

The Effect of Leadership and Motivation on Employee Performance

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Abstract

This study aims to determine and analyze the effect of leadership and motivation on employee performance at Perumda Tirta Uli Pematangsiantar, both partially and simultaneously. This research employed a quantitative associative approach using a survey method. The population consisted of all employees of Perumda Tirta Uli Pematangsiantar, with a sample of 71 respondents determined through the saturated sampling technique. Data were collected using a questionnaire based on a 1–5 Likert scale and analyzed through validity tests, reliability tests, classical assumption tests, and multiple linear regression analysis using SPSS. The results show that all research instruments were valid and reliable. Hypothesis testing revealed that leadership has a positive and significant effect on employee performance ($t = 5.142 > t \text{ table } 1.995$; sig. 0.000), motivation has a positive and significant effect on employee performance ($t = 8.823 > t \text{ table } 1.995$; sig. 0.000), and leadership and motivation simultaneously have a positive and significant effect on employee performance ($F = 247.0 > F \text{ table } 3.132$; sig. 0.000). The coefficient of determination (R^2) was 0.879, indicating that 87.9% of the variation in employee performance can be explained by leadership and motivation, while the remaining 12.1% is explained by other variables outside this research model.

Keywords: *Leadership; Motivation; Employee Performance; Multiple Linear Regression*

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Introduction

Human resources are the primary asset and the most important driving force for every organization, whether governmental, private, or a regionally owned enterprise, in achieving its established goals. Perumda Tirta Uli Pematangsiantar, as a regionally owned enterprise engaged in providing drinking water to the community, is required to continuously improve the quality of its public services. The quality of these services is largely determined by the performance of the employees who carry out the company's day-to-day operations.

Optimal employee performance cannot be separated from the role of effective leadership and high work motivation. Good leadership is able to direct, guide, and set a good example for employees in carrying out their duties and responsibilities. On the other hand, high work motivation encourages employees to work to the best of their ability, with discipline and a sense of responsibility toward their tasks. Based on preliminary observations, there are indications that some employees at Perumda Tirta Uli Pematangsiantar have not shown optimal performance, which is suspected to be related to the leadership style applied and the level of employee work motivation, which has not been fully optimized.

Based on the above description, this study aims to analyze: (1) the effect of leadership on employee performance; (2) the effect of motivation on employee performance; and (3) the simultaneous effect of leadership and motivation on employee performance at Perumda Tirta Uli Pematangsiantar.

Literature Review

2.1 Leadership

Leadership is the ability of a person to influence others so that they work together to achieve established goals (Hasibuan, 2012). Siagian (2015) explains that leadership is the core of management because it serves as the driving force for human resources and other resources within an organization.

The indicators of leadership used in this study include the leader's ability to make decisions, motivate subordinates, communicate effectively, and exercise control over subordinates.

2.2 Motivation

Motivation is an impulse that arises from within a person to take a certain action for a specific purpose (Mangkunegara, 2017). Sutrisno (2011) states that work motivation is one of the factors that determines a person's performance, because the extent of motivation's influence on performance depends on the intensity of the motivation provided.

2.3 Employee Performance

Performance is the quality and quantity of work achieved by an employee in carrying out their duties in accordance with the responsibilities assigned to them (Mangkunegara, 2009). In this study, employee performance is measured through indicators of work quality, work quantity, and timeliness in completing tasks.

2.4 Conceptual Framework and Hypotheses

Based on the literature review described above, the conceptual framework of this study illustrates the relationship between leadership (X1) and motivation (X2) as independent variables, with employee performance (Y) as the dependent variable. Based on this framework, the research hypotheses are formulated as follows:

H1: Leadership has a positive and significant effect on employee performance at Perumda Tirta Uli Pematangsiantar.

H2: Motivation has a positive and significant effect on employee performance at Perumda Tirta Uli Pematangsiantar.

H3: Leadership and motivation simultaneously have a positive and significant effect on employee performance at Perumda Tirta Uli Pematangsiantar.

Research Methodology

This study employed a quantitative approach with an associative/causal research design. The population of this study consisted of all employees of Perumda Tirta Uli Pematangsiantar. The sampling technique used was saturated sampling (census), in which all members of the available population at the time of data collection were used as the sample, resulting in a total sample of 71 respondents.

Data collection was carried out through a closed-ended questionnaire using a 1–5 Likert scale (Strongly Disagree to Strongly Agree). The leadership variable (X1) was measured using 4 statement items, the motivation variable (X2) was measured using 4 statement items, and the employee performance variable (Y) was measured using 3 statement items.

The data analysis techniques used included validity testing (Pearson item-total correlation), reliability testing (Cronbach's Alpha), classical assumption tests (normality, multicollinearity, and heteroscedasticity), and multiple linear regression analysis with the following model equation:

$$Y = a + b_1X_1 + b_2X_2 + e$$

Hypothesis testing was carried out through the t-test (partial), F-test (simultaneous), and the coefficient of determination (R^2), with a significance level of $\alpha = 0.05$. All data processing was carried out using SPSS software (Sugiyono, 2013).

RESULTS AND DISCUSSION

4.1 Respondent Characteristics

This study involved 71 respondents who were employees of Perumda Tirta Uli Pematangsiantar. Respondent demographic characteristics (gender, age, education, and length of service) can be presented in accordance with the demographic data obtained from the research questionnaire.

4.2 Validity Test

The validity test was conducted by comparing the calculated r-value (Pearson correlation of each item with the total variable score) with the r-table value at $n = 71$ and $\alpha = 0.05$, which is 0.2334. An item is considered valid if the calculated r-value is greater than the r-table value.

Table 1. Validity Test Results

Variable	Item	r-calculated	r-table	Result
Leadership (X1)	X1.1	0.893	0.2334	Valid
	X1.2	0.760	0.2334	Valid
	X1.3	0.889	0.2334	Valid
	X1.4	0.871	0.2334	Valid
Motivation (X2)	X2.1	0.863	0.2334	Valid
	X2.2	0.834	0.2334	Valid

	X2.3	0.787	0.2334	Valid
	X2.4	0.853	0.2334	Valid
Employee Performance (Y)	Y1	0.911	0.2334	Valid
	Y2	0.913	0.2334	Valid
	Y3	0.837	0.2334	Valid

Based on Table 1, all statement items for the leadership, motivation, and employee performance variables have calculated r-values greater than the r-table value, so all items are declared valid and suitable for use as research instruments.

4.3 Reliability Test

The reliability test was conducted using the Cronbach's Alpha coefficient, with the criterion that an instrument is considered reliable if its Cronbach's Alpha value is greater than 0.60.

Table 2. Reliability Test Results

Variable	Cronbach's Alpha	Result
Leadership (X1)	0.874	Reliable
Motivation (X2)	0.852	Reliable
Employee Performance (Y)	0.856	Reliable

The results in Table 2 show that all variables have a Cronbach's Alpha value above 0.60, so all research instruments are declared reliable and consistent for use as measurement tools.

4.4 Classical Assumption Tests

a. Normality Test

The normality test was conducted using the Kolmogorov-Smirnov test on the residual values of the regression model. The test results show a statistic value of 0.108 with an Asymp. Sig. (2-tailed) of 0.358 (> 0.05), so it can be concluded that the residual data is normally distributed.

b. Multicollinearity Test

Table 3. Multicollinearity Test Results

Variable	Tolerance	VIF	Result
Leadership (X1)	0.358	2.792	No multicollinearity
Motivation (X2)	0.358	2.792	No multicollinearity

The Tolerance values of both independent variables are greater than 0.10 and the VIF values are less than 10, so it can be concluded that there is no multicollinearity between the independent variables in the regression model.

c. Heteroscedasticity Test

The heteroscedasticity test was conducted using the Glejser test, which regresses the absolute residual values against the independent variables. The test results show a

significance value of 0.173 for leadership and 0.108 for motivation, both of which are greater than 0.05, so it can be concluded that there is no heteroscedasticity in the regression model.

4.5 Multiple Linear Regression Analysis

Table 4. Multiple Linear Regression Results

Model	Coefficient (B)	Std. Error	t-value	Sig.
Constant	-0.541	0.577	-0.937	0.352
Leadership (X1)	0.269	0.052	5.142	0.000
Motivation (X2)	0.505	0.057	8.823	0.000

Based on Table 4, the following multiple linear regression equation was obtained:

$$Y = -0.541 + 0.269 X1 + 0.505 X2 + e$$

This equation shows that each one-unit increase in leadership will increase employee performance by 0.269 units, and each one-unit increase in motivation will increase employee performance by 0.505 units, assuming all other variables remain constant.

4.6 Hypothesis Testing

a. t-test (Partial)

The t-table value at $df = 68$ and $\alpha = 0.05$ (two-tailed) is 1.995. Based on Table 4, the leadership variable obtained a calculated t-value of 5.142 (> 1.995) with a significance of 0.000 (< 0.05), so H1 is accepted: leadership has a positive and significant effect on employee performance. The motivation variable obtained a calculated t-value of 8.823 (> 1.995) with a significance of 0.000 (< 0.05), so H2 is accepted: motivation has a positive and significant effect on employee performance.

b. F-test (Simultaneous)

Table 5. F-test (ANOVA) Results

Model	F-calculated	F-table	Sig.	Result
Regression	247.0	3.132	0.000	Significant

The calculated F-value of 247.0 is greater than the F-table value of 3.132, with a significance level of 0.000 (< 0.05), so H3 is accepted: leadership and motivation simultaneously have a positive and significant effect on employee performance at Perumda Tirta Uli Pematangsiantar.

c. Coefficient of Determination (R^2)

Table 6. Model Summary

R	R Square	Adjusted R Square
0.938	0.879	0.875

The R Square value of 0.879 indicates that 87.9% of the variation in employee performance can be explained by the leadership and motivation variables, while the remaining 12.1% is explained by other variables not examined in this study, such as compensation, work environment, or organizational culture.

Discussion

The results of this study show that leadership has a positive and significant effect on employee performance. This finding is consistent with the study by Murdiyanto & Indriyaningrum (2021) at Perumda Air Minum Tirta Moedal, Semarang City, which also found that transformational leadership had a significant effect on employee performance. This indicates that a leadership style capable of providing clear direction, good communication, and appropriate decision-making will encourage improved employee performance.

Furthermore, motivation was also shown to have a positive and significant effect on employee performance, even with a larger coefficient of influence than leadership (0.505 compared to 0.269). This finding is in line with studies conducted at various Regional Water Utility Companies (PDAM) in Indonesia, such as PDAM Palopo City and PDAM Surakarta, which show that work motivation contributes substantially to employee performance in the drinking water supply sector. This indicates that employees' internal drives, whether financial needs, recognition, or self-actualization, play an important role in improving work productivity.

Simultaneously, leadership and motivation are able to explain 87.9% of the variation in employee performance, indicating that these two variables are dominant factors in determining employee performance at Perumda Tirta Uli Pematangsiantar. Nevertheless, there is still 12.1% of other factors outside the model that management should pay attention to, such as compensation, work discipline, work environment, and organizational culture.

Conclusion

Based on the analysis and discussion, it can be concluded that:

1. Leadership has a positive and significant effect on employee performance at Perumda Tirta Uli Pematangsiantar;
2. Motivation has a positive and significant effect on employee performance at Perumda Tirta Uli Pematangsiantar;
3. Leadership and motivation simultaneously have a positive and significant effect on employee performance, with a contribution of 87.9%.

Suggestions

Based on the research results, it is recommended that the management of Perumda Tirta Uli Pematangsiantar continue to improve the quality of leadership through leadership and organizational communication training, and enhance employee motivation through incentives, rewards, and clear career development. For future researchers, it is recommended to add other variables such as compensation, work discipline, or organizational culture in order to obtain a more comprehensive research model.

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