

THE ENGINEERING DESIGN OF DECISION MAKING TOWARD THE STIPULATION OF EVALUATION METHODS IN THE BIDDING OF GOVERNMENT'S GOODS AND SERVICE PROCUREMENT IN THE REGENCY OF EAST LOMBOK

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ABSTRACT

In the evaluation of goods procurement applying knockout system, those offer which met administration, technic and the lowest cost will win the bid. Such system influenced dominantly toward the works quality as it offered the lowest price among other bidder. Meanwhile, the bidding evaluation applying grading system provides wider discretion for the committee to determine technical elements, grades of each element, also the score of each bidding contestants in each evaluated element. Vulnerability occurs in this stage, particularly related to the foundation of grade or scores granting, which consist of three vulnerable points, i.e. determination of rated elements, the value of each element and the score of contestant in each element. Aim of this research is to analyze characteristic differences between knockout and grading system (review list and passing grade) in a bidding evaluation in order to determine winning bidder of goods/ services procurement in the regency of East Lombok and to determine most dominant factor influencing the appointment of the method. The research location is in the regency of East Lombok of West Nusa Tenggara province. To find out most dominant factor in the appointment of an appropriate bidding evaluation method, an approach under Analytic Hierarchy Process assistant is applied. The analysis reported that the most dominant criteria is evaluation result (17.2%), accuracy in choosing the service provider (15.5%), and contestant selection (15.1%). According to valuation result criteria, 85.5 % of the respondent selected bidding evaluation method applying scoring system and 14.5% selected knockout system. According to accuracy of service provider criteria, 87% selected grading system, 13% selected knockout system. Meanwhile, according contestant selection criteria, an amount of 79.5% respondent selected grading system and 20.5% selected knockout system. According to above percentage, it may conclude that in the regency of East Lombok, application of scoring evaluation method is more proper to be used instead of the knockout system.

Keywords: AHP, Bidding Evaluation, Knockout System, Scoring System.

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1. INTRODUCTION

Construction service plays important role in national development. Therefore, procurement of goods/ services by the government which financed by the State Income and Expenses Budget/ Local Income and Expenses Budget (APBN/APBD) is expected to be implemented effective and efficiently under the principles of fair competition, transparency and fair and equal treatment for each involving parties.

One of the backgrounds of this article is the absence of fair competition, inefficient procurement, bureaucratic and kinked procedure. Every basic principles barely realized (transparent, efficient, fair competition/ discriminative, accountable). Occurrences of conflict between agents in the implementation stages as well as the tough future free market challenge contributes to above situation.

Evaluation of bidding document according to Perpres (The Regulation of the President) Number 54 of 2010 concerning bidding evaluation, there are 3 (three) evaluation method namely bidding evaluation applying knockout system, bidding evaluation applying grade system (review list and passing grade) and bidding evaluation applying economic age. Under knockout procurement evaluation system, only those who met administration, technical and the lowest price will be appointed as the winner. Such system influenced dominantly toward works quality due to the lowest offering among other bidder. Meanwhile, bidding evaluation applying scoring system provides wider discretion for the committee to determine technical elements, grades of each element as well as the score of procurement contestants toward each element. Vulnerability occurs in this stage concerning score granting which consist of three vulnerable points i.e. appointment scoring elements, grades of each element and the score of the contestants toward each element.

Above problems becomes serious consideration for stakeholders to decide which evaluation method is most application-appropriate in the goods and services procurement process particularly in the regency of East Lombok. Therefore, to solve the problem requires a technical approach to decide the most appropriate alternative evaluation method by applying Analysis Hierarchy Process (AHP). Thus, the procurement process may implemented transparently, accountable and in accordance with good governance principle as well as produced a qualified working result. This research started in January 2018 taking place in East Lombok regency.

2. LITERATURE REVIEW

2.1. Procurement of Goods and Services

According to basic concept and procedures of goods/services procurement stated that the procurement of goods/services started since the market existed, once people start selling or purchasing goods. Market is a place where bargaining process occurs between buyer or user and seller. Further process is selling purchasing transaction. Once the price is dealing between parties, next process is bargaining and direct selling-purchasing process without involving any payment and receiving document (Wibowo, 2002).

Procurement is a task which implemented based on procurement document. To achieve the agreement, several points that potentially inhibiting works implementation are usually noted in

the procurement bidding explanation minutes (aanwijzing). The position of procurement within infrastructure project as illustrated in Figure 1.

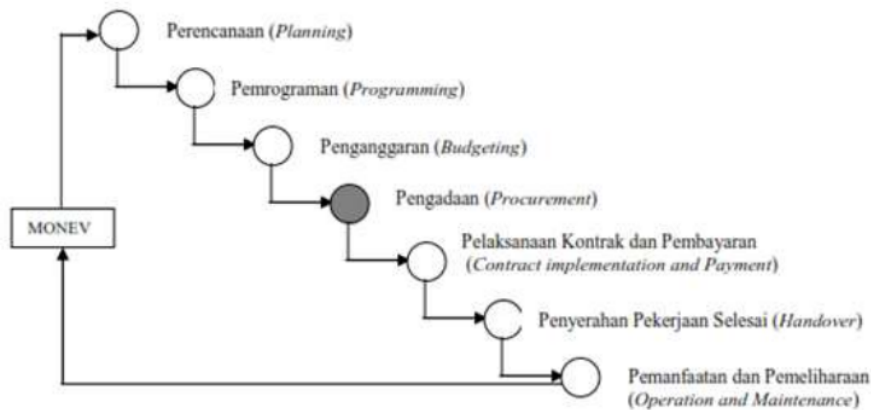


Figure 1 Procurement of Goods and Services in the development project (Anonymous, 2005)

According to PERPRES No.70/2012, definition of goods/services procurement is an activity to gain goods and services by ministry/ institution/ local institution working force/ other institution which process started with the requirement planning until accomplishment of whole process to generate goods and services. Anonymous, (2012)

2.2. Knock Out System

PERPRES No.54/2010 provides the definition of knockout system which is a grading of bidding evaluation by checking and comparing bidding document toward accomplishment of bidding condition as stated in goods/services provider selection document. Evaluation process sequence started with administration condition grading, technical condition and price reasonableness. Goods/ services provider who did not pass the grading of each stage will be knocked out. According to PERPRES No.70/2012 concerning second amendment of PERPRES Number 54/2010 concerning procurement of goods/services by the government declared that bidding evaluation applying knockout system may conducted on almost every provider selection with process sequence starting from administration evaluation, technical evaluation and price evaluation, Anonymous, (2010)

2.3. Grade System

According to PERPRES No.54/2010, the grade system (review list and passing grade) is an evaluation of bidding grade by granting particular amount of number toward each rated element based on appointed criteria and score in the provider of goods/ services selection document. Further, the score of every bidding contestant will be compared to find out the highest.

2.4. Multi Analysis Criteria (MAC) Concept

MAC approach in the analysis of decision making was developed as a solution to overcome the issue complexity faced by decision maker to determine a policy that contain multiple consideration factors and involving multiple parties to be accommodated. AMK technic generally applied numeric analysis toward a performance matrix through two stages as follows:

- Scoring: the amount of preference toward an alternative (choice) in certain criteria. Higher score of an alternative showed higher preference on that alternative;

- Grading: granting certain appointed grade for each criteria that expressing relative assessment among criteria.

To construct relative grade among criteria, requires survey toward stakeholders or involved actors and those who concerned on the implementation of procurement process. The survey conducted to generate pairwise matrix comparison based on respondent perception in each proposed planning criteria. Interview can be translated into visualized pairwise matrix form to be an inter criteria relative grading.

2.5. Analytical Hierarchy Process (AHP)

Analytical Hierarchy Process (AHP) method was developed by Thomas L.Saaty in the early 1970. AHP method is a device to determine a choice among various tough alternatives. Therefore, this method works based on input combination of various considerations of the decision makers that rely on information about the decision proponent. This meant to determine a priority measurement set to evaluate various alternatives which will be taken as a final decision.

AHP rely on a structured and logic process, so that the appointment and priority arrangement will be conducted under a structured and logic procedure too. Such activity often conducted by representative experts who work with various alternatives requires priority arrangement (Bougeois, 2005)

3. METHODS

This research applied quantitative method. Such method applied to implement the hierarchy ranked and calculate the grade of each criteria and alternative. Data gathering technique of this research is applying two method, that are by gathering primary and secondary data which directly related with research objectives. Samples collection is using purposive sampling. Sugiyono (2008) stated that purposive sampling is a sample collection based on certain considerations.

Respondent of this research are those who related with goods/services procurement process. The respondent detail are budget user, commitment maker officer, committee of government's goods/services procurement and service provider who involve in project bidding process within last two years in the office of general contractor of the East Lombok Regency.

Analysis of interest level in each criteria conducted by applying Analytic Hierarchy Process method in order to determine the grades. The conclusion of research implementation process started with determining consideration factor in bidding evaluation. Next process is to arrange a questionnaire do collect expert perception data concerning comparison and inter indicator interest level so that the grades of each indicator are measureable by applying AHP procedure. The generated indicator and indicator grade is a criteria that should be consider in the appointment of bidding evaluation method to be used in the scoring of construction service procurement to find out a qualified service provider and generate construction result that met owner's expectation as well as able to provide justice and transparency in the selection of service provider in terms of government's goods and services procurement in East Lombok Regency.

Data processing in this research is applying AHPcalc 2017 version, in order to determine grades of each criteria. Whereas to determine alternative grades based on dominant criteria under the assistant of AHP expert choice 2012 version

4. ANALYSIS AND DISCUSSION

4.1. Hierarchy Analysis of Evaluation Methods in Knockout System and Scoring System

Analysis on hierarchy process meant to find out dominant factors influencing evaluation process in procurement of goods/services in study location. Measurement device called the AHP (Analytical Hierarchy Process). The model presented in hierarchy form as shown in Figure 2 where goal is occupying the highest level. This model formulated “goal” as the appointment of bidding evaluation method in goods and services procurement process in East Lombok Regency. The appointment of bidding evaluation method conducted by considering related factors in the auction whether using knockout or scoring system. Based on empirical experience, there are 8 criteria influencing grading characteristic both in knockout and scoring system.

Based on brainstorming discussion with experts, a factors (criteria) hierarchy can be arranged to be consider in determining bidding evaluation method within the procurement of goods and services as illustrated in Figure 2 below.

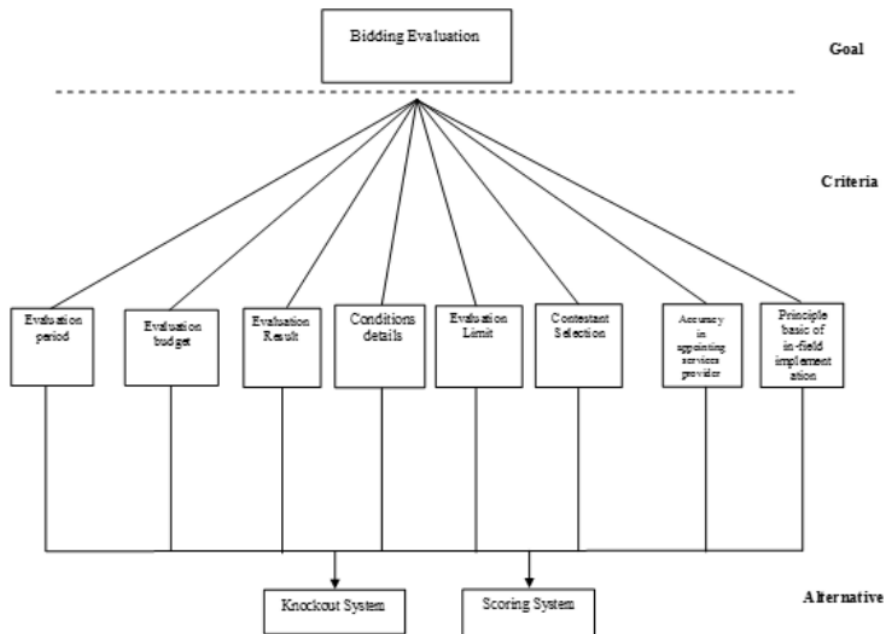


Figure 2 Hierarchy structure of the appointment of bidding evaluation method

4.2 Pairwise Comparison

Pairwise Comparison refers to the comparison made by decision maker toward two different alternatives using varieties scale from the equally important until the extremely more important. The grading is numerical using grading number formulated by Saaty (1994). Respondents' respond toward each criteria composed in inter-criteria comparison matrix as described in Table 1 below.

Table 1 Matrix of inter-criteria comparison

Matrix	Eight criteria							
	1	2	3	4	5	6	7	8
1	-	1.096	0.219	0.349	0.299	0.239	0.236	0.392
2	0.912	-	0.188	0.537	0.324	0.190	0.221	0.334
3	4.566	5.307	-	2.392	1.706	1.311	1.663	1.948
4	2.859	1.863	0.418	-	0.908	0.464	0.632	0.823
5	3.335	3.088	0.586	1.101	-	0.468	0.601	0.933
6	4.183	5.256	0.763	2.158	2.135	-	0.701	3.406
7	4.234	4.522	0.601	1.582	1.663	1.427	-	1.884
8	2.551	2.996	0.513	1.215	1.072	0.294	0.531	-

Notes:

1 = Evaluation period	5 = Evaluation Limit
2 = Evaluation budget	6 = Contestant Selection
3 = Evaluation Result	7 = Accuracy in appointing services provider
4 = Condition details	8 = Principle basic of in-field implementation

4.3 Synthesis of Priority

Synthesis of priority refers to determination of choice priority on compared criterias through pairwise comparison. Based on analysis using AHPcalc version of 2017, the weight of each criteria are as shown Table 2 below.

Table 2 Analysis result of inter criteria comparison using AHPcalc 2017 version method

No.	Criteria	Weights (%)	Rank
1.	Evaluation period	4.1	7
2.	Evaluation budget	3.9	8
3.	Evaluation Result	22.2	1
4.	Condition details	9.5	6
5.	Evaluation Limit	11.1	4
6.	Contestant Selection	20.6	2
7.	Accuracy in appointing services provider	18.3	3
8.	Principle basic of in-field implementation	10.2	5

AHP analysis resulting three most dominant weights and ranks of each criteria, namely: evaluation result (22.2%), contestant selection (20.6%), accuracy in appointing services provider (18.3%). Therefore, it can be concluded that most dominant factor in determining selected evaluation method are three highest factors namely: evaluation result followed by specific factor in selecting service provider and contestant selection. Those three criteria will be appointed as indicator or criteria in determining alternative bidding evaluation method that is grading method with scoring or knockout system.

4.4. Analysis result of alternative comparison using AHP expert choice 2011 version

Analysis result using AHP Expert choice 2011 version method the generated based on specific grade as shown in screen of software. Result of the analysis concluded in Table 3 as follow

Tabel 3 Result of assesment analysis of alternative comparison

No.	Criteria	Alternative	
		Scoring system (%)	Knockout system (%)
1	Evaluation result	74.2	25.8
2	Accuracy in appointing service provider	66.1	33.9
3	Contestant selection	71.1	28.9

Based on Table 3 above it can be showed that the evaluation result criteria resulting the amount of 74.2% respondent choose bidding evaluation method with grading system is more appropriate to be use in the process of government's goods and services procurement in the regency of East Lombok compared with knockout system which resulting the choosing amount of 25.8%. Meanwhile, for accuracy of appointing service provider criteria resulting 66.1% respondent choose scoring system and 33.9% choose knockout system. For contestant criteria 71.1% respondent choose scoring system and the amount of 28.9% choose knockout system.

5. CONCLUSION

Based on the analysis applying AHP method, it can be concluded that the implementation of bidding evaluation method toward government's goods and services procurement in East Lombok regency using grading method with scoring system. The bidding evaluation process conducted by the committee of goods and service procurement resulting that the stipulation bidding winner including it passing grade is a necessary in the process of government's goods and services procurement

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