement system , indicating that higher employee competence leads to more successful implementation. Infrastructure also influences the implementation of the e-Procurement system. Better and more complete infrastructure enhances the execution of the system , ensuring the smooth running of the procurement process and allowing the committee to conduct auctions effectively. Furthermore, supervision has a significant influence on the implementation of the

e-Procurement system. More effective supervision in the Goods and Services Procurement Section leads to better system application, and consistent and effective supervision can increase the success of the implementation.

CONCLUSION

Based on the results of the research and discussion, it can be concluded that human resource competence, infrastructure, and supervision have a positive and significant influence on the implementation of the e-Procurement system in Ngada Regency, NTT. Improvements in these three aspects will effectively enhance the success and efficiency of the e-Procurement system in the Goods and Services Procurement Section of Ngada Regency. To improve the implementation of e-Procurement in Ngada Regency, the recommended strategy is to provide input and suggestions to the LKPP central office to accelerate the resolution of technical problems and the improvement of supporting infrastructure, such as performing server backup through the Department of Information and Communication. This strategy aims to ensure that the infrastructure supporting e-Procurement can operate well and efficiently in managing the electronic procurement of goods and services.

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