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ANALYSIS OF THE EFFECT OF SUPERVISORY CONSULTANT PERFORMANCE FACTORS ON THE CONSTRUCTION OF THE TRANS STUDIO BUILDING SURABAYA

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Abstract

This study aims to determine impact of Understanding Contract Documents, Understanding of Technical Specifications, Use of Materials, Use of Labor, and Use of Equipment on the performance of supervisory consultants. This research conducted with a quantitative method. The sources of data using primary data from interviews. The research population is 70 Consultants for the Construction Project of the Trans Studi Surabaya Building with the sample being the entire population. The data analysis technique using PLS program. The results found that understanding of contract documents and technical specifications has a positive significant impact on the performance of the Supervisory Consultant. Meanwhile, the use of materials, labor and equipment has a positive significant impact on the performance of the Supervisory Consultant.

Keywords: Building Development Project, Performance, Supervisory Consultant, Technical Specifications

1. INTRODUCTION

A building is a physical form of a construction project, combined with a dwelling, partly or wholly on land or on water, as a place for people to do various activities (Law Number 28 of 2002). The success of a building construction project depends on the roles of the building stakeholders involved, one of which is the provider of consulting services. According to Yuliana (2018), Resources are a determining factor for the success of a construction project (Apdillah et al., 2022). Therefore, the Owner must choose the right Supervisory Consultant to be given the responsibility for carrying out the development.

The supervisory consultant is the party appointed by the project owner to carry out the supervisory work (Rifandy, 2021). The supervisory consultant can be a business entity or an individual. This party is responsible as a supervisor for every work process in a project, including in terms of controlling the quality of work. The performance of the supervisory consultant is used as a measurement of the level of effectiveness that connects the quality of work products and the productivity of the consultant (Sutriyono, 2017). Thus, performance is used in job descriptions, products and general characteristics and work processes. The performance of the consultant's supervision can be said to be good if the project supervision is carried out according to the owner's expectations.

There are several stages carried out by the supervisory consultant in project work. These stages are carried out properly can affect the performance of the supervisory consultant and the project work system. These stages are included in construction management which focuses on managing the Triple Constraint, namely cost, quality and time (Yuliana, 2018).

Hence, the research objectives were to analyze the effect of understanding contract documents and technical specifications, use of materials, labor and equipment on the performance of supervisory consultants.

2. THEORETICAL FOUNDATION

2.1. Project

Project is a business that produces a set of deliveries within a certain time, cost and quality (Luthan et al., 2019). A project is a unique endeavor that produces one unit of output. In general, projects involve several people whose activities are interconnected and the main project sponsor is generally interested in the effective use of resources to complete the project efficiently and on time. The project has a clear purpose or scope of work carried out, based on the technical and administrative requirements that have been prepared. The project is carried out by the project contractor on a temporary basis which will be dissolved after the project ends. While an activity that is carried out repeatedly or an activity that is a daily/routine activity, usually is not a task or activity called a project.

2.2. Project Management

According to Filastri in Agustiani, (2021) Project management is planning, leading, controlling and organizing company resources to achieve specific short-term goals, using vertical and horizontal systems and layered approach. Project management plays an important role in a company's successful execution of projects and the number of projects a company is undertaking (Utama & Bambang, 2020).

2.3. Supervisory Consultant Performance

Performance is a comparison of realization and targets on outputs, outcomes and benefits/impacts. Outputs are goods or services resulting from activities carried out to achieve the desired goals. Outcomes is anything that reflects how the outcome of the activity plays out in the project. Benefits and Impact is everything that reflects the benefits directly and indirectly after the results (outcomes) of a program can be achieved.

According to Amir (2021), several variables affecting performance supervisory consultants in implementation of project work are 1) the ability of project management supervision management, 2) quality control of work in terms of quality and quantity, 3) volume and cost control, 4) time control, 5) coordination of the preparation of implementation meeting materials, 6) mastery/understanding of the tasks and obligations listed on the TOR, 7) accuracy, speed and completeness in submitting reports and 8) work attendance.

According to Azis et al., (2016), there are several variables that affect the performance of supervisory consultants in project work, including 1) Understanding of Contract Documents, 2) Understanding of Technical Specifications, 3) Material Usage, 4) Labor Usage, 5) Usage Equipment, 6) Work Implementation Methods and 7) Local Government Regulations.

3. RESEARCH METHOD

Research uses quantitative methods with field observation. The approach used quantitative method. Type data used in this study is quantitative, because the interview include numbers from the questionnaire.

The source data using primary data. In this study using data collection through primary data sources. The primary data source used in this study is the interview. The research uses primary data from interviews with the supervisor consultant Trans Studio Surabaya Building.

The analytical technique for analyzing data and testing research hypotheses is structural equation modeling. PLS is used to prove this hypothesis. Research population is the Supervisory Consultant of the Trans Studio Surabaya building project as many as 70 people. As for the research sample taken from the entire population.

4. RESULT AND DISCUSSION

4.1. Partial Least Square Analysis

a. Outer Model

Convergent Validity

If a metric has a load factor value > 0.50, the metric is declared in the good category as valid for convergence. The following are the external loading values for all indicators on the study variables:

Table 1 Validity Test Result

Item	*OS*	*M*	*S.E*	*T Stat*	*P-V*
Understanding Contract Documents (X1)					
X1.1	0,918	0,909	0,036	25,421	0,000
X1.2	0,931	0,926	0,023	39,808	
Understanding of Technical Specifications (X2)					
X2.1	0,925	0,929	0,014	65,665	0,000
X2.2	0,778	0,754	0,095	8,203	
Material Usage (X3)					
X3.1	0,767	0,753	0,067	11,493	0,000
X3.2	0,944	0,942	0,014	67,518	
X3.3	0,893	0,890	0,030	29,923	
Labor Usage (X4)					
X4.1	0,894	0,886	0,048	18,564	0,000
X4.2	0,847	0,843	0,052	16,309	
Equipment Usage (X5)					
X5.1	0,944	0,943	0,017	55,786	0,000
X5.2	0,934	0,933	0,023	41,314	
Supervisory Consulting Performance (Y)					
Y1	0,882	0,871	0,056	15,747	0,000
Y2	0,916	0,910	0,027	33,863	
Y3	0,915	0,909	0,038	24,256	
Y4	0,889	0,878	0,043	20,659	

Based on the validity test above, all indicators are known to have convergent validity scores > 0.5, Make all indicators valid.

Discriminant Validity

To test the validity of the indicator block, discriminant validity testing is used. Cross-loading scores were used for discriminant validity tests. When compared with other variables, the cross-loading value is the largest, so it fits the criteria.

Table 2 Cross Loadings

Item	Variable					
	X1	**X2**	**X3**	**X4**	**X5**	**Y**
X1.1	0,918	0,736	0,797	0,771	0,807	0,824
X1.2	0,931	0,741	0,747	0,722	0,752	0,897
X2.1	0,793	0,925	0,777	0,698	0,662	0,841
X2.2	0,533	0,778	0,676	0,445	0,461	0,508
X3.1	0,555	0,725	0,767	0,487	0,504	0,528
X3.2	0,790	0,764	0,944	0,718	0,688	0,797
X3.3	0,797	0,747	0,893	0,761	0,720	0,794
X4.1	0,719	0,677	0,752	0,894	0,744	0,755
X4.2	0,684	0,519	0,574	0,847	0,746	0,637
X5.1	0,831	0,650	0,719	0,797	0,944	0,788
X5.2	0,746	0,615	0,675	0,807	0,934	0,730
Y1	0,795	0,743	0,669	0,686	0,688	0,882
Y2	0,883	0,737	0,799	0,785	0,812	0,916
Y3	0,837	0,766	0,748	0,745	0,741	0,915
Y4	0,839	0,718	0,759	0,675	0,667	0,889

Based on the test results, each variable index has the largest cross-loading value compared to the variables it contains. So, the research indicators state good discriminant validity

If > 0.5, the AVE value is considered satisfactory. The following are the results of the AVE test:

Table 3 AVE Score

Variable	AVE
Understanding Contract Documents	0,854
Understanding of Technical Specifications	0,731
Material Usage	0,759
Labor Usage	0,758
Equipment Usage	0,882
Supervisory Consulting Performance	0,811

The measurement results stated that all variables had an AVE value > 0.5, meaning that all variables were declared to meet criteria

Composite Reliability

The variable is said to meet composite reliability if the composite reliability value is > 0.70. The following is the composite reliability value of each variable

Table 4 Composite Reliability

Variable	*CR*
Understanding Contract Documents	0,921
Understanding of Technical Specifications	0,844
Material Usage	0,903
Labor Usage	0,862
Equipment Usage	0,937
Supervisory Consulting Performance	0,945

According to the measurement results, all variables have a reliability value > 0,70. Then all variables can be used to measure the latent variable

Cronbach Alpha

A variable is said to be reliable if the value of Cronbach's alpha is > 0,6. Here are the test results:

Table 5 Cronbach Alpha

Variable	*CA*
Understanding Contract Documents	0,830
Understanding of Technical Specifications	0,650
Material Usage	0,841
Labor Usage	0,683
Equipment Usage	0,867
Supervisory Consulting Performance	0,922

Based on the test results, it is known that the Cronbach alpha value of each research variable is > 0,60. So each research variable has high reliability.

Inner Model Test

Hypothesis analysis using PLS. The following is the result of the PLS model drawing

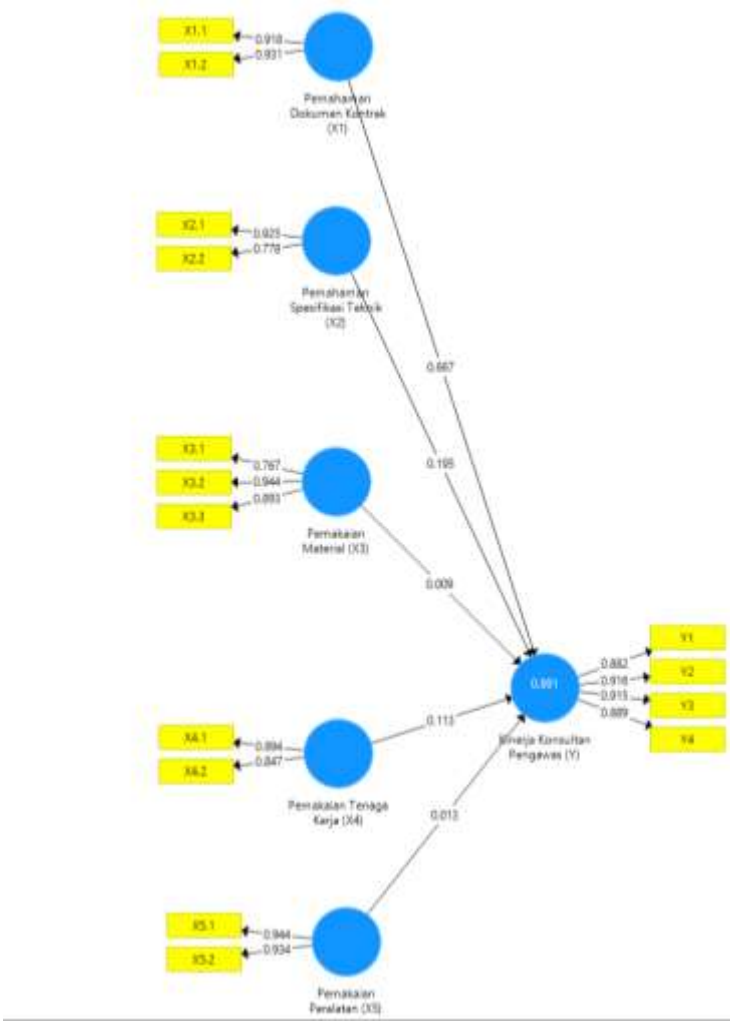

Figure 1 PLS Model

Figure 1 shows the performance of the supervisory consultant formed through understanding contract documents and technical specifications, material labor and equipment use, according to the structural equation, namely:

$$Y = 0.667\ X1 + 0.195\ X2 + 0.009\ X3 + 0.113\ X4 + 0.013\ X5$$

Hypothesis Test

To answer hypothesis, the t-stat. can be seen in Table 6 below:

Table 6 Hypothesis Testing Results

	OS	M	S.E	T Stat.
Understanding of Contract Documents (X1) -> Supervisory Consultant Performance (Y)	0,667	0,654	0,099	6,708
Understanding of Technical Specifications (X2) -> Supervisory Consultant Performance (Y)	0,195	0,202	0,080	2,454
Material Usage (X3) -> Supervisory Consultant Performance (Y)	0,009	0,012	0,101	0,092
Labor Usage (X4) -> Supervisory Consultant Performance (Y)	0,113	0,104	0,095	1,195
Equipment Usage (X5) -> Supervisory Consultant Performance (Y)	0,013	0,027	0,104	0,124

According to the hypothesis test can be stated:

1) Understanding of Contract Documents has a positive significant impact on performance of Supervisory Consultant, (Tstats. 6.708 > 1.96).
2) Understanding of Technical Specification has a positive significant impact on performance of Supervisory Consultant, (Tstats. 2.454 > 1.96).
3) The use of Materials has a positive significant impact on performance of Supervisory Consultant, (Tstats. 0.092 < 1.96).
4) Employment of Manpower has a positive significant impact on performance of Supervisory Consultant, (Tstats. 1.195 < 1.96).
5) The use of equipment has a positive significant impact on performance of the Supervisory Consultant, (Tstats. 0.124 < 1.96).

Inner Model

To evaluate the model using the evaluation of the R^2 value. For endogenous latent variables in the structural model, an R^2 score of 0,75 indicates a "strong" model, an R2 of 0,50 indicates a "moderate" model, and an R^2 of 0,25 indicates a "weak" model (Ghozali, 2016).

Table 7 Value of Inner Model (R^2)

Variable	R^2
Supervisory Consultant Performance	**0,891**

Based on the test results then Contract Document Understanding Variables, Technical Specific Understanding, Material Use, Labor Use and Equipment Use that make up the Supervisory Consultant Performance have R2 value of the performance variable was 0.891, indicating that the model "strong" and can form a Consultant Performance of 89.1%.

4.2. Discussion

4.2.1. The Effect of Understanding Contract Documents on the Performance of Supervisory Consultants

Research results found understanding of contract documents had a significant impact on the performance of supervisory consultant. Understanding of Contract Document can be a factor that affects the performance of the supervisory consultant The results of this research in line with Sutriyono (2017) who found Understanding Contract Documents has an effect on increasing or decreasing Performance of Supervisory Consultants for road projects in East Java Province.

4.2.2. The Effect of Understanding Technical Specifications on the Performance of Supervisory Consultants

Research results shows understanding of technical specifications has a significant impact on the performance of supervisory consultant. Understanding of technical specifications can be a factor that affects the performance of the supervisory consultant. The results of this study are in line with Azis et al., (2016) research who found understanding of technical specifications has a significant impact on the performance of supervisory consultants.

4.2.3. The Effect of Material Usage on the Performance of the Supervisory Consultant

Research results shows use of materials has no significant impact on the performance of the supervisory consultant. Material Usage factor can be a factor that affects the performance of supervisory consultant. Research results are supported by Putra et al., (2021) research who found the use of materials carried out by the supervisory consultant has a significant impact on performance.

4.2.4. The Effect Labor Usage on the Performance of Supervisory Consultants

Research results shows use of labor has no significant impact on the performance of the supervisory consultant. Labor Use factor can be a factor that affects the performance of the supervisory consultant. These results do not support the findings of Azis et al., (2016) who found the use of labor has a significant effect on the performance of supervisory consultants related to time and quality.

4.2.5. The Effect of Equipment Usage on the Performance of the Supervisory Consultant

Research results found that the use of equipment had no significant impact on performance of the supervisory consultant. Labor Use factor can be a factor that affects the performance of supervisory consultant. These results do not support the findings of Putra et al., (2021) who found the use of the equipment used can have a significant impact on performance of the Supervisory Consultant.

5. CONCLUSION

According to the findings and discussion above, it can be concluded that Understanding of Contract Documents has positive significant impact on Performance of Supervisory Consultants. Understanding of Technical Specifications has positive significant impact on Performance of Supervisory Consultants. Meanwhile, the use of materials has positive insignificant impact on performance of Supervisory Consultant. Likewise, the use of labor has positive insignificant impact on Performance of Supervisory Consultants. Lastly, the use of equipment has positive insignificant impact on performance of Supervisory Consultant.

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