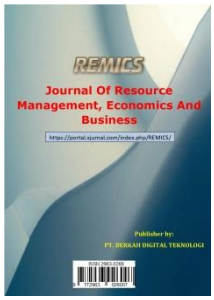

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PT. BERKAH DIGITAL TEKNOLOGI

REMICS

INVESTIGATING THE IMPACT OF WORK DISCIPLINE, WORK ABILITY, AND WORK SUPERVISION ON EMPLOYEE WORK EFFECTIVENESS IN ROAD MAINTENANCE AND IMPROVEMENT WITHIN THE PUBLIC WORKS SERVICE AND SPATIAL PLANNING OF CIREBON REGENCY

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Abstract

Purpose: To investigate the impact of work discipline, work ability, and work supervision on employee work effectiveness in the field of road maintenance and improvement at the Public Works Service and Spatial Planning of Cirebon Regency.

Research Methodology: Quantitative method, descriptive analysis, validity test, reliability test, normality test, multicollinearity test, heteroscedasticity test, multiple linear regression, hypothesis testing with partial regression test (t test).

Results: Work discipline, work ability, and work supervision positively influence employee work effectiveness.

Limitations: Limited sample size of 60 employee respondents.

Contribution: Provides insights for enhancing work effectiveness in road maintenance and improvement services in public works and spatial planning contexts.

Keywords: *Work Discipline, Work Ability, Work Supervision, Employee Work Effectiveness .*

1. INTRODUCTION

Indonesia as a developing country is experiencing an increase in the intensity of social, economic, cultural and environmental activities. As the population increases in an area, community activities become the main factor generating travel demand which requires a level of efficiency, safety and comfort when traveling. The increase in the number of movements that occur will also require the quality and quantity of infrastructure to be balanced, through a regional development approach to achieve balance and equitable development between regions, forming and strengthening national unity to strengthen national defense and security, as well as forming a spatial structure in order to realize national development targets, as written in Law Number 38 of 2004 concerning Roads in Article 16 paragraph 3 states that the

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authority to administer district roads, city roads and village roads includes regulation, guidance, development and supervision.

Sooner or later a decline in the level of service will the road be marked by damage to the road, the damage that occurs also varies in each segment along the road if left for a long period of time, it will further worsen the condition of the road itself and can affect security, comfort and smoothness in social activities and traffic. Generally construction roads are planned to have a certain service life plan according to existing traffic needs and conditions, for example 3 to 6 years, with the hope that the road will still be able to serve traffic with a level of service in good condition , to achieve service in good condition during the life of the plan, ongoing monitoring and maintenance of the road is required.

Maintaining the quality of road services is one of the objectives of the planning that has been determined. This work planning is one of the outputs of the performance of employees in the Road Maintenance & Improvement Division of the Cirebon Regency Public Works and Spatial Planning Service. Reviewing employee performance is of course closely related to work discipline, work ability and work supervision as input for employee work effectiveness, which is an organizational or service goal. Supervision is said to be one of the crucial issues considering that the problems related to this matter never end. The spotlight on the low performance of the apparatus almost never stops. Of course, there are many things that cause this condition to occur. One of the basic things that needs to be highlighted is the government's ability to carry out its duties and functions.

Road infrastructure is a public facility whose existence must be felt by all levels of society, so as a consequence the right to control and the authority to procure road infrastructure is generally carried out by the government and it is hoped that each region will be able to develop a service delivery system to the community that is more sensitive to the needs of the local community. One of the development areas whose implementation is handed over to the regions is in accordance with Law no. 38 of 2004 is in the field of public works, including regarding district roads. The creation of a road transportation system that guarantees the smooth, safe, fast and comfortable movement of people and goods is a desired goal in the road infrastructure sector.

One of the infrastructures most frequently used by the community is roads which have a huge function for daily activities. Therefore, it is very necessary to have road conditions that are in line with community expectations. The existence of good roads will make things easier for people in all aspects of life, therefore in general, employees are really needed here who can be effective and efficient.

Therefore work effectiveness is the ability to choose the right goals or the right equipment to achieve the set goals . The effectiveness of employee work is important for every organization to pay attention to because employees are the main factor in the work process which will ultimately make the work results of an agency as a whole run well or not. In Setiawan and Kartika's research (2014:1477) it is known that there are still several a pa employees who do not have high performance, characterized by several things, including: employees have not been able to complete their tasks correctly and quickly, the employee is not yet willing to comply with the regulations in force in the agency, the employee is not yet able to work within the specified time, the employee is not yet able to collaborate with other employees in completing work or a task determined by the agency.

2. LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

2.1. Literature Review

The impact of work discipline, work ability, and work supervision on employee work effectiveness has been a topic of interest in organizational research. Work discipline is often

regarded as a key factor in employee performance and is linked to increased productivity and efficiency (Robbins & Judge, 2018). According to Crane and Matten (2016), work discipline plays a crucial role in shaping employee behavior and ensuring adherence to organizational norms and standards. Work ability, on the other hand, is essential for employees to perform their tasks effectively. Ilmarinen et al. (2010) emphasize the importance of work ability in maintaining employee well-being and job satisfaction, which are closely tied to overall work effectiveness.

Supervision in the workplace has been shown to have a significant impact on employee performance. Effective supervision can enhance employee motivation, job satisfaction, and overall work effectiveness (Lam & Schaubroeck, 2000). Proper supervision provides employees with guidance, support, and feedback, leading to improved job performance and organizational outcomes. By investigating the combined influence of work discipline, work ability, and work supervision on employee work effectiveness, this study contributes to the existing literature on organizational behavior and human resource management

2.2. Hypothesis Development

Based on the literature reviewed, the following hypotheses are proposed for this study:

Hypothesis 1 (H1): There is a positive relationship between work discipline and employee work effectiveness.

This hypothesis is supported by the findings of previous studies indicating that a higher level of work discipline is associated with increased employee performance and productivity (Robbins & Judge, 2018; Crane & Matten, 2016).

Hypothesis 2 (H2): Work ability positively influences employee work effectiveness.

The literature suggests that employees with higher work ability are likely to exhibit better job performance and contribute more effectively to organizational goals (Ilmarinen et al., 2010).

Hypothesis 3 (H3): Effective work supervision enhances employee work effectiveness.

Past research has shown that supportive and effective supervision positively impacts employee motivation and job satisfaction, leading to improved work outcomes (Lam & Schaubroeck, 2000).

These hypotheses will be tested to determine the extent to which work discipline, work ability, and work supervision influence employee work effectiveness in the context of road maintenance and improvement services.

3. RESEARCH METHODOLOGY

The data collection technique used in this research is by using questionnaires and interviews . The scale used in measuring data is the Likert scale, according to (Sugiyono, 201 5) the Likert scale is used to measure attitudes, opinions and perceptions of a person or group of people about social phenomena. The Likert scale is used because this scale is the attitude measurement technique most widely used in marketing research. By using Likert scale , the variables to be measured are broken down from variables into dimensions, from dimensions into indicators,

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from indicators into sub-indicators that can be measured. Finally, sub-indicators can be used as benchmarks to create a question or statement that needs to be answered by the respondent. Answers from instruments that use a Likert scale have a gradation from very positive to very negative, which can be in the form of words including:

Strongly agree (SS) with the score 5
Agree (S) with the score 4
Undecided (RR) with score 3
Disagree (TS) with score 2
Strongly disagree (STS) with a score 1

Data Analysis Techniques

The data analysis technique used in this research is:

a. Descriptive Analysis

Descriptive analysis is used to analyze data by describing or illustrating the data that has been collected as it is without intending to make general conclusions or generalizations. In the descriptive analysis technique there is no significance test, there is no level of error, because the researcher does not intend to make generalizations, so there is no generalization error. (Sugiyono, 2021).

b. Quantitative Analysis

Multiple Linear Regression; This research uses multiple linear analysis. The multiple linear regression model aims to predict what the condition will be (up and down) of the dependent variable, if two or more independent variables are manipulated (increasing and decreasing their values). So multiple linear regression analysis will be carried out if the number of independent variables is at least two (Sugiyono, 2015 :277).

Partial Regression Test (t test); This analysis is used to determine whether the independent variables work discipline, work ability, and work supervision partially have an influence or not on the dependent variable, namely employee work effectiveness . The steps are as follows:

1. Determining Hypothesis
   H0: There is no significant influence of the independent variable partially on the dependent variable.
   Ha: There is a significant influence of the independent variable partially on the dependent variable.
2. The significance level uses alpha (α) = 5% with df = (N-1) .
3. Comparing the calculated t value with t table If t calculated > t table and t calculated ≤ -t table then H0 is rejected and Ha is accepted. If t count ≤ t table and t count > -t table then H0 is accepted and Ha is rejected.
4. Conclusions are based on decisions regarding acceptance or rejection of a hypothesis.

4. RESULTS AND DISCUSSIONS

4.1. Results

a. Results Validity Test

The instrument was tested on a sample from a population of 60 people. To carry out validity testing, researchers distributed questionnaires to 60 respondents to ensure whether there were valid or invalid question items for each sub-variable using software SPSS version 22.0.

Table 1. Validity Test Results Research Instrument

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Question	R Count	R Table	Ket
Work Discipline Variable (X1)			
1	0.751	0,218	Valid
2	0.785		
3	0.832		
4	0.791		
5	0.684		
6	0.596		
7	0.788		
8	0.751		
9	0.602		
10	0.730		
Work Ability Variable (X2)			
1	0.818	0,218	Valid
2	0.836		
3	0.873		
4	0.839		
5	0.817		
6	0.706		
7	0.816		
8	0.846		
9	0.785		
10	0.671		
Work Supervision Variable (X3)			
1	0.815	0.218	Valid
2	0.869		
3	0.731		
4	0.658		
5	0.806		
6	0.844		
7	0.772		
8	0.630		
9	0.836		
10	0.836		
Work Effectiveness Variable (Y)			
1	0.794	0.218	Valid
2	0.842		
3	0.883		
4	0.619		
5	0.859		
6	0.730		

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Question	R Count	R Table	Ket
7	0.739		
8	0.688		
9	0.790		
10	0.794		

Source: Questionnaire data processed

Based on the SPSS calculation results, variables X and Y are stated in the questionnaire with 40 questions. Where 30 questions are for variable X and 10 questions are for variable Y. These questions are asked to 60 respondents. The results of these calculations, can be interpreted as meaning that all statement items used as instruments in this research are valid. And suitable for use in this research .

b. Results Test Reliability

The aim of the reliability test is to determine the extent to which a measuring instrument can be trusted or reliable and remains consistent if carried out twice or more on the same group . Testing reliability using the Cronbach Alpha statistical test. A variable is said to be reliable if gives a value Cronbach Alpha > 0, 7 0.

Table 2 . Research Variable Reliability Test

Variable	Cronbach's Alpha	Information
Work Discipline (X1)	0.928	Reliable
Work Ability (X2)	0.953	Reliable
Work Supervision (X3)	0.946	Reliable
Work Effectiveness (Y)	0.943	Reliable

Source: Questionnaire data processed

Based on the SPSS calculation results, it can be seen that the Cronbach alpha value for variables X and Y is above 0.70, namely variable X1 is 0.928, variable X2 is 0.953, variable So, it can be said to be feasible in measuring what will be measured and can produce the same data in the same research.

c. Results Multiple Linear Regression Analysis

Based on the calculations in the table, it can be analyzed that the column Unstandardized Coefficients, constant value a is 3.226 and the regression value variable X1 is 0, 344, X2 is 0.254 , and X3 is 0.338 . So, if entered into the regression formula multiple linear it is as follows Y= 3,226 + 0,344 *X* 1 + 0, 254 *X* 2 + 0,338 *X* 3 . The writer can analyze that the regression equation shows a positive influence from variable X on Y.

Table 3. Multiple Linear Regression

Model	Unstandardized Coefficients	Standardized Coefficients	Q	Sig.

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		B	Std. Error	Beta		
	(Constant)	3.226	2.697		1.196	0.237
1	X1	0.344	0.156	0.337	2.202	0.032
2	X2	0.254	0.097	0.255	2.620	0.011
3	X3	0.338	0.135	0.363	2.495	0.016

a.Dependent Variable: Y (Work Effectiveness)

d. Results Normality Test

The normality test used in this research was the non-parametric Kolmogorov-Smirnov (K-S) statistical test. The normality test via the Kolmogorov-Smirnov statistical test can be carried out by looking at the significance value, if the significance value is > 0.05 then the regression model can be said to be normal. As in the table below:

Table 4 . Normality test

One-Sample Kolmogorov-Smirnov Test		
		Unstandardized Residuals
N		60
Normal Parameters, b	Mean	0.0000000
	Std. Deviation	3,77759424
Most Extreme Differences	Absolute	0.078
	Positive	0.078
	negative	-0.048
Statistical Tests		0.078
Asymp. Sig. (2-tailed)	0.200c,d	

a. Test distribution is Normal.
b. Calculated from data.
c. Lilliefors Significance Correction.
d. This is a lower bound of the true significance.

The table above shows that the significance value or probability value (Asymp. Sig.) of Kolmogorov-Smirnov in the regression model in this study is 0.200, which is greater than 0.05. So it can be concluded that the data or all variables used in this regression model are said to be normal.

e. Multicollinearity Test Results

The multicollinearity test aims to test whether the regression model finds a correlation between the independent variables. A good regression model should have no correlation between independent variables. To detect whether or not there is multicollinearity in the regression model, it can be seen from the tolerance value and variance inflation factor (VIF). The cut off

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value that is commonly used to indicate the presence of multicollinearity is a tolerance value > 0.10 or the same as a VIF value < 10.

Table 5 . Multicollinearity Test

Coefficients a			
Model		Collinearity Statistics	
		Tolerance	VIF
1	Work Discipline (X1)	0.143	7.003
	Work Ability (X2)	0.353	2.831
	Work Supervision (X3)	0.158	6.339

a. Dependent Variable: Work Effectiveness (Y)

The table above shows that the tolerance values of each independent variable work discipline (X1 0.143), work ability (X2 0.353) and work supervision (X3 0.158) are all greater than 0.10. Then the VIF value, for the three independent variables X1 (0.7.003), X2 (0.2.831) and

f. Heteroscedasticity Test Results

The Heteroscedasticity Test aims to test whether in the regression model there is an inequality of variance from the residual of one observation to another observation . The results of the heteroscedasticity test can be seen as follows:

Table 6 . t Test Results

Model		Unstandardized Coefficients		Standardized Coefficients	Q	Sig.
		B	Std. Error	Beta		
	(Constant)	9.854	3.476		2.834	0.006
1	X1	0.061	0.083	0.114	0.728	0.469
2	X2	0.055	0.054	0.147	1.001	0.316
3	X3	0.048	0.091	0.091	0.528	0.600

a. Dependent Variable: RES2

g. t Test Results

Table 7 . t Test Results

Model	Unstandardized Coefficients		Standardized Coefficients	Q	Sig.
	B	Std. Error	Beta		
(Constant)	3.226	2.697		1.196	0.237
X1	0.344	0.156	0.337	2.202	0.032
X2	0.254	0.097	0.255	2.620	0.011
X3	0.338	0.135	0.363	2.495	0.016

a. Dependent Variable: Y (Work Effectiveness)

4.2 Discussions

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The coefficient results are carried out through hypothesis testing and then compared with the t_table value, namely n = sample size 60 with α = 0.05, so we get a t_table of 2.003. So from the results of each variable it can be seen which variables influence employee work effectiveness as follows:

H1: Test the hypothesis of work discipline on employee work effectiveness from the calculation results obtained by t_count for 1 of 2,202 which is greater than t_table 2,003 with a significance of 0.032 which is smaller than the significance level of 0.05. This means that it can be concluded that H1 is accepted and Ho is rejected , and this shows that work discipline has a positive and significant effect on employee work effectiveness.

H2 : Test the hypothesis of work ability on employee work effectiveness from the calculation results obtained by t_count for *X* 2 of 2,620 greater than t_table 2,003 with a significance of 0.011, smaller than the significance level of 0, 05. This means that it can be concluded that H2 is accepted and Ho is rejected , then this shows that the work ability variable has a positive and significant effect on employee work effectiveness.

H3: Test the hypothesis of work supervision on employee work effectiveness from the calculation results obtained by t_count for 3 of 2,495 which is greater than t_table 2,003 with a significance of 0.016 which is smaller than the significance level of 0.05. This means that it can be concluded that H3 is accepted and Ho is rejected , so this shows that the work supervision variable has a positive and significant effect on employee work effectiveness.

5. CONCLUSION

The results of research regarding the influence of work discipline , work ability, and work supervision on employee work effectiveness in the field of road maintenance & road improvement at the Public Works and Spatial Planning Department of Cirebon Regency, can be made conclusion as follows:

1. Multiple Linear Regression

1) Work discipline partially influences work effectiveness

From the calculation results obtained, the T_count value for X1 (work discipline) is 2,202 > T_table is 2,003 with a significance value of 0.032 < 0.05. This means that H1 is accepted and H0 is rejected, so it can be stated that the work discipline variable partially has a positive and significant effect on employee work effectiveness.

2) Work ability partially influences work effectiveness

From the calculation results obtained, the T_count value for X2 (work ability) is 2,620 > T_table of 2,003 with a significance value of 0.011 < 0.05. This means that H2 is accepted and H0 is rejected, so it can be stated that the work ability variable partially has a positive and significant effect on employee work effectiveness.

3) Work supervision partially influences work effectiveness

From the calculation results that have been obtained, the T_count value for X3 (work supervision) is 2,495 > T_table of 2,003 with a significance value of 0.016 < 0.05. This means that H3 is accepted and H0 is rejected, so it can be stated that the work supervision variable partially has a positive and significant effect on employee work effectiveness.

4) Work discipline, work ability and work supervision simultaneously influence employee work effectiveness

And by comparing the F_count value of 81,199 > F_table of 2,769 with a significance value of 0.000 < 0.05, this can be interpreted that **H0 is rejected and H4 is accepted** so it can be stated that the independent or independent variable (X) has a positive and significant effect simultaneously or together on the dependent or dependent variable (Y) or
Work discipline, work ability and work supervision simultaneously have a positive and significant effect on employee work effectiveness in the field of road maintenance & improvement of roads at the Cirebon Regency Public Works and Spatial Planning Service.

2. Hypothesis Testing

1. Work ability greatly influences work effectiveness because it has the highest score with a value of 2.620.
2. Work supervision also has a second influence on work effectiveness with a value of 2.495.

Work discipline has the third effect on work effectiveness with a value of 2.202.

LIMITATION AND STUDY FORWARD

Limitations:

1. **Generalizability**: The findings of this study may have limitations in terms of generalizability due to the specific context of road maintenance and improvement services. Extrapolating the results to different industries or settings should be done cautiously.
2. **Cross-sectional Design**: The use of a cross-sectional design in this study may restrict the ability to establish causality between the variables studied. Longitudinal or experimental designs could provide stronger evidence of causal relationships.
3. **Measurement Bias**: There could be potential biases related to self-reported data on variables such as work discipline, work ability, and work supervision. Future studies could consider incorporating objective measures to enhance data validity.

Study Forward:

1. **Longitudinal Studies**: Future research could employ longitudinal studies to explore how changes in work discipline, work ability, and work supervision over time impact employee work effectiveness. This approach would offer insights into the dynamic nature of these relationships.
2. **Qualitative Exploration**: Complementing quantitative data with qualitative insights could provide a richer understanding of the mechanisms through which work-related factors influence employee work effectiveness. Qualitative studies could capture nuances that quantitative measures might miss.
3. **Intervention Research**: Conducting intervention studies to assess the effectiveness of strategies aimed at enhancing work discipline, work ability, and work supervision in improving employee work effectiveness could offer practical implications for organizations.

By addressing these limitations and considering the suggested directions for future research, the study can further contribute to the understanding of the relationships between work-related factors and employee work effectiveness in the field of road maintenance and improvement services.

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