

The Evaluation of Consultant Supervisors Performance on Road Construction Project in East Borneo

Amir *, Benny Mochtar, E.A **, Tiong Iskandar ***

*(Civil Engineering Program Study, Postgraduate, National Institute of Technology Malang, East Java, Indonesia.

** (Department of Civil Engineering, August 17th University Samarinda, East Borneo, Indonesia)

*** (Department of Civil Engineering, National Institute of Technology Malang, East Java, Indonesia)

Corresponding Author: Amir

ABSTRACT

The Road constructions in East Borneo, which is developed in 2015, is expected to produce road infrastructure that could be done as the plan and its regardless from the role of the consultant supervisors performance which is give the owner service with their skill. Therefore, this research was conducted to determining the supervisor consultants performance on the road construction project in East Borneo and to get the most dominant factor that influencing and to determining the strategies to improve the performance of the supervisor consultants on the road construction in East Borneo. The results of this research, supervisor consultants performance significantly in road construction project in East Borneo is capabilities factors of the surveillance project management with the coefficient value of $t_{hitung} = 2,575 > t_{tabel} = 1,679$ and the worker attendance factor with the coefficient value $t_{hitung} = 2,317 > t_{tabel} = 1,679$. The most dominant factor that is influencing the performance supervisor on the road construction project in East Borneo is the capabilities of the factors of the surveillance project management with a coefficient value β at 0.639. The supervision consultant have an obligatory to take intensive training (workshop) and organizing meeting at the beginning of the activity discussing about evaluation and technical certification related to the set of the field problems and the particular work item in the RAB contract, the supervision consultant also have an obligatory to organize meeting at the beginning of the activity discussing about evaluation and about the SOP responsibilities as the supervision consultant, the supervision consultant have an obligatory to take intensive training (workshop) and organizing meeting at the beginning of the activity discussing about evaluation and the documents contract problems and also about the physical contract equipments completeness, the supervision consultant have an obligatory to take intensive training (workshop) and organizing meeting at the beginning of the activity discussing about the job safety related to the problems condition at the field and the job RAB contract particular items and also the submission of the job safety before working at the field.

Keywords: Performance Factor, Supervision Consultant

I. INTRODUCTION

1.1 Background

Infrastructure construction in East Borneo is one of the main sector of economics. In addition, highway construction department have a very strong influence to connect cities, the production district along with the marketing district and the other central district. Highway construction department is the main important part to expedite the work of economics. More effort from the government to build the infrastructure, then the demand to build infrastructure increase, that is done to facilitate the resident and the commodity traffic from one region to the other.

The road construction activity in East Borneo, which is began in 2015, is expected to create the result at the exact time, quality, and cost as the plan. However, role and performance of the owner, contractor, and the consultant supervisor also

influencing the construction. In this case, the owner is as the Authorized Budget User (ABU) and pointing the PPTK to work in the field presenting ABU to control the contractor. The PPTK is assisted by the technical team from the consultant supervisor whom operationally have been pointed to do daily task as a supervisor to the contractor which their existence is ruled in the contract. However, in the field there are a lot of consultant supervisor who is not doing their role properly.

In the direction to increase professionalism of the consultant supervisor it can not be done partially, although it will be demanding whole process. The attempt to increase the professionalism, it have to base on the vision, mission, and the precise strategy. Because of that, monitoring the performance of consultant supervisor will be important thing.

The work of the consultant supervisor on the road construction in East Borneo is supervisor management capability on project organize, quality control of job value on quality and quantity aspect, volume and cost restrain, time restrain, the coordination to prepare meeting materials, task and obligation comprehension which is attached in KAK, the accuracy, the velocity and to convey the report, work attendance. The capability of the supervisor will be monitoring directly by the core team in highway areas in civil department in East Borneo.

1.2 Problem of the Study

According to the background, it can be formulated as follow:

1. What does the factors that significantly influence the performance of the consultant supervisor on the road construction project in East Borneo?
2. What is the dominant factor that influence the performance of the consultant supervisor on the road construction project in East Borneo?
3. What strategies that must be done to increase the performance of the consultant supervisor on the road construction project in East Borneo?

1.3 Research Purpose

We can conclude the purpose of this research base on the problem above, it can be formulated as follow:

1. To analyze all of the factors that influencing the performance of the consultant supervisor on the road construction project in East Borneo.
2. To analyze the dominant factor that influencing the performance of the consultant supervisor on the road construction project in East Borneo.
3. To determine the strategies that must be done to increase the performance of the consultant supervisor on the road construction project in East Borneo.

II. REVIEW OF RELATED LITERATURE

2.1 Construction Project

Project is one way activity, with the limited time and sources to achieve final result that has been fixed as the plan, for example the product or production facilities. Project activities, it means that as one temporary activity that must be done in limited time, with certain resources and it intention is to produce product or devirable which the quality criteria has been link clearly (Suharto, 2001). And about the construction, Barrie and Pulson (1984) stated that the construction is the process where designer plan and specification converted into a real structure and facility.

2.2 The Definition of Supervising

Supervising is an inspection of the used of implementation of work in order to avoid the diverge. Another definition from supervising is an effort to evaluate project data, alongside with SOP authorities to give a hint to the intervene action (PT3).

2.3 The Definition of Performance

Performance is a determining system for the periodic operational organization, part of the organization and the employee base on the standard and criteria which have been decided previously (Purnomo, 2008)..

III. RESEARCH METHODOLOGY

This research is using survey design and its method is accumulating the opinions, experience, and the attitude of the respondent about the problems, and took the primary data through the questionnaire and took the secondary data from the related institution. Base on the factors which is influencing the consultant supervisors' performance on the road construction project in East Borneo, it is necessary to determine the factors and advancing the variables that will be measure as the items on the questionnaire.

1) Primary data, that is the data collected directly from the field survey to utilize the original data collection by distributing the questionnaire; and 2) Secondary data, that is the data taken from the company such as documents, notes, reports, research results, books, article and another publication and from the related institution.

The method to analyze the data is using double analysis regression with four stage help with SPSS software, stage one, data quality test, using validity and reliability. Stage two, do the classic assumption test, using classic assumption test (normality, non-multicolinierity, homoskedasity, non-auto correlation). Stage three, do the regression analysis. And stage four, do the hypothesis test (t test and f test). The method to achieve research purpose is double analysis regression linier. According to Sugiyono (2007) the purpose of double regression linier is to predicted how the situation (up and down) dependent variable (criterion), if two or more independent variable as prediction factor being manipulation (to up and down the value) to proses double analysis regression linier if the independent variable minimal 2 (two). The formula is $Y = a + b_1 X_1 + b_2 X_2 + b_3 X_3 + \dots + b_n X_n$

Coefficient correlation (R) and determination (R²) determinant test (R²) it is to measures how far the ability of model to explain the variation of dependent variable. Coefficient determination value is between zero and one. The meaning of R² value is the ability of independent variables to explain

independent variables is very limited. The value to approach 1 (one) it means that the independent variables gave all of the information that dependent variable needed to predict.

IV. ANALYSIS AND DISCUSSION

4.1 Analysis

TABLE 1
Normality assumption test

Statistik Uji	Nilai	Keterangan
Kolmogorov-Smirnov Z	0,556	Menyebarkan normal
p-value	0,917	

Sumber: Hasil Analisis SPSS

TABLE 2
non-multicolinerity assumption test

Variabel Independen	VIF	Keterangan
Kemampuan manajemen pengawasan penyelenggaraan proyek (X1)	3,416	Non Multikolinieritas
Pengendalian mutu pekerjaan segi kualitas dan kuantitas (X2)	3,684	Non Multikolinieritas
Pengendalian volume dan biaya (X3)	2,670	Non Multikolinieritas
Pengendalian waktu (X4)	2,001	Non Multikolinieritas
Koordinasi penyiapan materi rapat pelaksanaan (X5)	1,154	Non Multikolinieritas
Penguasaan/pemahaman tugas-tugas dan kewajiban yang tercantum dalam KAK (X6)	2,498	Non Multikolinieritas
Ketepatan, kecepatan dan kelengkapan dalam menyampaikan laporan (X7)	1,109	Non Multikolinieritas
Kehadiran kerja (X8)	3,724	Non Multikolinieritas

Sumber: Hasil Analisis SPSS

TABLE 3
homoskedastisitas assumption test

Statistik Uji	Nilai	Keterangan
Korelasi Rank Spearman	0,000	Homoskedastisitas
p-value	1,000	

Sumber: Hasil Analisis SPSS

TABLE 4 non-auto correlation assumption test
Model Summary(b)

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	,684(a)	,468	,375	,82872	1,911

a. Predictors: (Constant), X8, X3, X5, X7, X4, X6, X1, X2

b. Dependent Variable: Y

Sumber: Hasil Analisis SPSS

TABLE 5 summary of analysis regression result

Variabel	Koefisien β	t _{hitung}	p-value	Keterangan
Konstanta	0,408	0,548	0,586	
X1	0,639	2,575	0,013	Signifikan
X2	-0,331	-1,565	0,125	Tidak Signifikan
X3	0,022	0,096	0,924	Tidak Signifikan
X4	-0,066	-0,397	0,693	Tidak Signifikan
X5	-0,029	-0,304	0,762	Tidak Signifikan
X6	0,091	0,476	0,837	Tidak Signifikan
X7	0,002	0,016	0,987	Tidak Signifikan
X8	0,539	2,317	0,025	Signifikan
α	= 0,050			
R ²	= 0,468			
R	= 0,684			
F-Hitung	= 5,052			
F-Tabel (0,05, 8, 46)	= 2,150			
p-value	= 0,000			
t-tabel (0,05, 46)	= 1,679			

According to table 5, it seems that not all the independent variable has a significant value (there is significant influence towards the consultant supervisor performance on road construction project) is the supervisor management capability on project organize variable (X1) and work attendance variable (X8). Meanwhile the other variable is not giving the significant influence towards the consultant supervisor performance on road construction project. Interpretation of regression model according to the table 4.20 is:

$$Y = 0,408 + 0,639X_1 - 0,331X_2 + 0,022X_3 - 0,066X_4 - 0,029X_5 + 0,091X_6 + 0,002X_7 + 0,539X_8 + \varepsilon$$

Where:

Y : consultant supervisor performance

X₁ : supervisor management capability on project organize variable

X₂ : quality control of job value on quality and quantity aspect variable

X₃ : volume and cost restrain variable

X₄ : time restrain variable

X₅ : coordination to prepare meeting materials variable

X₆ : task and obligation comprehension which is attached in KAK variable

X₇ : the accuracy, the velocity and to convey the report variable

X₈ : work attendant variable.

4.2 The dominant Factors

According to the table 5. supervisor management capability on project organize variable is the variable that has a coefficient value β (0.639) that is the biggest coefficient in this research. The supervisor management on the road construction project has the most dominant influence toward consultant supervisor performances, its means that consultant supervisor have a lot influence by the supervisor management capability on project organize variable. The positive value from the coefficient β indicated that if the supervisor management variable increase then there are possibility that the consultant supervisor will be better and the project would be done as the plan.

4.3 Strategy

The strategy that must be done to increase consultant supervisor performance towards the project that is:

- The supervisor consultant have an obligatory to take intensive training (workshop) and organizing meeting at the beginning of the activity discussing about evaluation and technical specification related to the field problems and the special work item in the RAB contract.
- The supervisor consultant have an obligatory to take intensive training (workshop) and organizing meeting at the beginning of the

- activity to discuss about the responsibility and the SOP as the supervisor consultant.
- c. The supervisor consultant have an obligatory to take intensive training (workshop) and organizing meeting at the beginning of the activity discussing about the evaluation and the contract papers along with the physical contract completeness.
 - d. The supervisor consultant have an obligatory to take intensive training (workshop) and organizing meeting at the beginning of the activity discussing about work safety related to field problems and the special work item in RAB contract.
 - e. The supervisor consultant have an obligatory to take intensive training (workshop) and organizing meeting at the beginning of the activity discussing about the supervisor consultant work attendance in every stages of job along with the attendance system in the field.
 - f. The supervisor consultant have an obligatory to take intensive training (workshop) and organizing meeting at the beginning of the activity discussing about the supervisor consultant work attendance in every quality test and the attendance system in the field eventually explain the methodology and supervision work program.

V. CONCLUSION

From result and discussion of this research that have been described on the previous chapter, we can conclude that:

1. We can get from the result of the F test that the factor X_1 , X_2 , X_3 , X_4 , X_5 , X_6 , X_7 , and X_8 influential simultaneously toward the consultant supervisor performance on road construction project value $F_{count} = 5,052 > F_{table} = 2,150$. But from the result of t test in partial factors that influence the consultant supervisor performance on road construction project in East Borneo province is:
 - a. Supervisor management capability on project organize factor with the coefficient value $t_{count} = 2,575 > t_{table} = 1,679$.
 - b. Work attendant factor with the coefficient value $t_{count} = 2,317 > t_{table} = 1,679$.
2. The most dominant factor that influence the

REFERENCES

Books:

- [1] Aliman. 2000. *Modul Ekonometrika Terapan*. PAU Studi Ekonomi UGM. Yogyakarta.
- [2] Arikunto, S. 2006. *Prosedur Penelitian*. Edisi Revisi ke VI. Penerbit Rineka Cipta Jakarta.

- consultant supervisor performance on road construction project in East Borneo province is supervisor management capability on project organize factor with the coefficient value β in the amount of 0,639.
3. The strategy that must be done to increase the consultant supervisor towards the implementation time is:
 - a. The supervisor consultant have an obligatory to take intensive training (workshop) and organizing meeting at the beginning of the activity discussing about evaluation and technical specification related to the field problems and the special work item in the RAB contract.
 - b. The supervisor consultant have an obligatory to take intensive training (workshop) and organizing meeting at the beginning of the activity to discuss about the responsibility and the SOP as the supervisor consultant
 - c. The supervisor consultant have an obligatory to take intensive training (workshop) and organizing meeting at the beginning of the activity discussing about the evaluation and the contract papers along with the physical contract completeness.
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 - f. The supervisor consultant have an obligatory to take intensive training (workshop) and organizing meeting at the beginning of the activity discussing about the supervisor consultant work attendance in every quality test and the attendance system in the field eventually explain the methodology and supervision work program.

- [3] Barrie S. Donald and J.R Paulson C. Boyd. 1984. *Manajemen Konstruksi Profesional*. Edisi II. Penerbit Erlangga. Jakarta.
- [4] Cooper, R. Donald dan Emory, C. William. 1999. *Metode Penelitian Bisnis*. Alih Bahasa: Soetjipto. W dan Wikarya, U. Penerbit Erlangga. Jakarta.

- [5] Dipohusodo I. 1995. *Manajemen Proyek dan Konstruksi*. Edisi ketujuh. Penerbit Kanisius. Yogyakarta.
- [6] Djajan, Anton. 1986. *Pengantar Metode Statistik*. Jilid 1 dan 2. LP3ES. Jakarta.
- [7] Draper, N.R dan H. Smith. 1992. *Analisa Regresi Terapan* Edisi Kedua. Gramedia Pustaka Utama. Jakarta.
- [8] Eko Sugiarto. 2015. *Menyusun Proposal Penelitian Kualitatif Skripsi dan Tesis*. Suaka Media. Yogyakarta.
- [9] Ervianto, W.I. 2003. *Manajemen Proyek Konstruksi*. Penerbit Andi. Jogjakarta.
- [10] Ghozali I, M.Com, Akt. 2006. *Aplikasi Analisis Mutivariate Dengan Program SPSS*. Badan Penerbit Universitas Diponegoro. Semarang.
- [11] Gujarati, D. 1995. *Ekonometrika*. Penerbit Erlangga. Jakarta.
- [12] Husein Umar. 2007. *Metode Penelitian: Untuk Skripsi dan Tesis Bisnis*. PT. Raja Grafindo Persada. Jakarta.
- [13] Malhotra, N. K. 1996. *Marketing Research an Applied Orientation*. Prentice Hall International. London.
- [14] Nugraha, P, I. Natan dan R. Sutjipto. 1985. *Manajemen Proyek Konstruksi* Jilid I dan II. Penerbit Kartika Yudha. Surabaya.
- [15] *Peraturan Menteri Pekerjaan Umum*. No.45/PRT/M/2007. Pedoman Teknis Pembangunan Gedung Negara.
- [16] Riduwan. 2005). *Dasar –dasar Statistika*. Alfabeta. Bandung.
- [17] Santoso, S. 2001. *SPSS versi 10 Mengolah data Statistik secara Profesional*. PT. Elex Media Komputindo. Jakarta.
- [18] Singarimbun, Masri & Sofian Effendi. 2006. *Metode Penelitian Survai*. LP3ES. Jakarta.
- [19] Soeharto, I. 2001. *Manajemen Proyek Dari Konseptual Sampai Operasional*. Erlangga. Jakarta.
- [20] Sugiono. 2015. *Memahami Penelitian Kualitatif*. Alfabeta Bandung.
- [21] Sugiyono. 2006. *Statistika untuk Penelitian*. CV. ALFABETA. Bandung.
- [22] Taufiq, Amir. 2014. *Merancang Kuesioner*. Kencana.

Theses:

- [23] Sukandar. 2012. *Faktor-Faktor Yang Mempengaruhi Kinerja Konsultan Pengawas Terhadap Waktu Pelaksanaan Proyek Pembangunan Gedung Di Kota Malang*. Tesis ITN. Malang.
- [24] Yunianto, Henri. 2015. *Analisis Faktor-Faktor Kinerja Konsultan Pengawas Yang Berpengaruh Terhadap Waktu Dan Mutu Pekerjaan Proyek Peningkatan Jalan Di Kabupaten Probolinggo*. Tesis ITN, Malang.

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