Analysis Instruments Using Decision System Concepts

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Syariful Alam[1], Dayan Singasatia[1], Hendri Sembiring[2], Murwani Wulansari[3], Dedi Suhendro[4*], Ilham Syahputra Saragih[5]

[1]Sekolah Tinggi Teknologi Wastukancana, Indonesia
[2]STIE Surya Nusantara, Pematangsiantar, Indonesia
[3]Universitas Bina Sarana Informatika, Indonesia
[4]AMIK Tunas Bangsa, Pematangsiantar, Indonesia
[5]STIKOM Tunas Bangsa, Pematangsiantar, Indonesia

Email: alam@stt-wastukancana.ac.id[1], dayan@stt-wastukancana.ac.id[1], sembiringhendri@gmail.com[2], murwani.mwu@bsi.ac.id[3], dedisu@amiktunasbangsa.ac.id[4*], ilham@amiktunasbangsa.ac.id[5]

Abstract. Discipline, Innovation, and Work Environment were examined in this study to see how they affected employee performance at the Simalungun District Forest Service. The study's participants and sample were Dinas Kehutanan Kabupaten Simalungun's State Civil Servant (ASN) employees, and questionnaires were distributed to up to 106 of them using quantitative methods and data collection procedures. Work environment, discipline, and innovation are the dependent and independent factors, respectively (Employee Performance). The Classical Assumption Test (Normality Test, Multicollinearity Test, Heteroscedasticity Test) and Hypothesis Testing are both used to assess testing instruments' validity and reliability (Coefficient of Determination R2, F test, t-test). Fcount>Ftable (2.533> 2.30), according to this study, indicates that the independent variable (X) has an impact on the dependent variable (Y). The discipline variable (X1) has only a little effect on employee performance when the tcount ttable is (1.5081.983). (Y). A partial absence of influence on employee performance (Y) is found for the innovation variable (X2) when the value is set to tcountttable (-0.9541.983). Work environment (X3) has just a limited impact on employee performance (Y) when using tcountttable (-1.8631.983).

Keywords: Discipline; innovation; the workplace; employee performance; analysis tools; and hypotheses

1. Introduction

Human Resources owned by a company is an inseparable unit that always runs in accordance with the company's expectations. If all of the resources are working toward the same goals, the company will be able to function normally. Because resources are the primary motivator in activities, company leaders always pay close attention to them. Discipline, innovation, and the work environment all have an impact on Human Resources, ensuring that order is maintained in carrying out tasks in order to achieve maximum results and targets. Discipline applied by resources in a company plays a critical role because it demonstrates a strong commitment to developing innovations in the workplace that have an impact on the company's progress. As a result, it provides the effect of job satisfaction as a complete symptom with interrelationship factors between human resources and satisfaction as a result of one's attitude toward work [1]. Discipline is required to achieve the company's objectives. Discipline is referred to as an operational action. Discipline is the source of employee performance

evaluation. This has resulted in an increase in employee morale, which has resulted in increased innovation and productivity. Previous research has found that discipline can provide an overview of the responsibilities of work tasks, which can provide motivation and enthusiasm to work toward the achievement of company goals [2]. In other studies, discipline is defined as an action that encourages employees to follow applicable rules and regulations [3]. Changes and developments in the environment frequently confront an organization. In order to respond to these changes, the company must be able to manage its human resources so that they can develop the company. Innovating is one way to help the company's development and is also the key to the company's competitiveness. Innovation plays a role in the company's contribution, which includes a variety of aspects that add value to the company. According to Indra Permana's 2017 research, the level of innovation is measured using a continuum line, which means that low innovation indicates that individuals in the organization are weak, and high innovation indicates that the individual has a strong position in the organization [4]. According to the findings of J. Dama and I. W. J. Ogi's 2018 research, the concepts contained in innovation are in the form of new ways and ideas to refer to a change that is felt in new things by the company [5].

The work environment is a component of the institution's strength that has the potential to influence the company's performance. According to N. Syafrina and S. Manik's 2018 research, the work environment is the facilities and infrastructure surrounding it, which includes cleanliness, lighting, facility tranquility, and other tools [6]. While H. Wijaya and E. Susanty's 2017 research states that the work environment is everything that is around employees so that they can influence oneself in carrying out and completing work and directing employees how to work comfortably and peacefully while carrying out their work [7]. Employee performance is included in a person's behavior in accordance with their roles and duties in the organization, and it is a critical task in every organization to achieve common goals. Improving the quality of compensation is one way for an organization to improve employee performance. Employee performance, according to L. Lusri and H. Siagian's 2019 research, is the result of a person's work in both quality and quantity toward achievement in carrying out their duties according to responsibilities [8]. According to D. Sartika (2015), performance in organizations is basically to achieve goals that must have and be clearly described in order to become a benchmark for the success or failure of a goal. In performance management, achieving a goal becomes the task and responsibility of the leader [9].

With the passage of Law No 32 of 2004 on local government, the Simalungun Forestry Service was established under the Simalungun Regent [10]. This office is a continuation of the Forestry Service of North Sumatra Province's branch office IV. The headquarters are in Pematangsiantar, with seven branch offices spread across 30 sub-districts in Simalungun. The Simalungun Forestry Service office relocated to Pamatang Raya in 2013. The Simalungun Regency Forestry Service's vision is "Sustainable forest for equitable welfare to overcome problems in the field of forestry development while taking into account the potential and conditions of Simalungun Regency," and its mission is (1) Ensuring the existence of a forest with a proportional area. (2) Improving various functions of forests and ecosystems, such as conservation, protection, and environmental services, in order to achieve balanced and long-term environmental, social, cultural, and economic benefits. (3) Strengthening forest supervision security implementation. The Simalungun Forestry Service, which was founded in Pematangsiantar, has seven branch offices spread across 30 sub-districts and Simalungun Regency. The Simalungun Forestry Service office was relocated to Pamatang Raya in 2013, and it now provides counseling on land protection and development in the forestry sector, technical supervision and control in the forestry sector, development in the forestry sector, use and utilization in the forestry sector, supervision of permits and recommendations for forestry businesses, and conservation of natural resources in the forestry sector. Forestry, as well as the management and marketing of forest products, necessitate dependable human resources, and discipline is one factor that is thought to improve employee performance. The Simalungun Forestry Service's research to produce innovations is a strategy in research areas that can develop and be sustainable in order to give the impact of the emergence of new ideas to generate potential in research. Forestry in Indonesia is being supported for the future by innovation strategies and policies that will have a positive impact on performance. Meanwhile, the environment associated with the location plays an important role in the prospects that

affect the performance of Simalungun Forestry Service employees. The Simalungun Forestry Service building did not take into account factors that could affect employee performance. In addition to wall color, lighting, and air circulation. These three amenities can have an impact on and provide a sense of comfort at work. If Simalungun Forestry Service employees do not feel comfortable doing their jobs, optimal results will not be achieved. As a result, the authors wish to conduct research titled The Effect of Discipline, Innovation, and Work Environment on Employee Performance at the Simalungun Regency Forestry Service.

2. Methodology

This study makes use of quantitative data, specifically the number of State Civil Apparatus employees (abbreviated as ASN). Field surveys were used to collect data, with questionnaires distributed to 106 ASN employees at the Simalungun Forestry Service. The population and research sample are all ASN employees, a total of 106 people.

Table 1. Qualifications by Group (Sumber: https://simalungunkab.bps.go.id)

No	Group	Amount
1	Group I	2
2	Group II	25
3	Group III	74
4	Group IV	5

Employee Performance (Y), which is the employee's response, is the dependent variable in this study. Discipline (X1), Innovation (X2), and Work Environment are independent variables (X3). This study's analysis technique employs a multiple linear regression model. Multiple linear regression is a regression model with more than one independent variable. Multiple linear regression equations are as follows:

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \varepsilon \quad (1)$$

Information:
Y = Employee Performance
X_1 = Discipline
X_2 = Innovation
X_3 = Work environment
α = Constant
ε = Error
$\beta_1, \beta_2, \beta_3$= Regression coefficient showing changes in dependent variable based on independent variable

3. Results and Discussion

3.1. The Validity test

Table 2 shows the results of the disciplinary validity test, which show that not all elements of the 20 question questionnaire items from the disciplinary variables are declared valid. It is proven that questionnaire items 1, 2, 11, 12, 16, and 17 are declared invalid because rcount is less than rtable (0.189). Thus, because rcount is greater than rtable (0.189), the questionnaire items 3, 4, 5, 6, 7, 8, 9, 10, 13, 14, 15, 18, 19, and 20 are declared valid and used as a data collection tool.

Table 2. Test the Validity of "Discipline"

No item	Rcount	Rtable	Information
1	0,056	0,189	Invalid
2	0,048	0,189	Invalid
3	0,287	0,189	Valid
4	0,426	0,189	Valid
5	0,613	0,189	Valid
6	0,418	0,189	Valid
7	0,494	0,189	Valid
8	0,400	0,189	Valid
9	0,278	0,189	Valid
10	0,290	0,189	Valid
11	0,110	0,189	Invalid
12	0,125	0,189	Invalid
13	0,489	0,189	Valid
14	0,461	0,189	Valid
15	0,243	0,189	Valid
16	0,067	0,189	Invalid
17	0,152	0,189	Invalid
18	0,287	0,189	Valid
19	0,426	0,189	Valid
20	0,613	0,189	Valid

Table 3 shows the results of the Innovation validity test, which show that not all elements of the 20 question questionnaire items from the Innovation variable are declared valid. It is proven that the 1, 14, 16, 17, 19, and 20 questionnaire items are declared invalid because rcount is less than rtable (0.189). Thus, because rcount is greater than rtable (0.189), the questionnaire items 32, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, and 13 are declared valid and used as a data collection tool.

Table 3. Test the Validity of "Innovation"

No item	Rcount	Rtable	Information
1	0,182	0,189	Invalid
2	0,346	0,189	Valid
3	0,312	0,189	Valid
4	0,365	0,189	Valid
5	0,440	0,189	Valid
6	0,349	0,189	Valid
7	0,208	0,189	Valid
8	0,326	0,189	Valid
9	0,254	0,189	Valid
10	0,619	0,189	Valid
11	0,586	0,189	Valid
12	0,620	0,189	Valid
13	0,264	0,189	Valid
14	0,122	0,189	Invalid
15	0,622	0,189	Valid
16	0,137	0,189	Invalid
17	0,125	0,189	Invalid
18	0,266	0,189	Valid
19	0,182	0,189	Invalid
20	0,122	0,189	Invalid

Table 4 shows the results of the work environment validity test, which show that not all of the 15 question questionnaire items from the work environment variables are declared valid. It is proven that questionnaire items 1 and 15 are declared invalid because rcount is less than rtable (0.189). Thus, because rcount is greater than rtable (0.189), the questionnaire items 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, and 14 are declared valid and used as a data collection tool.

Table 4. Validity Test of "Work Environment"

No item	Rcount	Rtable	Information
1	0,154	0,189	Invalid
2	0,484	0,189	Valid
3	0,275	0,189	Valid
4	0,387	0,189	Valid
5	0,521	0,189	Valid
6	0,225	0,189	Valid
7	0,428	0,189	Valid
8	0,502	0,189	Valid
9	0,479	0,189	Valid
10	0,388	0,189	Valid
11	0,418	0,189	Valid
12	0,436	0,189	Valid
13	0,353	0,189	Valid
14	0,393	0,189	Valid
15	0,114	0,189	Invalid

Table 5 shows the results of the employee performance validity test, which show that not all elements of the 15 question questionnaire items from the employee performance variable are declared valid. It is proven that questionnaire items 1.7 and 15 are declared invalid because rcount is less than rtable (0.189). Thus, because rcount is greater than rtable (0.189), the questionnaire items 2, 3, 4, 5, 6, 8, 9,10, 11, 12, 13, and 14 are declared valid and used as a data collection tool.

Table 5. Validity Test of "Employee Performance"

No item	Rcount	Rtable	Information
1	0,069	0,189	Invalid
2	0,348	0,189	Valid
3	0,566	0,189	Valid
4	0,581	0,189	Valid
5	0,520	0,189	Valid
6	0,406	0,189	Valid
7	0,119	0,189	Invalid
8	0,349	0,189	Valid
9	0,620	0,189	Valid
10	0,643	0,189	Valid
11	0,381	0,189	Valid
12	0,455	0,189	Valid
13	0,275	0,189	Valid
14	0,242	0,189	Valid
15	0,130	0,189	Invalid

3.2. The F test.

This test is used to determine whether all independent variables can affect the dependent variable at the same time (simultaneously). The following outcomes were obtained as a result of data processing:

The Fcount value is 2.008, and the significance value is 0.000, based on the calculation results. The results are shown in Table 6 below:

Table 6. Simultaneous Hypothesis Testing (F Test)

ANOVA[a]						
Model		**Sum of Squares**	**df**	**Mean Square**	**F**	**Sig.**
1	Regression	392,634	3	130,878	2,533	,061[b]
	Residual	5270,951	102	51,676		
	Total	5663,585	105			

a. Dependent Variable: Performance
b. Predictors: (Constant), Work Environment, Discipline, Innovation

a. Ha is accepted if Fcount > Ftable, at = 5% and p-value < level of significant at 0.05;
b. Ha is rejected if Fcount < Ftable, at = 5% and p-value > level of significant at 0.05.

The value of Fcount is 2.533. With a significance level, a = 5%, df numerator = k-1 = 4-1 = 3, df denominator = N – k = 105 – 3 = 102. The results obtained for the Ftable value of 2.30 then:
Fcount >Ftable (2,533 > 2.30). Fcount is greater than Ftable, with a significance level of 0.000 which is smaller than 0.05, then H0 is rejected, this means that the independent variables (discipline, innovation and motivation and work environment) simultaneously have a significant effect on the dependent variable (Employee Performance) it means that the size of the five ratios simultaneously affects employee performance.

3.3. Attempt a t-test

The purpose of this partial hypothesis testing was to see if each independent variable (intelligence, maturity, motivation, achievement, and attitude) had an effect on the dependent variable (Employee Performance). The following outcomes are obtained as a result of data processing:

Table 7. Partial Hypothesis Testing (t-test)

Coefficients[a]						
Model		**Unstandardized Coefficients**		**Standardized Coefficients**	**t**	**Sig.**
		B	**Std. Error**	**Beta**		
1	(Constant)	54,328	6,940		7,829	,000
	Discipline	,150	,099	,159	1,508	,135
	Innovation	-,107	,113	-,111	-,954	,343
	Work environment	-,215	,116	-,206	-1,863	,065

a. Dependent Variable: Performance

This t-test was conducted to find out how much influence each independent variable had on the dependent variable.
a. Ha is accepted if t count > t table, at = 5%;
b. Ha is rejected if t count < t table, at = 5%.
Then the multiple linear regression equation can be arranged as follows:

$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \varepsilon$
$Y = 54{,}328 + 0{,}150\ X_1 - 0{,}107\ X_2 - 0{,}215\ X_3$

The constant value in the multiple linear regression equation above is 54.328, indicating that employee performance has a value of 54.328 if the independent variables (discipline, innovation, work environment) are considered constant, but the constants show significant results. The beta value of the

unstandardized coefficient can be used to determine the magnitude of the influence of the independent variable on the dependent variable, whereas the beta standardized coefficients can be used to determine the most influential independent variable on the dependent variable. The value of tcount for each independent variable will be compared to the value of ttable (calculated from two-tailed = 0.05 and degrees of freedom (df) = nk-1, where n = number of samples and k = number of variables). Based on the data processing results in table 6, the following is a partial effect of each independent variable on the dependent variable:

a. The discipline variable has a tcount of 1.508 and a ttable of 1.983. As a result of tcount ttable, which is 1.508 1.983, Ha is rejected and H0 is accepted, indicating that the Discipline variable has no effect on Employee Performance at the Simalungun Forestry Service.
b. The Innovation variable has a ttable value of 1.983 and a tcount value of -0.954. Thus, when tcount ttable is -0.954 1.983, Ha is rejected and H0 is accepted, indicating that the Innovation variable has no effect on Employee Performance at the Simalungun Forestry Service.
c. The tcount value for the Work Environment variable is -1.863, and the t-table value is 1.983. Thus, tcount ttable, which is -1.863 1.983, then Ha is rejected and H0 is accepted, indicating that the Work Environment variable has no effect on Simalungun Forestry Service Employees' Performance.

4. Conclusion

The following are the findings of this study's hypothesis on the Effect of Discipline, Innovation, and Work Environment on Employee Performance at the Simalungun Forestry Service:

a. The discipline variable (X1) has a limited effect on employee performance (Y).
b. The innovation variable (X2) has a limited impact on employee performance (Y).
c. The work environment variable (X3) has a limited effect on employee performance (Y).
d. Employee performance is influenced by the variables of discipline, innovation, and work environment all at the same time.

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