PERFORMANCE ANALYSIS OF SUPERVISORY CONSULTANTS IN ROAD CONSTRUCTION PROJECTS IN THE PROVINCE WEST SUMATRA

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Abstract: *This research discusses the performance analysis of supervisory consultants in road construction projects in West Sumatra Province. The objectives to be achieved with this research are to identify factors that influence the performance of supervisory consultants on road construction projects in West Sumatra province, to analyze the dominant factors that influence the performance of supervisory consultants on road construction projects in West Sumatra province, and to obtain solutions. to improve the performance of supervisory consultants on road construction projects in West Sumatra province. In this research the author used a combined research method, namely by distributing questionnaires to respondents and conducting interviews with experts. The selected respondents were owners, namely the Department of Highways, Human Settlements and Spatial Planning of West Sumatra Province, consultants and contractors involved in Periodic Road Maintenance work activities in West Sumatra Province in the 2018 to 2023 Fiscal Year. The research results showed that there were 10 factors that influenced performance supervising consultants for a road construction project in West Sumatra Province and the dominant factors influencing it.*
Keywords: *Performance, Analysis, Supervisory Consultants, Road Construction, West Sumatra*

A. Introduction

Supervisory consultants are one example of a company that offers services in the production process. The quality of the services offered by supervisory consultants is not always assessed from the final product, namely in the form of a supervision report, but also from the supervision process during the implementation period. Customers in this context are parties who use products, in the form of services, offered by supervisory consultants. The customer, as the party who will enjoy and pay for the final results of the supervisory consultant service process, of course has his own perspective on what will be paid later (Abas, 2021).

Supervising consultants have a very important role in assisting project owners, especially in terms of monitoring construction implementation, both in terms of human resources, costs, time and project quality. The project management system capability of the field supervisory consultant is largely determined by the performance of each personnel, namely Team Leader, Engineer, and Suprof, in addition to the ability to manage all activities and resources (Yoneda, 2023).

The problem of involving supervisory consultants is very important in the implementation of road project construction. Supervising consultants assist in controlling the implementation of work, organizing the administration of construction service providers and can establish communication links between the owner, the contractor as the construction service provider and related agencies, so that each work implementation can produce good and quality productivity. This goal will be achieved if the performance of the supervisory consultant is able to adapt to field and work conditions (Yoneda, 2023).

In the Department of Highways, Human Settlements and Spatial Planning of West Sumatra Province for the 2018 to 2023 Fiscal Year, many projects were found to be experiencing delays. In 2018 there were 15 periodic maintenance packages for provincial roads, of the 15 work packages there were 3 work packages which experienced delays. In 2019 there were 61 periodic maintenance packages for provincial roads, there were 11 work packages which experienced delays, in 2020 there was 1 maintenance package Provincial Road Periodic, nothing is late. In 2021 there are 9 Provincial Road Periodic Maintenance packages, of these 9 work packages there are 2 work packages that are

delayed. The cause of the delay was due to a lack of control from the supervising consultant during the implementation of the work, one of which was planning the use of materials, many of the materials used did not comply with the contract specifications, so the work was dismantled and reworked. Meanwhile, in 2022 there will be 12 provincial road periodic maintenance work packages, of these 12 work packages there are 3 work packages that are experiencing delays. The cause of the delay is the lack of experience of the supervisory consultant in supervising the project so that when problems occur, it takes a long time to make decisions. The supervising consultant does not check all quantities and volumes of measurement results for each job that has been completed properly, which results in inaccurate measurement results. For 2023 there are 6 road maintenance packages, but all can be completed on time (Source: Department of Highways, Cipta Karya and Spatial Planning, 2023).

In road construction projects in the province of West Sumatra, many problems were found in the field starting from delays in completing the work, apart from that the quality of the work was still low and did not comply with contract specifications. A development project will achieve success if there is reliable supervision of the progress of the development being implemented (Abas, 2021).

From the results of field observations and interviews with the Head of road maintenance for the Department of Highways, Cipta Karya and Spatial Planning of West Sumatra Province, one of the causes of project delays was related to the low performance of the supervisory consultant. It can be seen from the personnel placed in the field that many do not have the experience required in the offer. So when problems occur in the field they are slow in making decisions and do not provide much input during the implementation of the work. Apart from that, the problem that is often found in the field related to the low performance of supervisory consultants is that there are several consultants who have inadequate human resources or knowledge and do not master technical specifications in the field, implementation processes in the field, and project administration from contracts to PHO.

B. Methods

In this research the author used a combined research method, namely by distributing questionnaires to respondents and conducting interviews with experts. The respondents selected were the owners, namely the Department of Highways, Human Settlements and Spatial Planning of West Sumatra Province, consultants and contractors involved in Periodic Road Maintenance work activities in West Sumatra Province in the 2018 to 2023 Fiscal Year. using a non-probability sampling method (no-random sample), namely a saturated sampling technique. The research population consisted of consultants, contractors and owners. The number of respondents taken was 116 people. The selection of 116 respondents was due to the fact that 19 work packages were delayed. All personnel involved in the 19 work packages were used as research respondents, and were taken based on the perceptions of the owner, contractor and supervisory consultant.

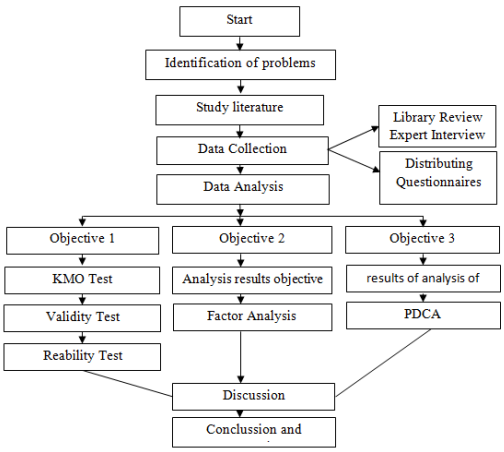

Figure 1. Research Methodology Flow Diagram

C. Results and Discussion

First Goal Data Analysis

Assumption Test / KMO (Kaiser Mayer Oiken) and Bartlett's

To find potential causes that form the main problem, tests are carried out KMO (Kaiser Mayer Oiken) and Bartlett's which is useful for determining the feasibility of each variable to be tested.

Table 1. Uji KMO (Kaiser Mayer Oiken) and Bartlett's

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.805
Bartlett's Test of Sphericity	Approx. Chi-Square	3833.967
	Df	1081
	Sig.	.000

The test results are shown in Table 1. above the values found *KMO and Bartlett's Test of Sphericity is 0*.805 is above 0.50 with a significance of 0.000 which is below 0.05, thus it can be stated that the sample has met the requirements and the analysis can continue.

Second Objective Data Analysis

Factor Analysis

Measure Of Sampling Adequacy (MSA)

The results of the factor analysis carried out obtained the Measure of Sampling Adequacy (MSA) value. Of the 49 variables, 47 variables produced MSA values above 0.50 and there were 2 variables below 0.50, namely X3.21 and Of the 47 variables, the MSA value was above 0.50. All variables are valid and can be tested further for analysis.

Communalities

The next step is communalities, this research effort is to determine whether the variables can be grouped into one or several factors. So, the 47 variables that have been obtained from the Measure of Sampling Adequacy (MSA) value in the anti image matrix table will be simplified into one or several factors. Based on the results of the analysis that has been carried out, a summary of the results is found as shown in Table 2,

Table *2*. Communalities

	Initial	Extraction		Initial	Extraction
X1.1	1.000	.777	X3.1	1.000	.701
X1.2	1.000	.735	X3.2	1.000	.759
X1.3	1.000	.730	X3.3	1.000	.705
X1.4	1.000	.629	X3.4	1.000	.695
X1.5	1.000	.678	X3.5	1.000	.623
X1.6	1.000	.782	X3.6	1.000	.810
X1.7	1.000	.674	X3.7	1.000	.660
X1.8	1.000	.687	X3.8	1.000	.637
X1.9	1.000	.711	X3.9	1.000	.706
X1.10	1.000	.724	X3.10	1.000	.698
X1.11	1.000	.808	X3.11	1.000	.794
X1.12	1.000	.759	X3.12	1.000	.597
X1.13	1.000	.648	X3.13	1.000	.729
X1.14	1.000	.553	X3.14	1.000	.788
X2.1	1.000	.666	X3.15	1.000	.846
X2.2	1.000	.604	X3.16	1.000	.746
X2.3	1.000	.539	X3.17	1.000	.771

X2.4	1.000	.573
X2.5	1.000	.809
X2.6	1.000	.674
X2.7	1.000	.691
X2.8	1.000	.801
X2.9	1.000	.609
X2.10	1.000	.771
X2.11	1.000	.758

X3.18	1.000	.713
X3.19	1.000	.794
X3.24	1.000	.679
X3.25	1.000	.808
X3.26	1.000	.703

Extraction Method: Principal Component Analysis.

From Table 2 above, 47 variables have a correlation coefficient value of > 0.50 which can explain the factors formed, provided that the greater the communalities value, the closer the relationship between the variables in question and the factors formed.

Explaining the Variance Value (Total Variance Explained)

Based on the analysis that has been carried out, a summary of the results is found as shown in Table 3.

Table 3. Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	13.019	27.701	27.701	13.019	27.701	27.701	6.264	13.327	13.327
2	4.390	9.341	37.042	4.390	9.341	37.042	4.532	9.642	22.969
3	3.514	7.476	44.518	3.514	7.476	44.518	3.646	7.756	30.725
4	3.007	6.398	50.916	3.007	6.398	50.916	3.539	7.530	38.255
5	2.090	4.447	55.363	2.090	4.447	55.363	3.527	7.504	45.759
6	1.736	3.694	59.057	1.736	3.694	59.057	2.743	5.836	51.595
7	1.576	3.354	62.411	1.576	3.354	62.411	2.466	5.246	56.841
8	1.514	3.221	65.632	1.514	3.221	65.632	2.333	4.963	61.804
9	1.395	2.968	68.600	1.395	2.968	68.600	2.264	4.818	66.621
10	1.107	2.356	70.956	1.107	2.356	70.956	2.037	4.335	70.956
11	.981	2.087	73.044						
12	.952	2.025	75.069						
13	.912	1.940	77.010						
14	.755	1.607	78.616						
15	.703	1.496	80.113						
16	.658	1.401	81.513						
17	.641	1.365	82.878						
18	.618	1.315	84.193						
19	.570	1.214	85.407						
20	.555	1.181	86.588						
21	.509	1.082	87.670						
22	.505	1.074	88.744						
23	.440	.935	89.679						
24	.421	.895	90.574						
25	.403	.857	91.431						
26	.373	.794	92.225						

27	.348	.740	92.966						
28	.317	.674	93.640						
29	.297	.633	94.273						
30	.274	.583	94.855						
31	.266	.566	95.422						
32	.248	.529	95.950						
33	.227	.482	96.433						
34	.224	.477	96.910						
35	.183	.389	97.299						
36	.153	.326	97.625						
37	.151	.321	97.946						
38	.144	.306	98.252						
39	.125	.266	98.518						
40	.118	.251	98.769						
41	.115	.244	99.013						
42	.103	.219	99.232						
43	.088	.187	99.419						
44	.083	.177	99.596						
45	.069	.147	99.744						
46	.068	.145	99.889						
47	.052	.111	100.000						

Extraction Method: Principal Component Analysis.

From Table 3 it can be seen that the variables analyzed can be grouped into 10 factors, namely those that have eigen values that show a number greater than one. Thus there are 10 factors formed. A correlation figure below 0.50 indicates a weak correlation, while above 0.50 indicates a strong correlation.

Matrix Rotation Analysis

Based on the results of the tests that have been carried out, 47 items can be seen that will form the factors that cause delays in implementing road construction projects in West Sumatra province, as shown in Table 4.

Table 4. Rotated Component Matrix

Rotated Component Matrix[a]										
	Component									
	1	2	3	4	5	6	7	8	9	10
X1.1	.152	.200	.060	.060	.054	.820	.012	.078	.117	.111
X1.2	.533	.294	-.084	-.070	.093	.552	-.067	.047	.014	.176
X1.3	.657	.347	.136	.162	.063	.284	-.038	.079	.110	.169
X1.4	.236	.184	-.117	.209	-.080	.450	.280	.040	.170	-.406
X1.5	.678	-.022	-.209	.130	.069	.300	.169	-.056	.174	.024
X1.6	.746	-.007	-.283	.305	.121	.080	.085	.080	.133	.024
X1.7	.670	.097	-.041	.340	.191	.046	-.083	.200	.103	.052
X1.8	.112	.074	.129	.155	-.092	.141	.771	-.069	.001	.003
X1.9	.114	.074	-.017	.694	-.062	.017	.440	-.091	.001	.070
X1.10	-.130	.007	.003	.223	.066	-.002	.739	.235	.114	.194
X1.11	.451	.066	-.085	-.035	.655	.024	.265	.171	.095	.230
X1.12	.184	.209	.055	-.064	.806	-.023	-.105	-.031	.060	.090

X1.13	.242	-.050	.248	-.097	.598	.111	-.022	.272	.137	.231
X1.14	.125	.589	.128	.070	.338	-.035	-.024	.057	.222	.039
X2.1	.646	.073	.079	.138	.416	.114	.020	.138	.083	-.066
X2.2	.120	.041	-.230	.223	.091	.406	.207	.210	-.191	-.434
X2.3	.488	.264	-.135	.007	.105	.141	.063	.412	.076	-.049
X2.4	.658	.132	-.138	.048	.135	-.015	.009	.277	-.010	.074
X2.5	.082	.034	-.073	.866	-.055	.099	-.030	.162	-.057	.039
X2.6	.166	.143	-.029	.768	-.135	-.050	.109	.006	-.052	-.022
X2.7	.554	.042	-.150	.542	.107	.100	.081	.016	.184	-.057
X2.8	.111	.007	-.180	.812	-.081	.042	.101	.127	.241	-.065
X2.9	.197	.239	.011	.184	.080	.053	.121	.149	.657	.021
X2.10	.266	.219	-.084	-.027	.034	.153	.038	.020	.786	.030
X2.11	.633	.057	-.172	.063	.268	.062	-.064	.012	.490	-.028
X3.1	.355	.056	.009	.175	.170	.061	.182	.564	.385	.092
X3.2	.248	.209	.046	.118	.110	.189	-.003	.766	.043	.039
X3.3	.525	.238	-.132	-.001	.161	-.044	-.079	.493	.196	.199
X3.4	.109	.382	-.176	.142	-.138	-.058	.362	.574	-.052	-.015
X3.5	.229	.570	-.066	.007	.026	.043	.413	.231	.110	-.049
X3.6	.502	.403	-.231	-.122	.241	.043	.331	.112	.369	-.097
X3.7	.492	.396	-.253	-.058	.143	.073	.346	.196	.087	-.047
X3.8	.022	.716	-.098	.193	.074	.044	.188	.098	.126	.095
X3.9	.215	.779	.078	-.001	-.007	.135	-.015	.089	-.013	.144
X3.10	.325	.455	-.185	-.082	.336	.210	-.183	.139	.339	.141
X3.11	-.344	.632	-.070	-.073	.027	.322	-.070	.088	.325	.206
X3.12	.187	.599	-.097	.116	.214	.307	-.051	.144	.123	.035
X3.13	-.024	.386	-.167	.121	-.122	.101	.353	.097	.041	.613
X3.14	.185	.545	-.263	.207	.054	.119	.093	-.003	-.043	.563
X3.15	.303	.353	-.121	-.079	.120	.188	.139	.178	.053	.711
X3.16	-.166	-.092	.825	-.056	.058	-.088	.024	.087	-.020	-.074
X3.17	-.136	-.090	.853	-.007	.020	-.123	.019	-.009	-.002	-.015
X3.18	-.076	-.035	.813	-.105	-.043	.141	.022	-.099	-.048	-.014
X3.19	-.091	.062	.867	-.131	.032	-.013	-.015	-.078	-.065	-.042
X3.24	.399	.020	-.087	-.074	.695	.099	.072	.045	.056	-.054
X3.25	-.013	.173	-.012	-.101	.828	.113	-.086	-.025	-.035	-.244
X3.26	.102	.082	-.034	.007	.116	.810	.098	.035	.070	.009

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.
a. Rotation converged in 11 iterations.

From Table 4. *rotated component matrix* above, the variable value taken > 0.50 is said to influence the factor or is also called forming factor. There are several variable values above <0.50, namely X1.4, X2.2, X2.3, X3.7, and X3.10 so they are not included in each factor. Then table *rotated component matrix* serves to clarify which variables are included in each factor. Many loading factors experience rotation to become smaller or larger.

Table 5. New Factor Grouping Based on Factor Analysis

Factor	Code Variable	Variable
Factor 1 Duties and responsibilities	X1.3	Carry out regular inspections and check work at all work locations in the contract and make reports to the PPK regarding the results of field inspections
	X1.5	Coordinate the recording of work progress achieved by Construction Work Service Providers every day on the approved work progress sheet (progress schedule).
	X1.6	Monitor and evaluate work progress and immediately report to PPK if there is work progress that is not in accordance with the Contract Documents
	X1.7	Check all quantities and volume measurements of each completed job
	X2.1	Manage/manage construction contracts in accordance with the Letter of Delegation of Authority from the Service User
	X2.4	Examine Construction Provider documents including Quality Control Plans, Traffic Management Plans (RMKL), Construction Occupational Safety and Health Plans (RK3K), Environmental Management and Monitoring Work Plans (RKPPL), etc. in accordance with the provisions of the Construction Work Contract
	X2.7	Monitor social aspects in the implementation of Construction Works, focusing on resettlement issues (if any), gender equality and social inclusion;
	X2.11	Issue instructions to the Construction Provider in accordance with the authority of the Supervising Consultant based on the Letter of Delegation of Authority from the Service User
	X3.3	Determine the Waiting Point to ensure that the previous work stage complies with technical provisions and can be continued with the next work stage
	X3.6	Check and approve all drawings and work plans used in carrying out work according to the contract, for permanent and temporary work
Factor 2 Understanding Technical Specifications	X1.14	Maintain archives of design drawings and compile activity correspondence, daily reports, weekly reports, work progress reports and payment measurements
	X3.5	Prepare, present, discuss, submit, implement, control, revise, update the Quality Program to guarantee the quality of work implementation, to obtain PPK approval
	X3.8	Evaluate and approve the Construction Provider's Construction Work Quality Plan
	X3.9	Give permission to start each stage of work
	X3.11	Inspect and assess the quality and safety of construction compared to the final results of the work
	X3.12	Stop any work that does not comply with the provisions
Factor 3	X3.16	Check and measure work quantity;

Supervision of Work Implementation	X3.17	Check and assess work schedules and work methods
	X3.18	Prepare reports on work results that do not meet requirements (non-compliance reports)
	X3.19	Provide written warnings and instructions to the work supervisor if there are deviations from the contract documents
4Managerial Factors	X1.9	Provide recommendations to the PPK regarding the quality, volume and amount of work that has been completed and check the correctness of each proof of monthly payment for the Construction Work Service Provider
	X2.5	Carry out daily supervision of all activities in the construction process, including material testing practices and procedures, to ensure compliance with the implementation and quality of work according to contract provisions and engineering specifications;
	X2.6	Monitor Environmental, Health and Safety aspects in the implementation of Construction Work;
	X2.8	Check material and quality testing by Construction Suppliers, non-compliance, environmental, progress reports and other reports;
Factor 5 Coordination and Communication of Supervisory Consultants	X1.11	Provide recommendations to the PPK regarding the achievement of quality and work results in accordance with the Construction Work Contract Documents regarding payment proposals submitted by the Construction Work Service Provider
	X1.12	Coordinate the preparation of reports regarding the physical and financial progress of construction work under his authority and submit them to the PPK
	X1.13	Supervise and check the production of as-built drawings and ensure that all drawings can be completed before the first handover (provisional hand over)
	X3.24	Reject the implementation and results of construction work that does not comply with specifications
	X3.25	Carrying out, checking and assessing Construction Provider reports
Factor 6 Human Resources	X1.1	Coordinate all construction supervision personnel for each field measurement or engineering implementation
	X1.2	Carefully check each work drawing and analysis/calculation of construction and quantity
	X3.26	Prepare and deliver periodic reports
Factor 7 Examination	X1.8	Guarantee that before the Construction Work Service Provider is permitted to carry out subsequent work, previous work that will be covered or invisible must have been inspected/tested and have met the requirements in the Construction Work Contract Document
	X1.10	Coordinate calculations and make correct sketches with the PPK at each work location for consideration in decision making/approval
Factor 8	X3.1	Checking, evaluating and assigning Monthly Certificates

Authority	X3.2	Evaluate and issue approval to the Construction Provider's proposal regarding contract variations that do not have financial implications
	X3.4	Give written approval to each stage of work based on the plan and method of work implementation
Factor 9 Project Administration	X2.9	Check proposed changes/variations to the Contract, and claims from the Construction Provider
	X2.10	Prepare non-compliance reports, monthly reports, and other reports
Factor 10 Job Evaluation	X3.13	Responsible for the results of construction implementation in accordance with his duties and responsibilities
	X3.14	Check and provide recommendations regarding the preparation and updating of the Construction Provider's QCP
	X3.15	Inspect and test the quality of materials and work

From Table 5 above, it can be seen that there are 10 new factors that were formed and consist of several variables after carrying out factor analysis, namely Factor 1 (Duties and Responsibilities), Factor 2 (Understanding of Technical Specifications), Factor 3 (Supervision of Work Implementation), Factor 4 (Managerial), Factor 5 (Supervisory Consultant Coordination and Communication), Factor 6 (Human Resources), Factor 7 (Inspection), Factor 8 (Authority), Factor 9 (Project Administration), Factor 10 (Evaluation Work).

Dominant Factor

Based on factor analysis, the dominant factors that influence the performance of supervisory consultants on road construction projects in West Sumatra province are obtained, which can be seen from the % of variance Rotation Sum of Squared Loadings value on the 10 factors formed, namely Factor 1 (Duties and Responsibilities) % of value. The resulting variance was 13.327%, Factor 2 (Understanding of Technical Specifications) 9.642%, Factor 3 (Supervision of Work Implementation) 7.756%, Factor 4 (Managerial) 7.530%, Factor 5 (Supervisory Consultant Coordination and Communication) 7.504%, Factor 6 (Human Resources) 5.836%, Factor 7 (Inspection) 5.246%, Factor 8 (Authority) 4.963%, Factor 9 (Project Administration) 4.818%, Factor 10 (Job Evaluation) 4.335%. So the Dominant factor is Factor 1 (Duties and Responsibilities).

Table 6. Rotation Sum of Squred Loadings

Rotation Sums of Squared Loadings	
Component	% of Variance
1	13,327
2	9,642
3	7,756
4	7,530
5	7,504
6	5,836
7	5,246
8	4,963
9	4,818
10	4,335

The dominant factor table above is taken from Table 3 Total Variance Explained, namely % of variance, Rotation Sum of Squared Loadings.

Solutions to Improve the Performance of Supervisory Consultants on Road Construction Projects in West Sumatra Province

Based on literature studies, in searching for solutions to improve the performance of supervisory consultants on road construction projects in West Sumatra province based on the results of the dominant factors obtained, namely Factor 1 (Duties and Responsibilities) using the PDCA (Planning, Do, Check, Actuating) method. , is:

A. Planning
   Provide instructions to construction providers to prepare job sites.
B. Do
   1) Coordinating with Construction Providers.
   2) Checking Construction Supplier documents in accordance with the provisions of the Construction Work Contract.
C. Check
   1) Check all drawings and work plans that will be used in carrying out the work in accordance with the Technical Specifications.
   2) Check the previous work stage to see whether it complies with the technical provisions so that it can be continued to the next work stage.
D. Actuating
   1) Evaluate work progress.
   2) Carrying out regular work inspections and preparing work reports.
   3) Check the measurement results of each completed job.

Discussion

Factors that influence the performance of supervisory consultants on road construction projects in West Sumatra Province

The results of the research conducted contained 10 factors that influence the performance of supervisory consultants on road construction projects in West Sumatra Province, namely Factor 1 (Duties and Responsibilities), Factor 2 (Understanding of Technical Specifications), Factor 3 (Supervision of Work Implementation), Factor 4 (Managerial), Factor 5 (Supervisory Consultant Coordination and Communication), Factor 6 (Human Resources), Factor 7 (Inspection), Factor 8 (Authority), Factor 9 (Project Administration), Factor 10 (Job Evaluation).

Dominant Factors That Influence the Performance of Supervisory Consultants on Road Construction Projects in West Sumatra Province

The most dominant factor influencing the performance of supervisory consultants on road construction projects in West Sumatra Province is Factor 1 (Duties and Responsibilities) which consists of several variables, namely 1) Carrying out regular inspections and checking work at all work locations in the contract and making reports to PPK regarding the results of field inspections; 2) Coordinate the recording of work progress achieved by Construction Work Service Providers every day on the approved progress schedule; 3) Monitor and evaluate work progress and immediately report to PPK if there is work progress that is not in accordance with the Contract Documents; 4) Check all quantities and volumes of measurement results for each completed job; 5) Manage/manage construction contracts in accordance with the Letter of Delegation of Authority from the Service User; 6) Check Construction Provider documents including Quality Control Plans, Traffic Management Plans (RMKL), Construction Occupational Safety and Health Plans (RK3K), Environmental Management and Monitoring Work Plans (RKPPL), etc. in accordance with the provisions of the Construction Work Contract; 7) Monitor social aspects in the implementation of Construction Works, focusing on resettlement issues (if any), gender equality and social inclusion; 8) Issue instructions to the Construction Provider in accordance with the authority of the Supervising Consultant based on the Letter of Delegation of Authority from the Service User; 9) Determine the Waiting Point to ensure

that the previous work stage complies with technical provisions and can be continued with the next work stage; 10) Check and approve all drawings and work plans used in carrying out work according to the contract, for permanent and temporary work.

Solutions to Improve the Performance of Supervisory Consultants on Road Construction Projects in West Sumatra Province

Solutions implemented to improve the performance of supervisory consultants on road construction projects in West Sumatra Province. Based on the results of the dominant factors obtained, namely Factor 1 (Duties and Responsibilities), namely using the PDCA method, are: A) Planning; Provide instructions to construction providers to prepare work sites.B) *Do*;Coordinating with Construction Providers; Checking Construction Supplier documents in accordance with the provisions of the Construction Work Contract. C) *Check* ; Check all drawings and work plans that will be used in carrying out the work in accordance with the Technical Specifications; Check the previous work stage to see whether it complies with the technical provisions so that it can be continued to the next work stage. D) Actuating; Evaluate work progress, carry out regular work checks and make work reports, check the measurement results of each completed work.

D. Conclusions

From the analysis stages, analysis results and research discussions, research conclusions can be drawn regarding factors influencing the performance of supervisory consultants on road construction projects in West Sumatra Province, namely as follows:

1. The results of the research conducted show 10 factors that influence the performance of supervisory consultants on road construction projects in West Sumatra Province, namely Factor 1 (Duties and Responsibilities), Factor 2 (Understanding of Technical Specifications), Factor 3 (Supervision of Work Implementation), Factor 4 (Managerial), Factor 5 (Supervisory Consultant Coordination and Communication), Factor 6 (Human Resources), Factor 7 (Inspection), Factor 8 (Authority), Factor 9 (Project Administration), Factor 10 (Job Evaluation).
2. The most dominant factor that influences the performance of supervisory consultants on road construction projects in West Sumatra Province is Factor 1 (Duties and Responsibilities).
3. The solutions taken to improve the performance of supervisory consultants on road construction projects in West Sumatra Province based on the results of the dominant factors obtained, namely Factor 1 (Duties and Responsibilities), namely by using the PDCA method, are: A) Planning; Provide instructions to construction providers to prepare job sites. B) *Do*; Coordinating with Construction Providers; Checking Construction Supplier documents according to the provisions of the Construction Work Contract. C) *Check*; Check all drawings and work plans that will be used in carrying out the work in accordance with the Technical Specifications; Check the previous work stage to see whether it complies with the technical provisions so that it can be continued to the next work stage. D) Actuating; Evaluate work progress, carry out regular work checks and make work reports, check the measurement results of each completed work.

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