

The Effect of Work Environment and Work Motivation on Employee Performance with Work Satisfaction as an Intervening Variable at the Department of Energy and Mineral Resources Medan

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Abstract

Employees have an important role in realizing the overall department objectives, whether or not a department is successful depends on the performance of the employees themselves. Work Environment has a positive and significant effect on Employee Performance with a value of 0,371 and significant 0,045. Work Environment has a positive and significant effect on Work Satisfaction 0.840 and significant 0,000. Work Motivation has a positive and significant effect on Employee Performance with a value of 0,346 and significant 0,010. Work Motivation has a positive and insignificant effect on Work Satisfaction with a value of 0.130 and a significant 0,287. Work Satisfaction has a positive and significant effect on Employee Performance with a value of 0,274 and significant 0,020. Work Environment has a positive and insignificant effect on Employee Performance through Work Satisfaction with a value of 0,214 and significant 0,095. Work Motivation has a positive and insignificant effect on Employee Performance through Work Satisfaction with a value of 0,033 and significant 0,165.

Keywords :

Work Environment, Work Motivation, Work Satisfaction, Work Performance

INTRUDUCTION

In this globalization era, every department must have a shared dream to be achieved, therefore every employee of the organization must participate and try to realize those goals and dreams. The goals of the department will be difficult to achieve if managers do not manage and supervise human resources. According to Hasibuan (2014) human resource management is the science and art of regulating the relationship and role of labor to effectively and efficiently help realize the goals of the company, employees, and society. According to Mangkunegara (2017), human resource management is a planning, organizing, coordinating, developing in order to achieve organizational goals “. Seeing that, employees who have an important role in realizing the overall goals of the agency. Management contains



elements of planning, organizing, implementing the goals to be achieved as well as implementing management in the form of individuals or groups.

According to Afandi (2018) work motivation is a desire that arises from within a person because he is inspired, encouraged, and driven to carry out activities with sincerity, pleasure and whole-heartedly. Apart from the work motivation factor, another factor that affects employee performance is the work environment. According to Siagian (2014), the work environment is where employees do their daily work. Indicators of the physical environment according to Siagian (2014) building places, adequate equipment, facilities, there are means of transportation, while non-physical peer relations, superior and subordinate relationships, employee cooperation, all of these indicators greatly support improving employee performance. According to Mangkunegara (2017) work satisfaction is a feeling that supports or does not support employees related to their work and their conditions. This department realizes that there are deficiencies in motivation, work, the phenomenon that occurs is that the leader lacks positive motivation in terms of training is less motivated as new employees are given a support system, for those who are outstanding also less rewarded for their success.

The work environment also appears several phenomena that researchers directly see such as the physical work environment, the facilities used such as leaky air conditioners so that there must be a bucket that holds the water, and several other facilities, such as place of worship are very less attention. The building has also not been renewed still the old building, there is no access to public transportation so that employees who take public transportation can only stop at the intersection then have to walk again to the office.

The non-physical work environment is seen as the relationship between superiors and subordinates who are less close, the relationship between employees is also still doing their own work without cooperation between employees.

Work satisfaction, the phenomenon that arises is that there are some employees who have the ability but there is no support from their superiors. Another phenomenon occurs because leadership is less close to employees resulting in gaps and eventually become mutually disharmonious.

Conceptual Framework

According to Rusiadi (2016) the conceptual framework is a description of the relationship between variables involved in the problem to be studied.



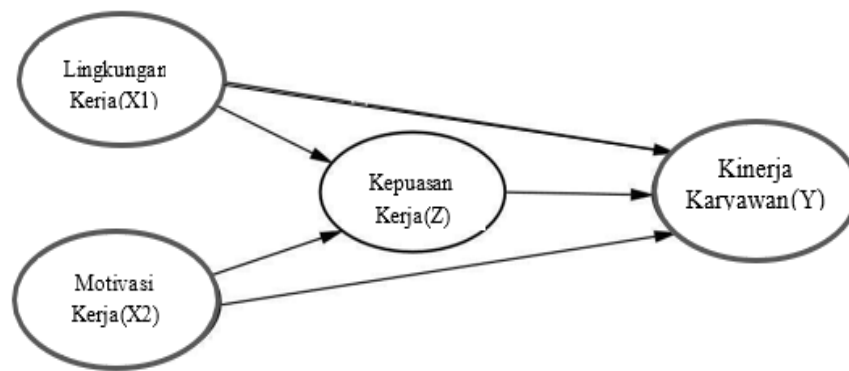


Figure 1 Conceptual Framework

Hypothesis

- H₁: Work Motivation has a positive and significant effect on Work Satisfaction of the Department of Energy and Mineral Resources Medan.
- H₂: Work Environment has a positive and significant effect on Work Satisfaction of the Department of Energy and Mineral Resources Medan.
- H₃: Work Motivation has a positive and significant effect on Work Performance of the Department of Energy and Mineral Resources Medan.
- H₄: Work Environment has a positive and significant effect on Work Performance of the Department of Energy and Mineral Resources Medan.
- H₅: Work Satisfaction has a positive and significant effect on Work Performance of the Department of Energy and Mineral Resources Medan.
- H₆: Work Motivation has a positive and significant effect on Work Performance through Work Satisfaction of the Department of Energy and Mineral Resources Medan.
- H₇: Work Environment has a positive and significant effect on Work Performance through Work Satisfaction of the Department of Energy and Mineral Resources Medan.

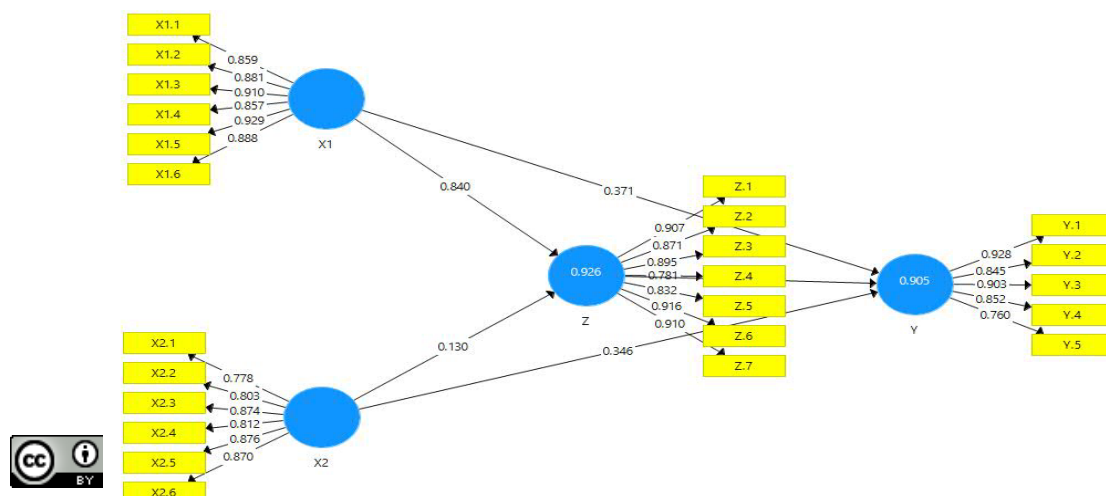


Figure 2. Outer Research Model on Smart PLS 3

METHOD

Research Location and Time

This research was conducted at the Department of Energy and Mineral Resources Jalan Setia Budi Pasar 2 no 84, Tanjung Sari Medan Selayang North Sumatra 20132, the research time period is from September to November 2024. The population in this study amounted to 60 people, for this research sample was a saturated sample, using the entire population as a sample. The data source in this study comes from respondents. Where in collecting the data, the researcher will distribute a questionnaire containing items of questions to each respondent.

The following (Table 1) Operational Definition of Research Variables

Table Operational Variable Definition

Work Motivation (X1)	According to Afandi (2018) work motivation is a desire that arises from within a person or individual because they are inspired, encouraged, and encouraged to carry out activities with sincerity so that the results of the activities carried out get good and quality results.	1 compensation 2 work condition 3 work facility 4 work performance 5 superiors recognition 6 the work itself (2018)	Likert scale
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Work Environment (X2)	According to Siagian (2014) Explained that the work environment is an environment where employees carry out their daily work According to Siagian (2014) stated that broadly speaking, there are two types of work environment, namely the physical environment and the non-physical environment.	Physical environment Siagian (2014) 1 building 2 sufficient equipment 3 facility 4 transportation Non-physical environment 1 Working relationship 2 Superiors and Subordinates relationship	Likert Scale
Work Satisfaction (Z)	According to Hasibuan (2014) states that work satisfaction is an emotional attitude that is pleasant and loves his work. This attitude is reflected in performance, work morale, discipline, and work expectations.	1 pleasure 2 capabilities 3 honesty 4 creativity 5 leadership 6 salary rate 7 Indirect satisfaction Hasibuan (2014).	Likert scale
Employee Performance (Y)	According to Cashmere (2018) performance is the result of work and work behavior that has been achieved in completing the tasks and responsibilities given in a certain period.	1 Quality 2 Quantity 3 Time 4 Employee cooperation 5 Cost suppression	Likert scale

		Kasmir (2018)	
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Data analysis in this study used Structural Equation Modeling (SEM) based on Partial Least Square (PLS) using Smart PLS 3.3.3 software. According to (Gozali, 2015) Partial Least Square (PLS) is a fairly powerful analysis method because it is not based on many assumptions.

Measurement model (outer model)

The procedure in testing the measurement model consists of validity and reliability tests.

- 1 1 Convergent Validity: The value of convergent validity can be seen from the correlation between the score of the item or indicator and its construct. Indicators are considered reliable if they have a correlation value above 0,7, however, at the research stage of scale development, a loading factor value of 0,5 – 0,6 is still acceptable (Ghozali, 2015).
- 2 Discriminant Validity: This value is the value of the cross loading factor which is useful for knowing whether the construct has adequate discriminant, namely by comparing the loading value on the intended construct must be greater than the loading value with other constructs (Ghozali, 2015).
- 3 Average Variance Extracted (AVE): Expected AVE value > 0,5
- 4 Composite Reliability: The composite reliability value must be > 0,7 for confirmatory research and a value of 0,6 – 0,7 is still acceptable for exploratory research. (Ghozali, 2015).
- 5 Cronbachs Alpha: The expected value is > 0,7 for all constructs, but for exploratory research > 0,6 is still acceptable (Ghozali, 2015).

Inner model analysis

Inner model analysis is also known as structural model analysis, which aims to predict the relationship between latent variables (Ghozali, 2015).



- 1 The Coefficient of Determination (R²) is used to determine how much influence exogenous variables have on endogenous variables. R² value of 0,75 said to be good, 0,50 said to be moderate, and 0,25 said to be weak (Ghozali, 2015).
- 2 Model Fit Test (Model Fit) is used to validate the combined performance between the measurement model and the structural model whose value ranges between 0-1 with interpretation ranges from 0-1 with interpretations, namely 0 – 0,25 (small), 0,25 – 0,36 (moderate) and above 0,36 (large) (Ghozali, 2015).
- 3 Predictive Relevance (Q²)
 This test is used to measure how well the observed value is produced by the model and also the parameter estimate. If the Q² value is greater than 0, it indicates that the model has predictive relevance, which means it has a good observation value, while if the value is less than 0, it indicates that the model does not have predictive relevance (Ghozali, 2015).
- 4 Statistical t test
 The hypothesis is said to be accepted if the t statistical value is greater than the t table. According to (Ghozali, 2015) the criteria for the t table value is 1,96 with a significance level.

RESULTS AND DISCUSSION

Result

Outer Model Analysis

1) **Convergent Validity:**

The convergent validity value can be seen from the correlation between the score of the item or indicator and its construct. Indicators are considered reliable if they have a correlation value above 0.7, however, at the research stage of scale development, a loading factor value of 0.5 - 0.6 is still acceptable (Ghozali, 2015). Based on this research, there is an outer loading of each variable and the indicator has a value greater than 0,7 so that it can be explained that all indicators are declared valid so that further research can be carried out to determine reliability as a condition of further research. (**Table 2**)

Tabel 2. Outer Loadings

	Work environment (X1)	Work motivation (X2)	Job satisfaction (Z)	Employee performance (Y)
X1.1	0.859			



X1.2	0.881			
X1.3	0.910			
X1.4	0.857			
X1.5	0.929			
X1.6	0.888			
X2.1		0.778		
X2.2		0.803		
X2.3		0.874		
X2.4		0.812		
X2.5		0.876		
X2.6		0.870		
Z.1			0.907	
Z.2			0.871	
Z.3			0.895	
Z.4			0.781	
Z.5			0.832	
Z.6			0.916	
Z.7			0.910	
Y.1				0.928
Y.2				0.845
Y.3				0.903
Y.4				0.852
Y.5				0.760

Sumber : Smart PLS3.3.3

Based on this study, there is an outer loading of each variable and the indicator has a value greater than 0,7 so that it can be explained that all indicators are declared valid so that research can be carried out further to determine reliability as a condition of further research.

2) Discriminant Validity

Aims to determine whether the construct has adequate discriminant, namely by comparing the loading value on the intended construct must be greater than other values (Ghozali & Latan, 2015). In the smart PLS 3.2.9 application, the discriminant validity test uses the cross loadings and Fornell Larcker values (Henseler et.al., 2015), as shown in Table 3 below:

Table 3. Outer Loadings



	Work environment (X2)	Work motivation (X1)	Job satisfaction (Z)	Employee performance (Y)
X1.1	0.859	0.821	0.757	0.810
X1.2	0.881	0.771	0.801	0.797
X1.3	0.910	0.897	0.643	0.895
X1.4	0.857	0.829	0.836	0.773
X1.5	0.929	0.847	0.797	0.878
X1.6	0.888	0.798	0.884	0.841
X2.1	0.677	0.778	0.763	0.713
X2.2	0.766	0.803	0.782	0.726
X2.3	0.836	0.874	0.785	0.823
X2.4	0.656	0.812	0.649	0.655
X2.5	0.848	0.876	0.857	0.868
X2.6	0.806	0.870	0.871	0.826
Z.1	0.899	0.848	0.907	0.806
Z.2	0.771	0.728	0.871	0.679
Z.3	0.850	0.805	0.895	0.794
Z.4	0.735	0.763	0.781	0.752
Z.5	0.677	0.736	0.832	0.814
Z.6	0.880	0.840	0.916	0.854
Z.7	0.823	0.793	0.910	0.814
Y.1	0.851	0.765	0.643	0.928
Y.2	0.696	0.660	0.820	0.845
Y.3	0.848	0.847	0.797	0.903
Y.4	0.824	0.848	0.830	0.852
Y.5	0.750	0.743	0.763	0.760

Based on this research, it can be seen in the table above that the variable cross loading is greater than the latent variable cross loading factor, for work environment, work motivation, work satisfaction, employee performance, it can be seen that the cross loading factor value is greater than the latent variable. This means that each variable is discriminat validity.

3) Composite reliability

Composite Reliability is the part used to test the reliability value of



indicators on variable. A variable can be declared to meet composite reliability if it has composite reliability value > 0.7 (Ghozali, 2014). (Table 4), below:

Tabel 4 Construct Reliability and Validity

	Cronbac h's Alpha	rho_ A	Compos ite Reliabil ity	Average Variance Extracted (AVE)
X1	0.946	0.948	0.946	0.746
X2	0.914	0.921	0.914	0.641
Y	0.910	0.917	0.912	0.677
Z	0.948	0.951	0.949	0.727

Sumber : Smart PLS3.3.3

It can be seen in the table 4 above that the Cronbach alpha value has a value for each variable that is greater than 0.7, meaning that each variable is considered reliable because the value is greater than 0.7. For the composite reliability column, there is a value greater than 0.6 for each variable, so in this study there is a reliability value for each variable. In the AVE column, there is a value for each variable greater than 0.7, which means the value is valid for each variable.

Reflective Construction Measurement Model Test Results (Outer Model)

The measurement model aims to describe the relationship between the construct and its indicator variables (generally called the outer model in PLS-SEM). The measurement model explains how the construct is measured and is reliable or valid and reliable by looking at convergent validity, discriminant validity and construct reliability (Hair et al., 2017). The description of the outer model in Smart PLS is as follows:

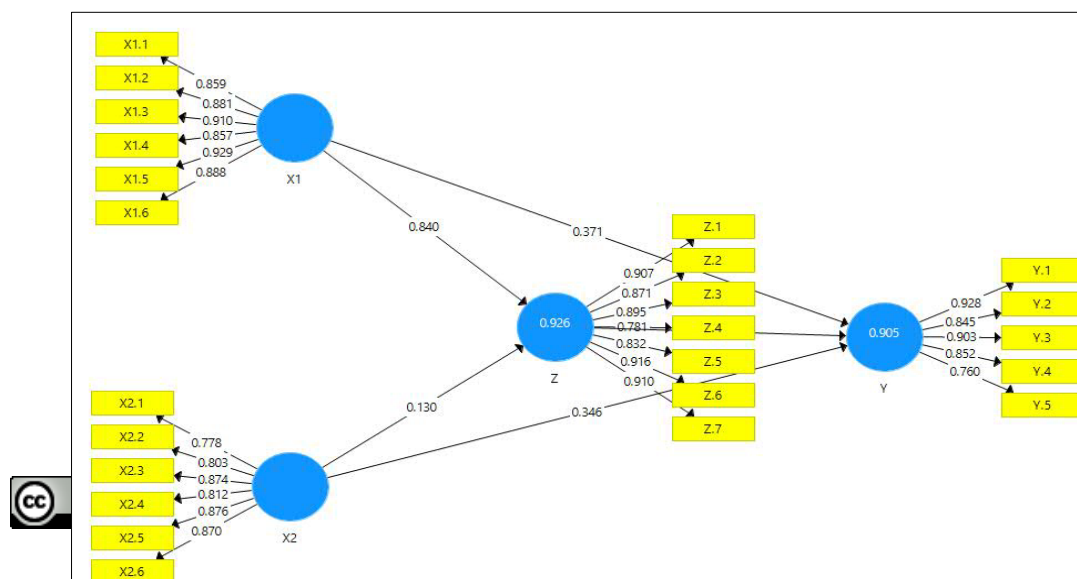


Figure 2. Smart PLS 3 Outer Loading

Based on Figure 2 above, it can be seen that there is no indicator whose value is below 0.70, and all outer loadings are very far from 0.4, and above the AVE value, therefore it can be concluded that all indicators have fulfilled the rule of thumb. So there is no need to eliminate indicators and re-estimate them. Apart from that, based on the results, the Composite Reliability value produced by all constructs is more than 0.7 with a minimum value of 0.970 which is indicated by the job satisfaction variable. Therefore, it can be concluded that all constructs in this study are reliable or meet the reliability test.

Inner model analysis

Inner model analysis is also known as structural model analysis, which aims to predict the relationship between latent variables (Ghozali, 2015).

Table 5 R Square Result

	R Square	Adjusted R Square
Work Satisfaction (Z)	0.905	0.900
Employee Performance (Y)	0.926	0.923

In table 5, there is an R square value for the work satisfaction variable of 0,905, meaning that the effect of work environment variables and work motivation on work satisfaction is 0,905 or 90,5% and the rest is in other variables. The R square value, employee performance variable is 0,926, meaning that the effect of work environment variables, work motivation and work satisfaction on employee performance is 0,926 or 92,6% and the rest is in other variables.

Hypothesis Testing

After assessing the inner model, the next thing is to evaluate the relationship between latent constructs as hypothesized in this study. Hypothesis testing in this study was carried out by looking at T-Statistics and P-Values. The hypothesis is declared accepted if the T-Statistics value > 1,96 and P-Values < 0,05. The following are the results of the direct influence Path Coefficients:



In table 6 there are hypothesis results, the explanation is as follows:

1. The work environment has a positive and significant effect on employee performance with a value of 0,371 and a significant 0,045, meaning that if the work environment increases, employee performance will increase.
2. Work Environment has a positive and significant effect on Work Satisfaction with a value of 0,840 and significant 0,000, meaning that if the Work Environment increases, Work Satisfaction increases.
3. Work Motivation has a positive and significant effect on Employee Performance with a value of 0,346 and significant 0,010, meaning that if Work Motivation increases, Employee Performance increases.
4. Work Motivation has a positive and significant effect on Work Satisfaction with a value of 0,130 and significant 0,287, meaning that Work Motivation has little effect on Work Satisfaction.
5. Work Satisfaction has a positive and significant effect on Employee Performance with a value of 0,274 and significant 0,020, meaning that if Work Satisfaction increases, Employee Performance will increase.

In table 7 there are results of indirect effects which will be explained as follows:

1. Work Environment has a positive and insignificant effect on Employee Performance through Work Satisfaction with a value of 0,214 and a significant 0,095, meaning that Work Satisfaction is not an intervening variable because it is not able to significantly influence.
2. Work Motivation has a positive and insignificant effect on Employee Performance through Work Satisfaction with a value of 0.033 and a significant 0.430, meaning that Work Satisfaction is not an intervening variable because it is unable to influence significantly.

CONCLUSION

After getting the results of the hypothesis, the researcher gave conclusions, therefore the conclusions of this study are as follows:

1. Work Environment has a positive and significant effect on Employee Performance with a value of 0,371 and significant 0,045.
2. Work Environment has a positive and significant effect on Work Satisfaction 0,840 and significant 0,000.
3. Work Motivation has a positive and significant effect on Employee



Performance with a value of 0,346 and significant 0,010.

4. Work Motivation has a positive and insignificant effect on Work Satisfaction with a value of 0,130 and a significant 0,287.
5. Work Satisfaction has a positive and significant effect on Employee Performance with a value of 0,274 and significant 0,020.
6. Work Environment has a positive and insignificant effect on Employee Performance through Work Satisfaction with a value of 0,214 and significant 0,095.
7. Work Motivation has a positive and insignificant effect on Employee Performance through Work Satisfaction with a value of 0.033 and significant 0,165.

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