



The Effect Of Criteria For Selection Of Construction Service Provider On Construction Performance In Banggai District

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ABSTRACT

The purpose of this study was to analyze the correlation of factors related to the selection criteria for construction service providers on construction performance in Banggai Regency, and to determine the criteria factors that had the most influence on construction performance in Banggai Regency. This type of research is explanatory research or an explanation of the position of the variables studied and the relationship between one variable and another, the sampling technique in this study is purposive sampling with a total sample of 70 people. Meanwhile, the data analysis was conducted through validity test, reliability test, descriptive analysis and multiple regression analysis. The results showed that the selection criteria for construction service providers such as company attribute factors, project specifications, guarantees, and technical evaluations had an effect or had a positive correlation on project performance in Banggai Regency, Central Sulawesi. Simultaneously, the existence of these four variables can have a significant influence on project performance with a percentage of effect of 98.92%, while the remaining 1.18% is influenced by other factors. In addition, the results of the analysis also show that the project specification variable or factor has the highest influence compared to other factors, with a Beta (β) value of 0.411.

Key words: election criteria, Construction Services, Project Performance.

1. INTRODUCTION

In a construction project, good and directed management is needed because a project has limitations so that the final goal of a project can be achieved. The necessary project management includes three things known as the three project constraints (*triple constraint*), namely cost , time , and *quality* . These three boundaries influence each other in a project and have a very important role in project implementation [1]. [2]

The success of project performance is the main target Good *owner* as well as for construction service companies. The project is said to be successful is a reflection of the results of the company's performance. A project is said to be successful if the project can be completed at a competitive cost. able to be completed on time even faster than the scheduled time, and with the achievement of quality [1] [3] [4]

One factor important and very strategic For minimize a number of problem project construction in the District proud as outlined on is accuracy in determine criteria evaluation in the supplier selection process services which[5] [6] [7], among other things, are determined by the qualifications and evaluation of bids from prospective providers who will take part in the tender for the project, because choosing an inappropriate provider will cause a lot of rework *and* disassembly (*reject*) which will increase the probability of project delays (*overruns time*), cost *overruns*[8] [9] , quality that does not meet specifications, work accidents, disputes, can even cause enormous losses for the project owner [10]

In the process of completing this project there are very important things from start to finish which are the responsibility of both the owner, consultant and implementing provider, so an appropriate method is chosen, namely a management system to solve problems that occur in the field, a method or a process or framework, involving the guidance or directing of a group of people towards a clear goal or purpose, among other things eliminating the tendency to carry out all matters themselves. [2] [11] [12]

A construction project is a series of activities that are carried out only once and are generally short-term. In this series of activities, there is a process that processes project resources into an activity result in the form of a building. The process that occurs in a series of activities certainly involves related parties, either directly or indirectly. The relationship between the parties involved in a project is divided into functional

relationships and work relationships. With so many parties involved in construction projects, the potential for conflict is very large so that it can be said that construction projects contain quite high conflicts [7] [13] [14]

Tender is a series of bidding activities that aim to select, obtain, determine and show which company is most appropriate and appropriate to work on a work package [2] The definition of a contract is something related to the activity of carrying out work or ordering another party to carry out or do part or all of the work in accordance with a written agreement that has been made. [8] [9]

Provider prequalification is a provider screening process carried out by building owners to assess the competence of prospective providers [10] [15]. This process is essential for providers and owners as it can help owners to eliminate the incompetence, financial ineligibility and inexperience of providers; and at the same time as an external audit for the provider of its capabilities [10] [16] [17] recommend 5 strategies in prequalification, namely dimensional *weighting* , *two - step prequalification* , *dimension-wide strategy* , *prequalification formulas* , and *subjective judgment* .Crovider selection namely organization, finance, management resources, past experience, and past performance of the provider. So far, selection of providers through a process of prequalification, solicitation of proposals, evaluation of proposals, and final selection can help owners to find providers with competitive offers based on provider experience, financial status, and organizational depth of providers [10] [18] [19]

There are many researchers and practitioners who use a variety of methods to select providers, including considering financial stability, past performance, experience, and the suitability of key personnel [12] [20]. This consideration complements Hatush and Skitmore's recommendations in Chandra [14] [21] which refers to financial factors, technical capabilities, management capabilities, occupational health and safety. Similar research was conducted [15] [22] [23] by dividing into 5 categories of provider selection, namely the attributes of the provider company (company reputation, post-business attitude, quality, occupational health and safety); past performance (expertise of provider while working on past projects); financial capability (short term liabilities, long term liabilities, commitments); potential performance of the provider (resource feasibility and experience in similar projects); and Project specifications (engineering and management skills). There is a significant difference in the importance of provider selection criteria between public and private projects [16] [24]

The PERT (*Program Evaluation and Review Technique*) approach to evaluate providers so that they match the owner's goals as measured by time, cost and quality criteria. The capability of prospective providers, among others, is assessed by technical ability and management ability which will produce a work method. Thus the work method is a reflection of the evaluation of the bid price of prospective providers. [14] [25].

Cite price and non-price criteria as criteria for choosing a provider. Price criteria based on the lowest price, price spread, and average price. Non-price criteria, among others, are determined by project delivery time, aesthetic value, project performance (technical functions and solutions), engineering planning, service, technical support, and environmental impact. The non-price criterion is used as a transparent award from the building owner to the provider. [26]

Project performance is how the project works by comparing the actual work results with the estimated working methods in the work contract agreed upon by the *owner* and implementing provider. That besides target cost , quality , and time so There is a number of target must be specific achieved something project . Whereas Sanvido *et al.* [18]stated project said success if fulfil four factors , including projects walk in accordance schedule , expenses more small than planned , problems occur in project small , and got advantage . [17] [27]

Successful project is project that has results Far more Good from usual estimate observed from side cost , schedule , quality , safety and satisfaction the parties involved [19] [28]describes successful project is completed project in accordance with expected , where project has take into account all condition project , have source enough power For fulfil need in a manner appropriate time .Definition success project is more results than expected or conditions that are considered normal in related matters with cost , time and quality , safety as well as another satisfaction that comes with it . Recognized success project obtained on the completed project below specified budget , have productivity more construction fine , have use source Power more human well , and performance more safety Good compared to with average or normal project. [18] [28] [29]

2. METHODOLOGY

There are various statistical tests that can be done with utilize the SPSS program, as for the one used in research This are :

2.1.Validity Test

The definition of validity according is "The degree of certainty between the data that occurs in the research object and the power that can be reported by research. Thus valid data is data [30] "that does not differ" between the data reported by the researcher and the data that actually occurs in the object of research. [30]. validity test is used to measure the legitimacy, or whether or not a questionnaire is valid. A questionnaire is said to be valid if the questions on the questionnaire are able to reveal something that will be measured by the questionnaire. [31] .

The testing technique that is often used by researchers to test validity is using Bivariate Pearson correlation. This analysis is done by correlating each item's score with the total score. The total score is the sum of all items. Question items that are significantly correlated with the total score indicate that these items are able to provide support in uncovering what you want to reveal à Valid. If $r_{count} \geq r_{table}$ then the instrument or

question items have a significant correlation with the total score declared valid. The Pearson Bivariate Correlation Formula is shown in equation 2.1:

$$r_{xy} = \frac{N\Sigma_{xy} - (\Sigma x)(\Sigma y)}{\sqrt{(N\Sigma_x^2 - (\Sigma x)^2)(N\Sigma_y^2 - (\Sigma y)^2)}} \quad (1)$$

Information :

N = The amount of data x and y

Σ_{xy} = Multiplication Result of the Total Number of Variables x and Variables y

Σ_x = Total Amount of Variable X

Σ_y = Total Amount of Variable Y

Σ_x^2 = Square of the Total Number of Variables X

Σ_y^2 = Square of the Total Number of Y Variables

y = Value of variable y

x = Value of variable x

r_{xy} = Correlation coefficient between x and y variables.

2.2. Reliability Test

The reliability test according [33] [34]"is carried out to find out how far the measurement results remain consistent if measurements are taken twice or more for the same symptoms using the same measuring device. High and low reliability, empirically indicated by a number called the value of the reliability coefficient. High reliability is indicated by an rxx value close to 1. In general, reliability is considered satisfactory if ≥ 0.600 . Instrument reliability testing uses the *Alpha Cronbach formula* because this research instrument is in the form of a questionnaire and a multilevel scale. The Alpha Cronbach formula is shown in equation 2.2 following .

$$r_{11} = \left(\frac{n}{n-1}\right) \left(1 - \frac{\Sigma \sigma_t^2}{\sigma_t^2}\right) \quad (2)$$

Description :

r_{11} = Reliability sought.

n = Number of question items tested.

$\Sigma \sigma_t^2$ = Total variance score of each item

σ_t^2 = total variance.

2.3. Analysis Descriptive

Statistics descriptive is statistics used _ For analyze data with method describe or describe the data that has been collected as exists without mean make valid conclusion _ For general or generalization . In statistics descriptive among others is presentation of data through tables , graphs , pie charts , pictograms , calculations of mode , median , mean (measurement tendency central), calculation decile , percentile , calculation data dissemination through average and standard calculations deviation , calculation percentage [30] [31] [32] , reveals that descriptive analysis is a data processing process

designed to summarize or describe all the properties of data without trying to act further on the data itself. [33]

2.4. Coefficient Test determination Double

Coefficient test determination double used For determine proportion or percentage of total variation in variable bound which is explained by the variable No bound , in together . r^2 describe size suitability that is the extent of the regression sample match data. Formula coefficient determination double are :

$$r^2 = \frac{n(a\Sigma Y + b_1\Sigma X_1Y + b_2\Sigma X_2Y + b_3\Sigma X_3Y) - (\Sigma Y)^2}{n\Sigma Y^2 - (\Sigma Y)^2}$$

Description : l

r^2 = coefficient determination double

a, b₁, .. , b_n = coefficients equality regression

Y = variable bound (productivity work)

X₁,, X₇ = variable free (influencing factors) _

N = amount of data (sample)

Size r^2 called with *coefficient of determination* (coefficient determination), coefficient this is also used For measure how strong linear correlation . Clear that $0 \leq r^2 \leq 1$ because $-1 \leq r^2 \leq 1$ [33] [34]

Data collection

The questionnaires distributed in this study were as many as 70 questionnaires, this corresponds to the number of subjects in this study consisting of 1 person from PPK, 40 people from the Public Works and Spatial Planning Office of Banggai Regency, and 29 representatives from a number of Construction Service Provider Companies that handle the construction of a number of road construction projects in Banggai Regency . The questionnaires that the researchers distributed directly to the respondents and the respondents filled out the questionnaires that had been given by the researchers without the process of filling out the questionnaires which took a long time, so that there was no risk of not returning the questionnaires to the researchers. Therefore, the following will describe some of the general characteristics of respondents according to age, sex and recent education.

3. RESULTS AND DISCUSSION

The performance of a construction project is how the project works by comparing the real work results with the estimated work methods in the work contract agreed upon by the *owner* and the implementing contractor. Project performance can be measured from several indicators, namely cost performance, quality, time, satisfaction, and work safety by planning carefully, thoroughly and integrated all allocations of human resources, equipment, materials and costs according to needs [20] [28] [29] put forward an example where it could happen that in reports an activity in the project took place ahead of schedule as expected. However, it turned out that the costs

incurred exceeded the budget, even the quality was not according to plan, and contained many problems related to occupational health and safety which of course could harm all stakeholders .

Project performance in the Banggai Regency area is measured based on factors of cost, quality/quality, time, stakeholder satisfaction , and matters related to K3L (Occupational Health, Safety and Environmental Impact). Based on the results of the research analyzed using the descriptive method, it shows that from a cost perspective the performance of construction projects in Banggai Regency has been going well (Table 4.8), in which the completion of the project is in accordance with the predetermined costs, but from the aspect of quality it is included in the moderate category, in which project completion is considered not fully in accordance with the established quality.

In addition to cost and quality, project completion in the area is able to meet a predetermined timeframe, whereby projects in the area are able to be completed according to the planned schedule. So far, the company determines the time needed based on estimates availability source Power supporters continuity project the .

In this study, researchers tested the results of the respondents' answers as many as 70 respondents were involved, with a confidence interval of 95% or level of significance (α) = 0.05, so that an r table value of 0.235 was obtained. (see attachment 3 columns level significance 5%/0.05 to the 70th line) . To find out the results of the validity test of each statement in this research questionnaire can be seen in the following table:

Table 1: Validity test v attribute variable company (X₁) , Specification project (X₂) , and guarantee (X₃) , and evaluation technical (X₄)

Variable	No. Statement Items	r Count	r Table	Information
Attribute company (X ₁)	X1.1	0.386	0.235	Valid
	X1.2	0.297	0.235	Valid
	X1.3	0.386	0.235	Valid
	X1.4	0.374	0.235	Valid
	X1.5	0.431	0.235	Valid
	X1.6	0.351	0.235	Valid
	X1.7	0.271	0.235	Valid
	X1.8	0.282	0.235	Valid
Specification project (X ₂)	X2.1	0.810	0.235	Valid
	X2.2	0.876	0.235	Valid
	X2.3	0.687	0.235	Valid
Guarantee (X ₃)	X3.1	0.610	0.235	Valid
	X3.2	0.659	0.235	Valid
	X3.3	0.633	0.235	Valid
	X3.4	0.634	0.235	Valid
Evaluation technical (X ₄)	X4.1	0.606	0.235	Valid
	X4.2	0.665	0.235	Valid
	X4.3	0.609	0.235	Valid
	X4.4	0.754	0.235	Valid

Source : Results of Questionnaire Data Processing



Figure 1: Validity test v attribute variable company (X₁) , Specification project (X₂) , and guarantee (X₃) , and evaluation technical (X₄)

Based on validity test results to details statement variable attribute company (X₁) , specification project (X₂) , guarantee (X₃) , evaluation technical (X₄) above , is known that all statement valid because _ own mark r count greater than the value of r table , every grain statements on variables the still used in study furthermore related attribute company , specification projects , warranties , and e valuations technical . Furthermore, from the results of the validity test on the statement items of the project performance variable (Y) in this study, can be seen in the following table:

Table 2:. Validity Test project performance variable (Y)

No. Statement Items	r Count	r Table	Information
Y1	0.481	0.235	Valid
Y2	0.618	0.235	Valid
Y3	0.527	0.235	Valid
Y4	0.452	0.235	Valid
Y5	0.448	0.235	Valid

Source : Results of Questionnaire Data Processing Through

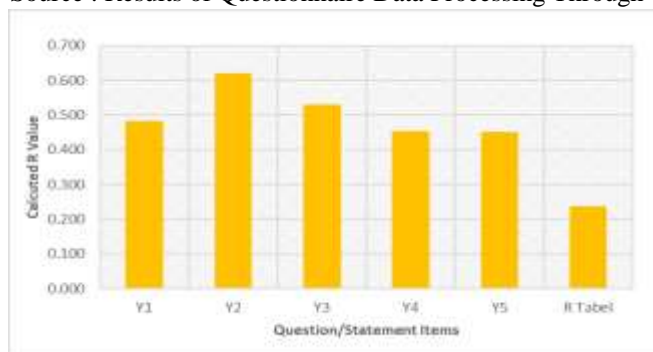


Figure 2: Validity Test project performance variable (Y)

Based on the results of the validity test on the statement items of the project performance variable variable (Y), it is known that all statements are declared valid because they have a value of r count greater than r table, so that each statement item on this variable is still used in subsequent research to measure project performance

3.1. Reliability Test

Reliability is a tool for measuring a questionnaire which is an indicator of a variable or construct. A questionnaire is said to be reliable or reliable if one's answers to statements are consistent or stable from time to time [33]. Each measuring device should have the ability to provide consistent measurement results. A reliable instrument is an instrument which, if tried repeatedly on the same group, will produce the same data with the assumption that there is no psychological change in the respondent.

With the *Alpha Cronbach method*, the measured coefficient will vary between 0 and 1. A coefficient value of less than 0.6 indicates that the reliability of internal consistency is not reliable [30]. The complete results of the reliability test in this study can be seen in the table following this :

Table 3: Reliability Test Results

No	Variable	Cronbach Alpha (a)	Required Cronbach's Alpha	Ket.
1	Attribute company (X ₁)	0.695	>0.60	Reliable
2	Project specifications (X ₂)	0.824	> 0.6 0	Reliable
3	Guarantee (X ₃)	0.741	> 0.6 0	Reliable
4	Technical evaluation variables (X ₄)	0.757	> 0.6 0	Reliable
5	Project performance (Y)	0.663	>0.60	Reliable

Source : Results of Questionnaire Data Processing

Based on summary reliability test results as summarized in table above, it is known that mark *Cronbach Alpha* on each variable value more big from 0.6 0. those results can concluded that whole instrument study can stated reliable / reliable and can used For analysis next . It means I'm e sioner This own consistent results _ If done measurement in time and model or different design . _

3.2.Results of Data Analysis

Multiple Linear Regression Results

Multiple Regression) was used . Regression analysis is basically a study of the dependence of the dependent (bound) variable on one or more independent (independent) variables, with the aim of estimating and predicting population means or the values of the dependent variable based on known values of the independent variables. So, multiple linear regression analysis is used to analyze the effect of the independent variables consisting of: attributes company (X₁) , Specification project (X₂) , guarantee (X₃) , and evaluation technical (X₄) on performance project (Y) as the dependent variable. The regression results from the processed primary data can be seen in the following table:

Table 4: Multiple regression test results

Model	Unstandardized Coefficients		Standardized Coefficients	Q	Sig.
	B	std. Error			
1 (Constant)	1,372	0.783		1,752	0.085
Attribute company	0.194	0.057	0.193	3,405	0.001
Specification project	0.411	0.068	0.409	6018	0.000
Guarantee	0.207	0.057	0.201	3,613	0.001
Evaluation technical	0.213	0.056	0.203	3,789	0.000

a. Dependent Variable: Project performance

Source: Results of Questionnaire Data Processing

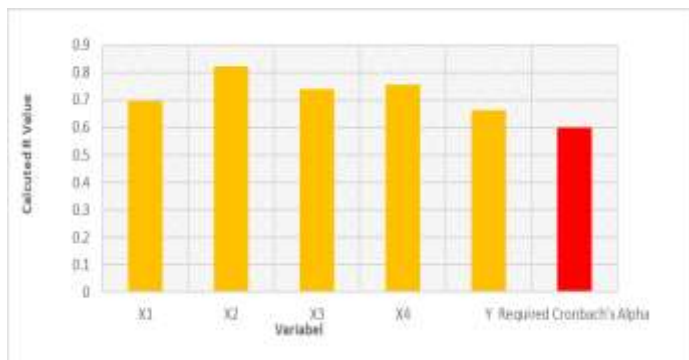


Figure 3: Reliability Test Results

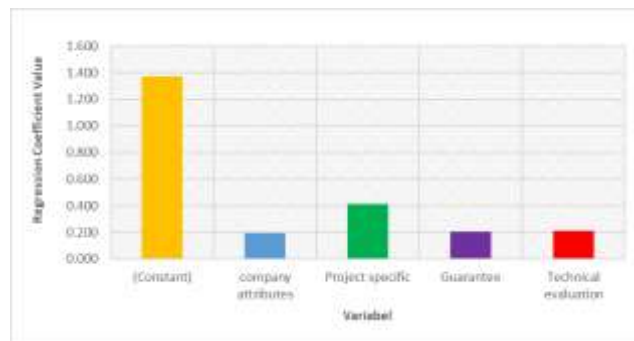


Figure 4: Coefficient value regression

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \varepsilon$$

$$Y = 1.372 + 0.194 + 0.411 + 0.207 + 0.213$$

of form the description above , shows that variable independently analyzed _ i.e. attribute variables company (X_1), Specification project (X_2), guarantee (X_3), and evaluation technical (X_4) on performance project (Y). More he explained explanation form equality the can seen following this :

1. Constant as big 1372 , which shows that mark constant worth positive . It means If score variable attribute company , specification project , assurance , and evaluation technical considered No There is or The same with zero , then the project performance has a value of 1.372.
2. Coefficient company attribute variable regression of 0.194, which shows that coefficient variable attribute company worth positive . It means if the company's attribute variable increased by 1 unit , then the performance variable project experience increase that is of 0.194. this result show exists connection positive between factor attribute company with performance project in the District Proud , which if attribute company capable run with Good so performance project construction in the District proud will give good results too .
3. Coefficient regression variable s specification of the project is 0.411, which means that coefficient variable s specification of the project worth positive . It means if the variable s is project specifications increased by 1 unit , then the performance variable project experience increase that is of 0.411. Naturally results analysis This show exists connection positive between project specification factors with performance project in the District Proud , so if s project specifications Good so performance project construction in the District proud will give good results too .
4. Coefficient collateral variable regression of 0.207, which means that coefficient variable guarantee worth positive . It means if the guarantee variable increased by 1 unit , then the performance variable project experience increase that is of 0.207. Naturally results analysis This show exists connection positive between factor guarantee with performance project in the District Proud , then If factor guarantee capable run with well , then performance project construction in the District proud will give good results too
5. Coefficient evaluation variable regression technical of 0.213, which means that coefficient variable evaluation technical worth positive . It means if the evaluation variable technical increased by 1 unit , then the performance variable project experience increase that is of 0.213. Naturally results analysis This show exists connection positive between factor evaluation technical with performance project in the District Proud , then with thereby If evaluation technical walk Good so performance project construction in the District proud will give good results too .

Then from the results of the descriptive analysis it also shows that there are no construction claims from the service user (*Owner*) and sub-providers, this is indicated by the absence of a reduction in the value of the contract and acceleration of the

time for completion of work by *the owner* , because the service provider company is able to carry out its role properly , by maximizing its performance which is manifested by the implementation of work according to the contract. Then another aspect is performance related to occupational health, safety and environmental impacts that have been carried out properly, this is evidenced by the minimal number of work accidents and the environmental impact of project work in the region.

Of course, the achievement of the project performance above cannot be separated from the various factors that influence it, and the most crucial thing is the accuracy of *the owner* in deciding or determining the construction service provider who will handle the project, based on several aspects as criteria in determining the contractor who will handle the project. starting from company attributes, project specifics, guarantees, and technical evaluations. Application of the factors of contractor selection criteria the very instrumental important in influencing project success. The application of selection criteria will make a very large contribution to the successful achievement of project performance optimal.

4. CONCLUSION

The results of this study prove that the criteria for selecting construction service providers such as company attribute factors, project specifications , guarantees, and technical evaluation have an effect or have a positive correlation to project performance in Banggai Regency, Central Sulawesi, this can be seen from the value of the regression coefficient (β) on the value constant and each variable is positive, of course the results of this analysis indicate that simultaneously the presence of these four variables can have a significant influence on project performance with a percentage of 98.92%, while the remaining 1.18% is influenced by other factors. Besides that too, results analysis also shows that variable specification project own highest influence _ with mark Betas (β) of 0.411.

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