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Research Paper

Analysis of Contractor Performance for Road Rehabilitation Work Using Specific Allocation Fund of 2022 in Malang Regency

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ABSTRACT: *Road plays crucial role to ensure smooth movement of people and goods in Malang Regency whose area is surrounded by mountains and lowlands. Therefore, road rehabilitations are such important projects to be conducted by government of Malang Regency. On the other side, road rehabilitation projects are mostly conducted by using specific allotment funds with their own characteristics and problems. For instance, the funds are mostly given several months before year end resulting shorter period for project completion. Therefore, the contractors should have excellent performance. This research aimed at investigating performance of contractor rehabilitation project. This is a descriptive study using survey approach in which research method employs are Customer Satisfaction Index (CSI), Importance Performance Analysis (IPA) and Simple Regression Analysis. CSI is employed to measure stakeholders' satisfaction on contractors' performance. IPA was used to map performance variables on the part of contractor and simple regression analysis is to find out the correlation between satisfaction level and importance level of contractor performance.*
KEYWORDS: *Performance, Road Rehabilitation, Special Allocation Fund, CSI, IPA*

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I. INTRODUCTION

Road plays crucial role to ensure smooth land transportation system in Malang Regency. It is due to that Malang Regency is surrounded by mountains and lowlands. Malang Regency is the second largest regency in Indonesia. Road ensures smooth movement of people and goods in Malang Regency. In addition, good transportation system keeps prices of public goods reasonable. Road length in Malang Regency is 1.668.76 km (BPS, 2019). Road of 265,19 km long is highly broken. It, of course influences many aspects. Therefore, road rehabilitation is one of priority program for regional government of Malang Regency. It is in line with Indonesian Law no 38 of 2004 states that responsibility of maintaining road lies on regional government.

One of the resources used for road rehabilitation is Specific Allocation Fund (DAK). It is one of funds in Indonesian State Budget which is transferred to regional government to fund for construction project in relevant region. There are three types of Specific Allocation Fund (DAK). They are Regular Specific Allocation Fund (DAK), Specific Allocation Fund (DAK) for specific Assignment and Specific Allocation Fund (DAK) for Affirmation area. The fund received by Regional government of Malang is Regular Specific Allocation Fund (DAK). Its target is to improve people's prosperity in that region by fulfilling their basic needs. Therefore, regional government is required to manage the fund and construction project.

However, construction projects especially road rehabilitation ones by using Specific Allocation Fund (DAK) raises several problems. One of them is concerned with disbursement fund schedule. It is usually disbursed in the middle of budget year. It results in shorter period of time for project completion. For instance, rehabilitation work for Wagir – Gunungkawi Road could not meet the predetermined schedule due to late downpayment. Rehabiltation project of Mangliawan – Tumpang is two-month late due to late down payment and late construction material from Asphalt Mixing Plant. The problems result in missed deadline of road rehabilitation project.

Concerning the afore-mentioned problems and the significance of road rehabilitation project, the contractor for the projects should have excellent performance to handle the problems and finish the project. Thefore, there is a need to evaluate contractors' performance by measuring satisfaction index on the part of projects' stakeholders as well as to map their performance to find out which one to be maintained and improved.

II. LITERATURE REVIES

A. Stakeholders' Satisfaction

Oxford Advance Learner's Dictionary (2000) states that satisfaction is the good feeling that you have when you achieved something or when something that you wanted to happen does happen, the act of fulfilling a need or desire, an acceptable way of dealing with a complaint, a debt, an injury etc. In addition, Fatihudin & Firmansyah (2019) stated that stakeholders' satisfaction is indicators of happiness on the part of stakeholders after using certain product or services. Satisfaction is also a comparison between stakeholders' expectation and their experience during product or service usage.

There are four methods to measure satisfaction. They are complaint and suggestion, ghost shipping, lost customer analysis and survey of satisfaction. The first method is conducted by giving access for stakeholders to give suggestion and complaints. The second is by asking several people to pretend to be stakeholder from rival companies. Lost customer analysis is conducted by gathering information from customers who are stop using product from certain company and move to another company. The last, survey of satisfaction is intended to elicit response and positive impressions for product or performance. This study uses survey of satisfaction in the form of Customer Satisfaction Index (CSI).

B. Customer Satisfaction Index (CSI)

Suryanto (2017) states that Customer Satisfaction Index is measurement method to measure total satisfaction level on the part of stakeholders. It is based on perceive feeling for product, services or performance. Dickinson in Fitriana et all (2014) elaborates that there are for steps to measure customer satisfaction index. They are

1. Calculating mean importance score *(MIS)* and mean satisfaction score (MSS). They are obtained by obtaining average of significance level and satisfaction level of stakeholders.
2. Calculating weight factor (WF). This is a percentage of MIS score of each variable attribute to all MIS Score.
3. Calculating weighted score (WF). It is obtained by multiplying score of weight factor and mean satisfaction score (MSS).
4. Calculating weighted average total (WAT) by summing up weighted score (WS).
5. Calculating customer satisfaction index (CSI) score.

C. Importance Performance Analysis (IPA)

Importance Performance Analysis (IPA) was first introduced by Martila & Jams (Khasani, et all, 2013). It is used to measure correlation between consumers' perception and priority of improving product or service quality which is known as quadrant analysis. IPA is a method to analyze and compare performance or service perceived by stakeholders with their satisfaction level. Steps to conduct Importance Performance Analysis are as follows

1. Calculating conformity level between significance level and performance level.
2. Calculating average score of significance and significance level for each performance item.
3. Calculating average score of significance and significance level for all performance item.
4. Composing Cartesius diagram to map performance items of contractors into four quadrant.

D. Management of Construction Project

Indonesian Law no 2 of 2017 states that "construction works are whole or partial activities which cover building, operating, maintaining, breaking off and rebuilding activities. Project management is a process to plan, organize, lead and control certain resources to achieve predetermined target. Project management is also concerned with all resources to support the project such as material, equipment and manpower.

In addition, it is stated in *Project Body Management of Knowledge* that project management is planned effort to produce unique products or services. They have timeline of completion. Thus, project management is process of planning, organizing, directing and supervising efforts of member of organization and making use of other resources to produce certain product or services (PMI, 2017). Project Management Body of Knowledge also states that there are ten areas of management namely management of project integration, project scope, project schedule, project budget, project quality, project resources, project communication, project purchasing and management of project stakeholders.

E. Stakeholders' Satisfaction for Project Construction

Stakeholders of project construction are those involved in road rehabilitation project using Specific Allocation Fund (DAK) of 2022 in Malang Regency. They are project owner, consultants and project supporting teams. This study is intended to investigate their satisfaction on performance of contractor in managing the project.

After reviewing preliminary study, analyzing Project Body Management of Knowledge and observation, there are twenty variables of contractor performance to manage road rehabilitation using Specific Allocation Fund (DAK) of 2022 in Malang. They are stated as follows

- Contractors' performance to manage purchasing equipment and tool for project.
- Contractors' performance to maintain cleanliness in project site.
- Contractors' performance to adhere to technical specification for project.
- Contractors' performance to ensure that project scope is in line with what is stated in contract document.
- Contractors' performance to make administrative report periodically.
- Contractors' performance to obtain competent human resources for project
- Contractors' performance to meet timeline of projects
- Contractors' performance to ensure that project report is based on real condition in project site.
- Contractors' performance to handle complaints from stakeholders.
- Contractors' performance to handle problems which are related to cost, quality, timeline and conflict
- Contractors' performance to give fast response for complaint from project owner
- Contractors' performance to plan for health and safety procedures and equipment
- Contractors' performance to provide equipment for health and safety based on prevailin regulations.
- Contractors' performance to supervise for health and safety measures
- Contractors' performance to deliver partially or entirely their work to project owner based on prevailing regulation
- Contractors' performance to maintain project during maintenance period.
- Contractors' performance to ensure that supervision and control for project can be conducted periodically
- Contractors' performance to apply system of quality management during project construction
- Contractors' performance to give fast response to direction, warning, and written order from project owner/consultant
- Contractors' performance to facilitate support delivery for stakeholder

F. Correlation between stakeholders' satisfaction and performance of service provider

Stakeholder theory states that companies operate not only for seeking profit for them but also for giving benefit to stakeholders (Ghozali and Chariri, 200&). Stakeholders have power to influence the use of economic resources of companies. Therefore, companies and service providers should operate in a way that satisfies their stakeholders. Stakeholder theory is closely related to company responsibility. Efforts for profit seeking are influenced by company's ability to fulfill their stakeholders' need. Therefore, stakeholders' satisfaction should be taken into serious account by company and service providers. In this study, stakeholders are project owner, which is Government of Malang Regency represented by Office of Public Works and consultants. Their satisfaction on management performance of project contractors is crucial for future project.

III. RESEACH METHOD

3.1. Research Design

This study employs survey design. It aims at evaluating contractors' performance for road rehabilitation project using Specific Allocation Fund (DAK) of 2022 in Malang Regency. The evaluation will be conducted by measuring satisfaction index on the part of project stakeholders on contractors' performance when managing road rehabilitation project. The stakeholders are project owners and consultants. Performance variables of contractors are adopted from Project Management Body of Knowledge, preliminary research and observation.

3.2. Data Type

There are two types of data used in this study. They are primary and secondary data.

a. Primary data are those obtained from questionnaire given to respondents. It is intended to measure stakeholders' satisfaction.
b. Secondary data are those obtained from journal, relevant studies and books to support this study.

3.3. Respondent of Study

Respondents of this study are stakeholders of road rehabilitation project using Specific Allocation Fund (DAK) of 2022 in Malang Regency. The number of respondents are 51 respondents consisting Commitment Making Officials (CMO), Technical Project Implementer Officials, Members of Supporting Team, and Consultants.

3.4. Research Instruments

This study uses questionnaire to collect data on performance variables of project contractors of road rehabilitation project using Specific Allocation Fund (DAK) of 2022 in Malang Regency. The questionnaire consists of four parts namely respondent profile, project information, performance satisfaction measurement and performance significance measurement. It also uses Likert Scale for respondents' response.

3.5. Data Analysis

a. Customer Satisfaction Index (CSI)

After obtaining data from questionnaire, CSI is conducted to use to measure satisfaction level of stakeholder for contractor performance of Specific Allocation Fund (DAK) of 2022. The steps of CSI.

- To calculate Mean Importance Score (MIS)
- To calculate Weight Importance Score by obtaining percentage of MIS from total MIS score using the following formula

$$\text{WF} = \frac{\text{MIS}}{\text{Total MIS}} \text{ x } 100\%$$

- To calculate Weighted Score (WS) by multiplying WF with Mean Satisfaction Score (MSS) for each performance variable.
- To calculate Weighted Average Total (WAT) by summing up all Weighted Score (WS) from all performance variables.
- To determine Customer Satsfaction index by using the following formula

$$CSI = \frac{WAT}{HS} X\ 100\%$$

b. Importance Performance Analysis (IPA)

After obtaining score of CSI, then Importance Performance Analysis is conducted. It aims at mapping performance variables into four quadrants. Quadrant I is for performance variables that should be improved. Quadrant II is for those who need to be maintained. Quadrant III is for performance variables with low priority to be improved and Quadrant IV is for performance variables which are not important but satisfying for stakeholders.

Steps for Importance Performance Analysis are as follows

- To calculate conformity level between significance level and satisfaction level of performance by using the following formula

$$CL = \frac{Xi}{Yi} X\ 100\%$$

CL = Conformity Level
Y = Score of Significance level of performance
X = Score of satisfaction level

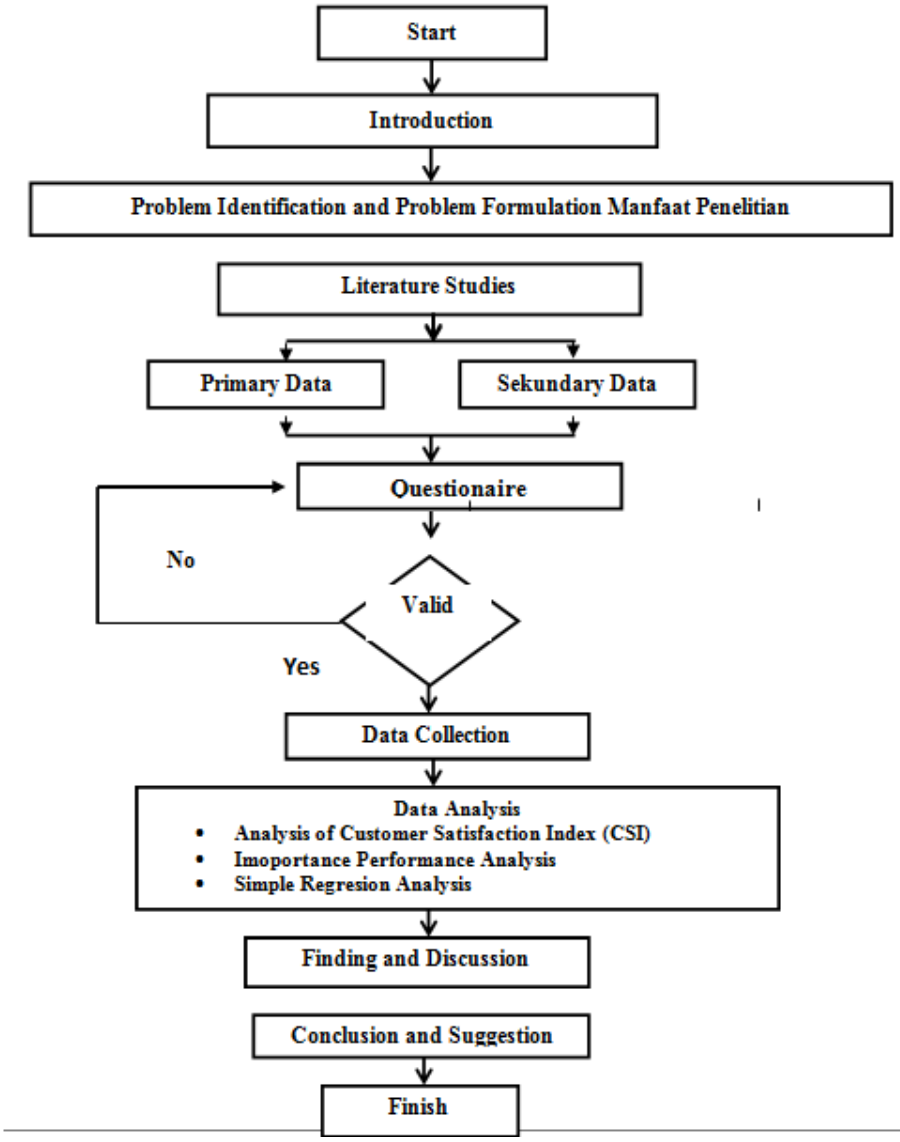
- To calculate average score of significance level and satisfaction level for each performance variable.
- To calculate average score significance level and satisfaction level for all performance variables.
- To compose Cartesian diagram to map performance items of contractors into four quadrant

c. Simple Regression Analysis

It is conducted to find out correlation between level of significance and level of importance of performance variable on the part of road rehabilitation contractor using Specific Allocation Fund (DAK) of 2022. The criteria are

- If score of significance (Sig) is less than < 0,05, then it can be drawn that there is significant correlation among the two.
- If the score of significance (Sig) is higher than <0,05, then there is no significant correlation among the two.

3.6. Study Flowchart



IV. RESULT AND DISCUSSION

4.1. Test of Instrument

a. Test of validity

Validity test was conducted by using Product Moment Correlation test. The result of validity test for questionnaire shows as all item stated in the questionnaire is valid. It is shown by score of score of calculated r which are higher than score of r_{tabel} which is 0,276.

b. Test of reliability

Cronbach Alpha is used to test for normality of questionaire items. If Cronbach Alpha score is between 0,8 – 10, then it is said that the questionnaire has good reliability. The test shows that score of Cronbach Alpha for the questionnaire used in this study is 0,896. It means that it is highly reliable.

4.2. Analysis of Customer Satisfaction Index

a. Calculating Mean Importance Score (MIS) AND Mean Satisfaction Score (MSS).

Responses from respondent on the Importance Level and Satisfaction level of performance variables are calculated and presented in the following table in the form of Mean Importance Score (MIS) and Mean Satisfaction Score (MSS).

Table 4.1 Score of MIS and MSS

ITEM	MIS	MSS
1	4,96	4,43
2	4,86	4,55
3	4,69	4,27
4	4,82	4,33
5	4,61	4,55
6	4,78	4,53
7	3,47	4,65
8	4,78	4,59
9	4,80	4,53
10	4,61	4,47
11	4,55	4,57
12	4,51	4,33
13	4,49	4,33
14	4,63	4,41
15	4,65	4,63
16	4,65	4,39
17	4,96	4,67
18	4,65	4,39
19	4,14	4,57
20	4,63	4,51
Jumlah	92,24	95,08

b. Calculating Weight Importance Score and Wight Score
WF is obtained by the following formula

$$WF = \frac{MIS}{Total\ MIS} \text{ x } 100\%$$

Scores of WF and WS are presented in the following table

Table 4.2 WF and WS Score

No Item	WF	WS
1	5,22	23,12
2	5,11	23,26
3	4,93	21,07
4	5,07	21,98
5	4,85	22,04
6	5,03	22,79
7	3,65	16,96
8	5,03	23,09
9	5,05	22,88
10	4,85	21,66
11	4,78	21,86
12	4,74	20,55
13	4,72	20,46
14	4,87	21,47
15	4,89	22,62
16	4,89	21,47
17	5,22	24,35
18	4,89	21,47
19	4,35	19,88
20	4,87	21,95

WAT		434,93

c. Calculating Weighted Average Score (WAT)

Summing up all Weighted Score of item of performance variables of road rehabilitation contractors results in WAT score. Score of WAT is 434,93

d. Calculating CSI score

It is obtained by dividing WAT score by High Scale (maximum scale used for responses of item). The Likert scale used is 1 – 5. Calculation of CSI score is presented below

$$CSI = \frac{WAT}{HS} X\ 100$$

$$CSI = \frac{434,93}{5} X\ 100$$

CSI = 86,99 %

CSI score of 86,99% shows that stakeholders are highly satisfied with contractor performance of road rehabilitation project using Specific Allocation Fund (DAK) of 2022 in Malang Regency.

4.3. Importance Performance Analysis

Importance Performance Analysis (IPA) aims at finding out performance variables that should be imporved and maintained. Steps of Importance Performance Analysis area

a. Calculating score of Conformity Level

The scores are obtained by comparing score of performance satisfaction and score of performance significance. The scores of Conformity level are presented in the following table

Table 4.3. Score of Conformity Level

Item No	Performance Variable	TK
1	Contractors' performance to manage purchasing equipment and tool for project.	89,33
2	Contractors' performance to maintain cleanliness in project site.	93,55
3	Contractors' performance to adhere to technical specification for project.	91,21
4	Contractors' performance to to ensure that project scope is in line with what is stated in contract document.	89,84
5	Contractors' performance to make administrative report periodically.	98,72
6	Contractors' performance to obtain competent human resources for project	94,67
7	Contractors' performance to meet timeline of projects	133,90
8	Contractors' performance to ensure that project report is based on real condition in project site.	95,90
9	Contractors' performance to handle complaints from stakeholders.	94,29
10	Contractors' performance to handle problems which are related to cost, quality, timeline and conflict	97,02
11	Contractors' performance to give fast response for complaint from project owner	100,43
12	Contractors' performance to plan for health and safety procedures and equipment	96,09
13	Contractors' performance to provide equipment for health and safety based on prevailing regulations.	96,51
14	Contractors' performance to supervise for health and safety measures	95,34
15	Contractors' performance to deliver partially or entirely their work to project owner based on prevailing regulation	99,58
16	Contractors' performance to maintain project during maintenance period.	94,51
17	Contractors' performance to ensure that supervision and control for project can be conducted periodically	94,07
18	Contractors' performance to apply system of quality management during project construction	94,51
19	Contractors' performance to give fast response to direction, warning, and written order from project owner/consultant	110,43
20	Contractors' performance to facilitate support delivery for stakeholder	97,46

b. Calculating Average Score of Performance Satisfaction Level (X) and Score of Performance Significance Level (Y)

X = 4575

Y = 4704

c. Calculating Total Score of Performance Satisfaction Level (X) and Score of Performance Significance Level (Y)
It is conducted by dividing X score by Y score and multiplying it by 100. The result is 97,26.

d. Determining axis point for X and Y to compose Cartesian Diagram
It is obtained by the following formula

$$\bar{\bar{Y}}_1 = \frac{\sum_{i=1}^{k} \bar{Y}_1}{n}$$

$$\bar{\bar{X}}_1 = \frac{\sum_{i=1}^{k} \bar{X}_1}{n}$$

The score for X is 4,49 and Y is 4,61
The following is Cartesius Diagram for IPA analysis.

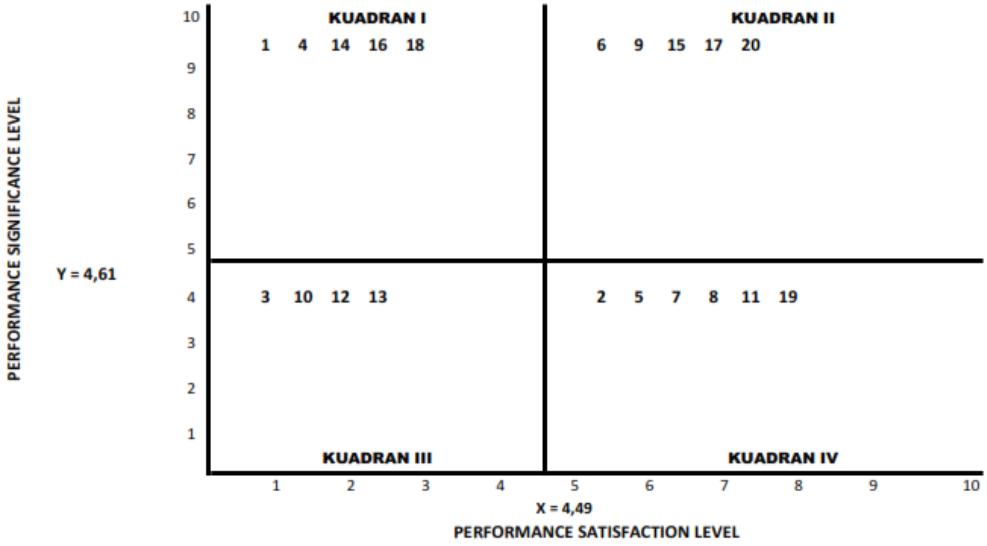


Figure 4.1 Cartesius Diagram
Source: Data Analysis (2022)

Based on the Cartesius diagram, we find that

a. Quadrant I
There are five performance variable that fall into Quadrant I. Those performances are highly recommended to be improved. They are
- Contractors' performance to manage purchasing equipment and tool for project
- Contractors' performance to to ensure that project scope is in line with what is stated in contract document.
- Contractors' performance to supervise for health and safety measures
- Contractors' performance to maintain project during maintenance period
- Contractors' performance to apply system of quality management during project construction

b. Quadrant II
Five performance variables falling into this quadrant are those which should be maintained. They are
- Contractors' performance to obtain competent human resources for project
- Contractors' performance to handle complaints from stakeholders
- Contractors' performance to deliver partially or entirely their work to project owner based on prevailing regulation
- Contractors' performance to ensure that supervision and control for project can be conducted periodically
- Contractors' performance to facilitate support delivery for stakeholder

c. Quadrant III

Performance variables in this Quadrant have low priority to be improved. They are

- Contractors' performance to adhere to technical specification for project.
- Contractors' performance to handle problems which are related to cost, quality, timeline and conflict
- Contractors' performance to plan for health and safety procedures and equipment
- Contractors' performance to provide equipment for health and safety based on prevailin regulations

d. Quadrant IV

Six performance variables in this quadrant are those which are not significant but satisfying for stakeholders. They are

- Contractors' performance to maintain cleanliness in project site
- Contractors' performance to make administrative report periodically
- Contractors' performance to meet timeline of projects
- Contractors' performance to ensure that project report is based on real condition in project site
- Contractors' performance to give fast response for complaint from project owner
- Contractors' performance to give fast response to direction, warning, and written order from project owner/consultant

4.4. Simple Regression Analysis

This analysis aims at finding out whether or not there is significant correlation between performance significance and performance satisfaction level for contractor of road rehabilitation work using Specific Allocation Fund (DAK) of 2022. If significance score of simple regression analysis is <0, 05 then there is significant correlation between the two levels. In addition, if significance score is >0, 05 then there is no significant correlation between the score of levels.

The result of simple regression analysis shows that the score of significance is 0.01. It means that there is significant correlation between score of performance significance level and score of performance satisfaction level for contractor of road rehabilitation work using Specific Allocation Fund (DAK) of 2022 in Malang Regency.

V. CONCLUSION

There are 20 performance variables identified in this research based on literature review and field observation. Research instrument used in this study is questionnaire in which respondents should give responses on level of performance significance and performance satisfaction based on the 20 performance variables

The results of data analysis show that stakeholders are highly satisfied with contractor performance of road rehabilitation projects using Specific Allocation Fund (DAK) of 2022 in Malang Regency. It is shown by CSI score of 86,99%. The result confirms study conducted by Syahroni and Siswoyo (2018).

There are five performance variables on the part of contractor that should be improved. They are contractors' performance to manage purchasing equipment and tool for project, contractors' performance to to ensure that project scope is in line with what is stated in contract document, contractors' performance to supervise for health and safety measures, contractors' performance to maintain project during maintenance period, ccontractors' performance to apply system of quality management during project construction. It is in line with previous study conducted by Khasani (2013).

Simple regression analysis shows that there is significant correlation between performance significance level and performance satisfaction level. It confirms study conducted by Syahroni and Siswoyo (2018).

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