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Performance Analysis of Road and Bridge Planning Consultants in Highway Work in Banjarbakula

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ABSTRACT. The results of planning often find errors in road handling methods and volume inaccuracies between planning and field conditions. This study aims to analyze the performance of planning consultants on indicators of planning documents, indicators of planning performance, and indicators of understanding of planning references. To determine the level of performance satisfaction used CSI method. As for knowing the performance that must be improved or less satisfactory, the IPA method is used.

From the research results obtained based on the CSI method, Planning Document Indicators got 61.51% (Quite Satisfied), Planning Performance Indicators got 70.01% (Satisfied), and Indicators of Understanding of Planning References got 62.63% (Quite Satisfied). This study succeeded in identifying five factors that affect the performance of the planning consultant and need to be improved, namely 1) Conformity between the drawing documents, RKS, and Engineer Estimate, 2) The suitability of the type of personnel costs with project needs, 3) The suitability of the types of non-personnel costs with project needs, 4) Accuracy of data collection, and 5) The suitability of the method of calculating personnel costs with planning guidelines.

The first strategy of the consultant is to commit to using competent personnel according to the qualifications listed. The second strategy of the consultant is to review the planned site carefully. Moreover, the last strategy is for consultants to work more optimally and effectively in construction projects.

Keywords: Planning consultant, CSI, IPA, Performance

1. INTRODUCTION

The level of regional socio-economic development is largely determined by the level of accessibility. The road network as the main means of socio-political economic development of a region has a vital role as a transportation infrastructure. The performance of the road network has a very important role and function and is greatly influenced by its conditions. The better the condition of the road network, the better the accessibility for socio-political economic growth in the region.

Increased socio-political economic growth in the area, especially in South Kalimantan Province, will also be followed by an increasing number of vehicles passing through the area, therefore it is necessary to increase transportation facilities and infrastructure. Improving road sections in areas that are considered vital to achieving the target needs to be carried out

with the aim of increasing existing accessibility so that traffic links between regions become better and easier. The longer the time and service life of the road, the condition of the road will decrease in quality. The quality of the road will experience a decrease in both the level of service and the condition of the structure. The increasing volume of traffic will cause a decrease in service caused by a decrease in road capacity, so that road maintenance activities are needed.

In connection with the performance of consultants, there are several studies that have been conducted. In Astrawan's research (2021), examined the performance analysis of supervisory consultants on road and bridge projects in North Sulawesi. In Subiyanto's research (2018) conducted research on the analysis of the influence of performance factors on supervisory consultants at the Surabaya VIII National Road Implementation Center. In the research Astrawan et al (2021) conducted research on the Performance Assessment of Building Planning Consultants using the Analytical Hierarchy Process method with the results of the influence of planning factors.

Through this research, it is hoped that the satisfaction level of the PUPR Service Office of the South Kalimantan Provincial Government in the Highways field can be identified with the Performance of Road and Bridge Planning Consultants. In addition, the research will also obtain strategies for improving the performance of road and bridge planning consultants in planning work at the PUPR Office of Banjarmasin City, Banjarbaru City, Kab. Banjar, Kab. Barito Kuala, Kab. Land of the Sea (BANJARBAKULA), especially in the field of Highways.

2. RESEARCH METHOD

Preliminary Data Collection

Primary data is a source of data obtained directly from original sources or from first parties, primary data is collected to answer some of the problem formulations to achieve the objectives of the research. Primary data are opinions (interviews) of people, observations, questionnaires, and others. The method used to collect data in this study are:

1. Questionnaire
   Collecting data by providing written questions and answered by respondents, the answers obtained are in the form of qualitative data then converted into quantitative using a Likert scale.
2. Interview
   Interviews will be conducted with the Head of the South Kalimantan Province PUPR Section, Planning Consultants, PPK, PPTK and technical staff who are experienced in planning roads and bridges within the BANJARBAKULA PUPR Office.

Secondary Data Collection

Secondary data is a source of data obtained indirectly through intermediaries, secondary data in the form of evidence, notes, reports, files. Secondary data in this study were obtained from the PUPR Office of Banjarmasin City, Banjarbaru City, Kab. Banjar, Kab. Barito Kuala, Kab. Tanah Laut (BANJARBAKULA) for the Highways Sector in the form of planning document data from several plans that have been implemented, which are still in the planning process and data from planning consultants who are in the planning process.

Target Respondents

The target respondents consist of PPK, PPTK and technical staff who are experienced in planning roads and bridges within the PUPR Office of Banjarmasin City, Banjarbaru City, Kab. Banjar, Kab. Barito Kuala, Kab. Land of the Sea (BANJARBAKULA). Questionnaire survey distributed to respondents with a total of 30 questionnaires.

Test Data Variables

1. Validity Test

An instrument that will be used in research must be able to measure or reveal data from the variables studied. This can be seen by using a validity test to find out whether an instrument is valid or not. Measuring tool in the form of selected questions submitted in the form of a questionnaire. A questionnaire is said to be valid if the questions in the questionnaire can reveal something that is measured by the questionnaire. In the validity measurement test there are two kinds: First, correlating between scores of question items (items) with total items. Second, correlating between each item indicator score with the total score of the construct. The significance level used is 0.05, the product moment will be used to test the validity.

2. Reliability Test

Reliability talks about the problem of accuracy (accuracy) of measuring instruments. This accuracy can be assessed by statistical analysis to find out the measurement error or measurement error.

Satisfaction Level Analysis

The results of the recapitulation of respondents' answers to the questionnaire will be processed to obtain the level of satisfaction of the decision makers, how satisfied they are with the results of the performance planning of service providers (consultants). The method used is the CSI method in the form of an analysis of the satisfaction level of the planning consultant's performance.

Importance Performance Analysis (IPA)

The use of the Importance Performance Analysis method to find out in measuring the level of performance satisfaction against performance expectations that enter the quadrants on the map. From the IPA map, dominant factors will be obtained which will be processed to develop strategies for implementing improvements in the performance of service providers (consultants) who are in quadrant A then from the dominant factors will be broken again using them to develop improvement strategies.

Preparation of Improvement Strategy

The results of the respondents' answers to the questionnaire will be processed to obtain the level of satisfaction of the decision makers, how satisfied they are with the results of the performance planning of service providers (consultants). From the level of satisfaction earlier, it will be broken again using IPA to get dominant factors which will be processed to develop strategies for implementing performance improvements for service providers (consultants).

In the process resulting from the IPA method, it will be checked again based on the results of field observations. Are the results of the IPA directly proportional to the results of observations or just the opposite. If the level of performance of the planning consultant based on the results of IPA and observations is known, then strategic steps for improving the performance of the consultant can be developed. So from the results of the

analysis above, a strategy was developed to improve consultant performance which would be validated by interviewing experts.

3. RESULTS AND DISCUSSION

Questionnaire Results

This questionnaire survey consists of 25 statements which are divided into 3 parts. The first part, is the part about the quality of planning documents which consists of 7 statements. The second part, is the planning time aspect which consists of 12 statements. The third part, is the planning cost aspect which consists of 6 statements. All of these aspects are used to evaluate the performance and expectations of the planning consultant.

Validity Test Results

The results of the 2-way Product Moment Validation Test between research instruments on all document indicators, performance indicators, and indicators of understanding of planning references so that they are easily understood and summarized into a simple form can be seen in Table 3.1

Table 3.1 Correlation Coefficient Validity Test Results

Item	Variable	Validity			Explanation
		r count		r table	
		Peformance	Expectation	5%	
X1	Planning Document	0,683	0,974	0,413	**Valid**
X2		0,760	0,974		
X3	Planning Performance	0,760	0,905		
X4		0,760	0,974		
X5		0,806	0,974		
X7		1,000	0,818		
X8		0,630	0,563		
X9		0,644	0,598		
X10		0,630	0,797		
X11		0,438	0,582		
X12		0,463	0,797		
X13		0,463	0,434		
X14		0,463	0,464		
X15		0,438	0,565		
X16		0,626	0,528		
X17		0,634	0,779		

X18		0,463	0,582		
X19		0,614	0,575		
X20	Understanding Reference Planning	0,796	0,406	0,413	**Valid**
X21		0,796	0,697		
X22		0,838	0,898		
X23		0,450	0,697		
X24		0,838	0,898		
X25		0,838	0,898		

It was concluded that all research instruments used in this study were valid. This is because the rcount value of all statement items shows more than the rtable value, which is above 0.413. This means that further analysis of all the data used in this study can be carried out.

Reliability Test Results (Reliability Test)

Testing reliability as a measuring tool in this study was carried out with an internal consistency approach using the Alpha Cronbach formula. The reason for using the Alpha Cronbach formula is that the results are more accurate and can approach the actual results. In order to simplify calculations, computational calculations using the SPSS program will be used. The results of the intended reliability test are as shown in Table 3.2

Table 3.2 Reliability Testing Results Using Cronbach Alpha

No	Variable	Reliability			Explanation
		Peformance	Expectation	*A Value*	
1	Document Indicator	0.875	0.949		*Reliable*
2	Performance Indicator	0.775	0.842	0,600	*Reliable*
3	Indicator of Understanding of Planning Reference	0.848	0.837		*Reliable*

The results obtained on the reliability coefficient obtained are greater than the value of α (0.6), so that the level of measurement error is smaller, then the reliability of the measuring instrument can be concluded that all data used in this study is reliable (reliable). It is said to be reliable or reliable because the Cronbach alpha value for each variable analyzed is greater than 0.60. That is, the analysis in this study further can be done.

Analysis of Customer Satisfaction Index (CSI)

Analysis of the Customer Satisfaction Index (CSI) for research instruments that had previously been given to respondents through a questionnaire. Based on the previous explanation, there are 3 variables that are the focus of this study. These three variables are 1) Planning Document Indicators, 2) Planning Performance Indicators and 3) Understanding

Indicators of Planning References, will be measured using the parameter value of the customer satisfaction index (CSI) to get the value of the satisfaction level of interests based on their performance.

Table 3.3 Calculation of the Satisfaction Index (CSI) for all variables

No	Variable	CSI value (%)
1	Planning Document Indicator	61,72
2	Planning Document Indicator	70,39
3	Indicators of Understanding of Planning Reference	62,63

Based on the CSI analysis on the performance of the planning consultant, namely the Indicators of Planning Documents, and the Indicators of Understanding of the Planning Reference, all indicate that the level of satisfaction of consumers/users of the planning consultant's services is in the criteria of being quite satisfied and the Planning Performance Indicators are in the criteria of being satisfied. That is, consumers are quite satisfied to be satisfied with the performance of planning consultants in South Kalimantan in all aspects studied.

If seen based on Table III.3 above, the value of the customer satisfaction index (CSI) on the performance of the planning consultant on the results/output of project planning in South Kalimantan can be described as follows:

1. Planning Document Indicator, the Planning Document Indicator has a CSI value of 61.73%, which means that consumers say they are "Quite Satisfied" with the planning consultant's performance. Although consumers generally stated "quite satisfied", it should be remembered that there were still 38.27% of other consumers who expressed their dissatisfaction with the performance of this planning consultant. It can be interpreted that this was customer dissatisfaction.
2. Planning Performance Indicator with a CSI value of 70.39%. In the aspect of planning time, respondents stated that they were satisfied with the performance of the planning consultant based on factors that were considered to influence the level of performance of the planning consultant with a satisfaction value of 70.39% (Satisfied), but still needed improvement because there was still a 29.61% level of dissatisfaction with planning performance
3. Understanding Indicator of Planning Reference, in this aspect the level of satisfaction with the performance of planning consultants based on CSI analysis is 62.63%. This CSI value can be interpreted that users of planning consulting services in project planning in South Kalimantan feel "Quite Satisfied" with the project planning consulting services they carry out. Based on this understanding, the indicator of the planning consultant's ability must be further improved in the future, bearing in mind that there are still 37.37% of other consumers who express dissatisfaction with the performance of the planning consultant.

Analysis of Importance Performance Analysis (IPA)

This study also uses interest and performance analysis (Importance-Performance Analysis/IPA). IPA analysis is used to measure the level of interest and performance of planning consultants in project planning in South Kalimantan using questionnaire data.

With the IPA method itself, researchers can see the performance and expectations of each factor being reviewed, so that they can develop performance improvement strategies from planning consultants. The questionnaire that was submitted to the respondents was given a choice of answers using a 5 level scale (likert).

Importance-Performance Analysis (IPA) Quadrant division uses the SPSS 20.0 program to determine the Kartersius diagram using the average score (Mean). This diagram is used to describe the variables and a number of indicators that are considered to influence the performance of the Road and Bridge planning consultant in the Bina Marga work at BANJARBAKULA based on the Planning Document Indicators, as shown in Figure 3.1 below

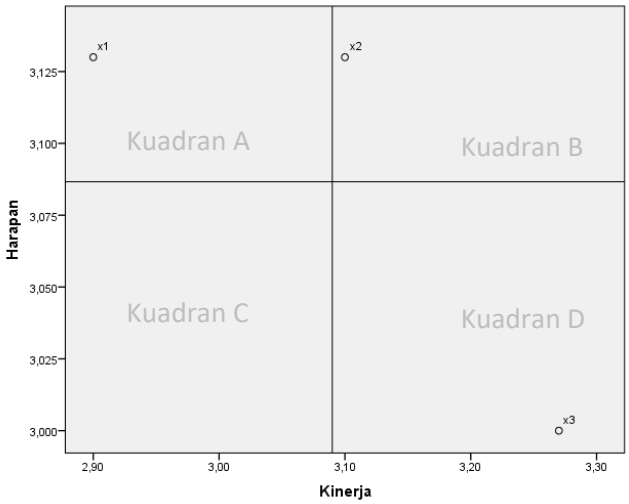

Figure 3.1 IPA Quadrant Planning Document Indicator

Figure 3.1 above shows that there are indicators in all quadrants that have an effect, especially in quadrant A (concentrate here) and quadrant C (low priority) on the performance of the planning consultant on the Planning Document Indicator, the details of which can be seen in Table 3.4 Quadrant IPA Planning Document Indicator

Table 3.4 IPA Quadrant Planning Document Indicator

QUADRANT A	QUADRANT B	QUADRANT C	QUADRANT D
(1) Conformity between drawing documents, RKS, and Engineer's Estimate.	(2) Accuracy		(3) Systematic presentation of design documents. (7) The accuracy of the list of experts in the bidding and at the time of the planning process

Meanwhile, the division of the Importance Performance Analysis (IPA) Quadrant using a Cartesian diagram on the performance of the planning consultant on the Planning

Performance Indicator using the average score (Mean) on the "planning time" variable is as shown in Figure 3.2

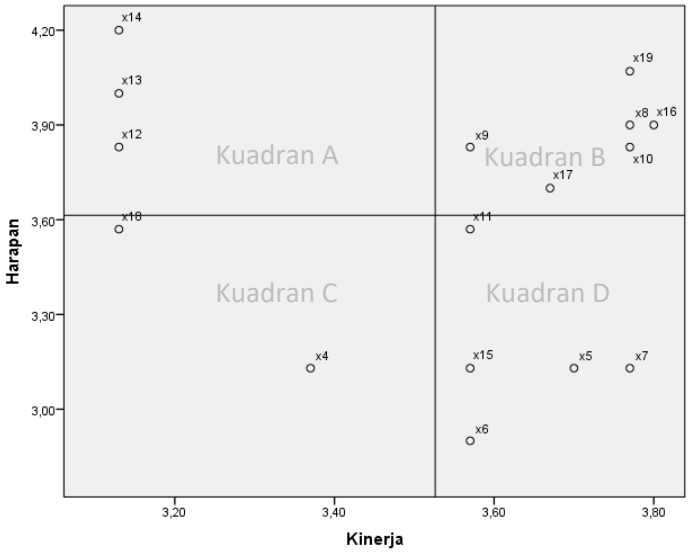

Figure 3.2 IPA Quadrants Using Planning Performance Indicators

According to Figure 3.2 above, it can be seen that there are only quadrants, namely in Quadrant B (Quadrant that must be maintained) in Quadrant C (low priority quadrant). Based on the planning time aspect in the figure above, it shows that the indicators in quadrant C can be a concern for improvement priorities, but they can also be ignored. The details of the variables included in each of these quadrants are as shown in Table 3.5

Table 3. 5 IPA Quadrant Aspects of Planning Performance

QUADRANT A	QUADRANT B	QUADRANT C	QUADRANT D
(12) Suitability of the type of personnel costs with the needs of the project (13) Compatibility of types of non-personnel costs with project needs (14) Accuracy of data collection	(8) The accuracy of the quality of construction work (9) Accuracy of construction work methods (10) Accuracy of K3 construction work (16) Communication and coordination skills in construction work activities (17) Ability to review and	(4) Accurate consideration of location and availability of materials. 18) Ability to always be present in construction work activities in the field	(5) Accuracy of consideration of Power and Tools (6) Appropriate consideration of the impact of planning on the environment. (11) Accuracy of the results of the calculation of the bill of quantity and estimated costs in planning.

	evaluate construction work (19) Accuracy of planning work	(15) Accuracy of planning design estimates

Next, is the division of the Importance Performance Analysis (IPA) Quadrant based on the level of importance using the Mean Score on the Planning Reference Understanding Indicator, as can be seen in Figure 3.3

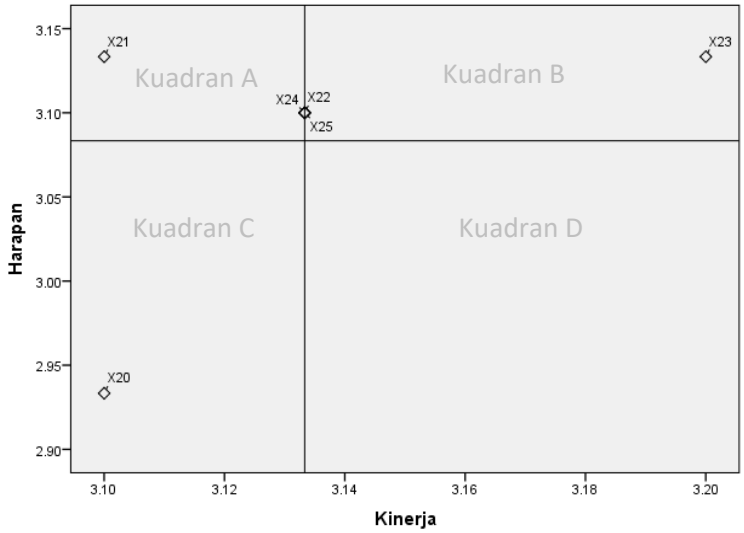

Figure 3.3 IPA Quadrants Indicators of Understanding of Planning References

As seen in Figure 3.3 above, there is 1 indicator that influences Quadrant A (concentrate here/top priority quadrant), while in Quadrant C (low priority/low priority quadrant) there is 1 indicator that influences the performance of the planning consultant. The variables X22, X24, X25 are right on the line between quadrants A and B. Through interviews, respondents agree that they are in quadrant B, because they have a high level of satisfaction with their performance. Details of each indicator in each quadrant, as can be seen in Table 3.6

Table 3.6 IPA Quadrant Indicator of Understanding of Planning Reference

QUADRANT A	QUADRANT B	QUADRANT C	QUADRANT D
(21) Conformity of personnel cost calculation methods with planning guidelines	(22) Compatibility of non-personnel cost calculation methods with planning guidelines (23) Conformity of spatial program	(20) Conformity of planning with applicable regulations	

	arrangement with planning guidelines (24) Systematic preparation of the schedule Reporting on the results of planning activities (25) Accuracy of consideration of the allocation of implementation time	

Referring to the Importance Performance Analysis (IPA) quadrant division using the Mean Score as described in Table 3.6 above, it can be concluded that there are 4 Concentrate Here variables (Quadrant A, top priority), and 12 indicators contained in the Low Priority Quadrant (quadrant C, low priority). The indicators in quadrant A must receive top priority. Based on the quadrant division above, it means that there are 5 important indicators that must get serious handling, so that the performance of Road and Bridge planning consultants on Bina Marga work at BANJARBAKULA can be improved.

4. CONCLUSIONS

Based on the analysis carried out in this study, it can be concluded that several indicators have various influences on the performance of planning consultants in project planning in South Kalimantan so that the following conclusions can be drawn:

1. Planning Document Indicator of 61.72% (Quite Satisfied). Planning Performance Indicator of 70.39% (Satisfied). Indicators Understanding Indicators of Reference Planning of 62.63% (Quite Satisfied).
2. This study succeeded in identifying 5 dominant factors that affect the performance of planning consultants and need to be improved, namely:
   - Conformity between drawing documents, RKS, and Engineer's Estimate.
   - Appropriateness of the types of personnel costs with project needs,
   - Conformity of the type of non-personnel costs with the needs of the project
   - Accuracy of data collection
   - Conformity of personnel cost calculation methods with planning guidelines.
3. Strategies to improve the performance of the Road and Bridge Planning Consultants in the Bina Marga work at BANJARBAKULA, namely:
   - The Planning Consultant must be committed to using personnel according to the qualifications listed.
   - Planning Consultants must carry out careful planning by directly seeing or observing the planning location and involving personnel who have knowledge of construction implementation.

- Planning Consultants must further maximize their role to achieve project success.
- The planning consultant must maximize the determinants so that the consultant is able to work effectively in construction projects.

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