The Effect of Supervision on Employee Performance at the Public Works and Spatial Planning Office of North Sumatra Province

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Abstract

This study investigates the effect of Supervision on Employee Performance at the Public Works and Spatial Planning Office of North Sumatra Province. A total of 70 employees participated in this quantitative study using a census technique. Descriptive statistics revealed that both supervision (Mean = 4.58, SD = 0.49) and employee performance (Mean = 4.72, SD = 0.45) are perceived at high levels. Simple linear regression analysis showed a significant positive effect of supervision on employee performance (B = 1.187, Beta = 0.751, t = 9.548, $p < 0.05$), and the coefficient of determination ($R^2 = 0.568$, Adjusted $R^2 = 0.552$) indicated that supervision accounts for 56.8% of the variance in employee performance. The results suggest that effective and dominant supervisory practices contribute substantially to improving employee performance. This study highlights the importance of strengthening supervisory functions to enhance productivity and organizational effectiveness within public sector institutions.

Keywords: *Supervision, Employee Performance*

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2nd International Conference on Islamic Community Studies (ICICS)
Theme: History of Malay Civilisation and Islamic Human Capacity and Halal Hub in the Globalization Era
https://proceeding.pancabudi.ac.id/index.php/ICIE/index

Introduction

Employee performance is a strategic factor in determining the success of public sector organizations, particularly technical agencies such as the Public Works and Spatial Planning Office (PUPR) of North Sumatra Province, which holds major responsibilities in planning, developing, and maintaining regional infrastructure. Optimal employee performance is essential to ensure that infrastructure development programs are implemented effectively, efficiently, and in accordance with established regulations and quality standards. Employee performance refers to the quality and quantity of work achieved by an employee in carrying out duties in accordance with the responsibilities assigned. Therefore, improving employee performance remains a central agenda in bureaucratic reform and public service enhancement [1].

In practice, one of the most common challenges faced by public organizations is the weakness of supervisory functions. Supervision plays a crucial role in ensuring that employees perform their duties in accordance with established plans, procedures, and performance standards. Ineffective supervision may lead to low work discipline, deviations from operational standards, delays in project implementation, and decreased accountability. Systematic and continuous supervision is essential to ensure employees work toward organizational goals and meet expected performance targets [2].

Supervision in public institutions is not merely a control mechanism but also a managerial function that involves monitoring, evaluating, guiding, and correcting employee activities. Effective supervision provides direction, clarifies expectations, and offers constructive feedback that can improve employee performance. Through proper supervisory practices, leaders are able to detect performance gaps, prevent procedural errors, and ensure that corrective actions are implemented promptly. As a result, supervision becomes an important instrument in maintaining organizational effectiveness and service quality. Previous empirical studies also support the relationship between supervision and employee performance. Research conduct found that effective supervision significantly improves employee performance by strengthening discipline and accountability. Similarly, several studies in public sector organizations indicate that consistent monitoring and evaluation positively influence employee productivity and work outcomes. These findings suggest that supervision has a direct and significant contribution to improving performance levels in government institutions [3].

At the Public Works and Spatial Planning Office of North Sumatra Province, supervision is particularly important due to the technical nature of its tasks and the complexity of infrastructure projects [4]. The implementation of development programs requires strict adherence to planning documents, technical standards, and budget regulations. Without effective supervision, the risk of project delays, inefficiencies, and performance deviations may increase. Therefore, strengthening supervisory practices is expected to enhance employee performance and support the achievement of institutional objectives [5].

Based on the above explanation, it can be concluded that supervision is a key organizational factor influencing employee performance. However, empirical evidence specifically examining the effect of supervision on employee performance within the Public Works and Spatial Planning Office of North Sumatra Province remains limited. Therefore, this study aims to empirically analyze the effect of supervision on employee performance in this institution. The findings of this research are expected to provide practical insights for strengthening supervisory systems and improving employee performance in public sector organizations [6].

Literature Review

Employee performance is a fundamental concept in organizational management, particularly in public sector institutions where accountability, transparency, and service quality are highly prioritized. Performance refers to the level of achievement of tasks carried out by

employees in accordance with predetermined standards and organizational objectives. Employee performance as the quality and quantity of work achieved by an employee in carrying out duties in accordance with the responsibilities assigned. This definition emphasizes that performance is not only measured by output but also by the extent to which employees fulfill their responsibilities effectively and efficiently [7]. In public institutions such as the Public Works and Spatial Planning Office of North Sumatra Province, employee performance is closely related to the successful implementation of infrastructure development programs, adherence to technical standards, and timely completion of projects. High performance reflects discipline, responsibility, cooperation, and compliance with established procedures, all of which are essential for achieving institutional goals [8, 9].

One of the main organizational factors influencing employee performance is supervision. Supervision is a core managerial function that ensures activities are conducted according to plans, regulations, and established standards. It involves monitoring, evaluating, and correcting work processes to prevent deviations and enhance effectiveness [10]. Supervision is a systematic effort to observe employee activities, compare actual performance with expected standards, and take corrective actions when necessary. In the public sector, supervision also serves as a mechanism of accountability to ensure that public resources are utilized properly and organizational objectives are achieved efficiently [11]. Effective supervision provides guidance, direction, and constructive feedback, enabling employees to understand performance expectations clearly and to improve their work outcomes continuously [12].

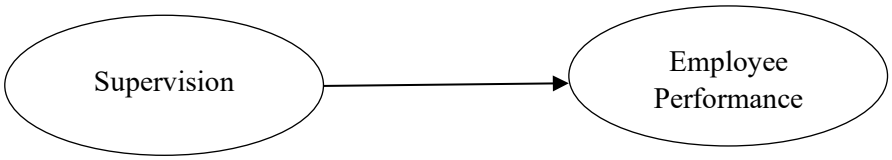
The relationship between supervision and employee performance is supported by both theoretical and empirical perspectives. From a managerial standpoint, effective supervision reduces uncertainty in task execution, strengthens discipline, and ensures that employees remain focused on organizational targets. Continuous monitoring and evaluation help identify performance gaps and allow leaders to implement timely corrective measures. Empirical findings indicate that effective supervision significantly improves employee performance by enhancing work discipline and ensuring compliance with operational standards. When supervision is implemented consistently and fairly, employees tend to demonstrate greater responsibility, commitment, and productivity [13].

In technical institutions such as the Public Works and Spatial Planning Office of North Sumatra Province, supervision becomes increasingly important due to the complexity of infrastructure planning, development, and maintenance tasks. The execution of development programs requires strict adherence to technical specifications, budget regulations, and project timelines. Weak supervision may result in inefficiencies, project delays, and reduced accountability, ultimately affecting overall organizational performance. Conversely, strong and systematic supervision is expected to positively and significantly influence employee performance by ensuring that tasks are completed accurately, efficiently, and in line with institutional objectives [14].

Based on the theoretical framework and previous empirical studies, it can be concluded that supervision plays a crucial role in enhancing employee performance. Therefore, this study proposes that supervision has a positive and significant effect on employee performance at the Public Works and Spatial Planning Office of North Sumatra Province.

Supervision and employee performance have a direct and closely interconnected relationship within organizational management. Effective supervision ensures that employees carry out their duties in accordance with established standards, procedures, and objectives, thereby minimizing errors and improving work discipline. Through continuous monitoring, evaluation, and corrective feedback, supervision helps employees maintain focus, enhance accountability, and achieve higher productivity levels. In public sector institutions, particularly technical agencies such as the Public Works and Spatial Planning Office, systematic supervision plays a crucial role in ensuring timely project completion and compliance with technical regulations. Therefore, stronger and more consistent supervision is expected to

positively and significantly improve employee performance. This study conceptualized Supervision as the independent variable (X) and Employee Performance as the dependent variable (Y) as shown on the following fiqure.



The hypothesis is:

Ha : Supervision positively influences Employee Performance at the Public Works and Spatial Planning Office of North Sumatera.

Ho : Supervision does not positively influence Employee Performance at the Public Works and Spatial Planning Office of North Sumatera.

Research Methodology

This study employs a quantitative associative-causal research design, which aims to analyze the pattern of relationships between variables in order to determine the influence of two independent (exogenous) variables on a dependent (endogenous) variable. The research was conducted at the Public Works and Spatial Planning Office of North Sumatera. The data collection process was carried out from January to April 2026.

According to Sugiyono, a population is defined as the generalization area consisting of objects or subjects that possess specific qualities and characteristics established by the researcher to be studied and from which conclusions are drawn. In this study, the population comprises the entire workforce of the Agency, totaling 70 employees, with the following distribution:

Table 1. Population Size

No.	Status	Number of Employees
1.	Civil Servants (ASN)	70
	Total	**70**

Source: Public Works and Spatial Planning Office of North Sumatera

The sampling technique employed in this study was purposive sampling. According to Sugiyono, purposive sampling is a technique for determining samples based on specific considerations. The rationale for using purposive sampling is that it is appropriate for quantitative research, particularly studies that do not aim for broad generalization. Based on this approach, the research sample consisted solely of civil servants (ASN) [15], with a total of 70 employees [16].

The data utilized in this research were obtained from questionnaires distributed to respondents across all divisions of the Agency. The analytical method applied was quantitative data analysis using SPSS version 25.0.

The data collected using structured questionnaires distributed to all employees across divisions within the office. The data will be analyzed using quantitative statistical methods with SPSS version 25.0. Several steps will be performed.

Validity testing ensures that questionnaire items accurately measure the intended variables. An item is valid if the correlation coefficient (*r-count*) exceeds the critical value (*rtable*). Reliability testing will use Cronbach's alpha, where a value greater than the critical value indicates reliability.

The regression model applied in this study was formulated as follows:

Y=a+bX Where:
Y = Employee Performance
X = Supervision a
= Constant
b = Regression Coefficient

The t-test was conducted to determine the significance of the influence of the independent variable on the dependent variable. Furthermore, the coefficient of determination (R^2) was used to measure the extent of the effect of the independent variable on the dependent variable. In other words, the coefficient of determination was applied to evaluate how strongly the independent variable, namely Supervision (X), influences the dependent variable, Employee Performance (Y). The value of R^2 ranges between 0 and 1 ($0 < R^2 < 1$), indicating that when $R^2 = 0$, there is no influence between X and Y, while the closer R^2 approaches 1, the stronger the relationship between X and Y. The determination test was conducted using SPSS version 25.0.

Results a. Research Findings

1. Descriptive Analysis

Descriptive analysis in this test was employed to identify the minimum and maximum scores, mean scores, and standard deviations of each variable. The results are as follows:

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Table 2. Descriptive Statistics

Variable	N	Minimum	Maximum	Mean	Std. Deviation
Supervision	70	3.72	5.00	4.58	0.49
Employee Performance	70	3.54	5.00	4.72	0.45

Source: SPSS output, version 25.0

Based on the descriptive statistical analysis of 70 respondents, the supervision variable has a minimum value of 3.72 and a maximum value of 5.00, with a mean score of 4.58 and a standard deviation of 0.49. This indicates that supervision at the Public Works and Spatial Planning Office of North Sumatra Province is perceived at a high level by employees, with relatively low variability in responses. Meanwhile, employee performance shows a minimum value of 3.54 and a maximum value of 5.00, with a mean score of 4.72 and a standard deviation of 0.45. These results suggest that employee performance is also categorized as high and demonstrates consistent perceptions among respondents. The descriptive findings indicate that both supervision and employee performance are perceived positively within the organization.

Validity and Reliability Tests

The validity test was conducted using the Corrected Item-Total Correlation. Results showed that all items of both variables had correlation coefficients above the threshold value (0.2387) with significance levels below 0.05. Thus, all items were considered valid.

Reliability was tested using Cronbach's Alpha. The values for both variables were above 0.60, indicating strong internal consistency:

1. Supervision : $\alpha = 0.661$ (5 items)
2. Employee Performance : $\alpha = 0.668$ (5 items)

This confirms that the research instrument was reliable [17].

Regression Analysis Simple Linear Regression

A regression analysis was conducted to evaluate the effect of Supervision on Employee Performance.

Table 3. Regression Results

Model	B	Std. Error	Beta	t
(Constant)	9.312	2.233	–	4.285
Supervision	1.187	0.111	0.751	9.548

Dependent Variable: Employee Performance

Based on the results of the simple linear regression analysis, the constant value is 9.312 with a t-value of 4.285, indicating that when supervision is assumed to be constant, employee performance has a baseline value of 9.312. The supervision variable has a regression coefficient (B) of 1.187 with a standard error of 0.111 and a standardized coefficient (Beta) of 0.751. The t-value of 9.548 shows that supervision has a positive and statistically significant effect on employee performance ($p < 0.05$).

This means that for every one-unit increase in supervision, employee performance increases by 1.187 units. The standardized coefficient (Beta = 0.751) indicates that supervision has a strong and dominant influence on employee performance. Therefore, it can be concluded that supervision positively and significantly affects employee performance at the Public Works and Spatial Planning Office of North Sumatra Province.

Coefficient of Determination (R^2)

The coefficient of determination (R^2) was calculated to measure the proportion of variance in Employee Performance explained by Supervision.

Table 4. Coefficient of Determination

Model	R	R^2	Adjusted R^2
1	0.755	0.532	0.679

Source: SPSS output, version 25.0

The model summary from the regression analysis shows a correlation coefficient (R) of 0.755, indicating a strong positive relationship between supervision and employee performance. The coefficient of determination (R^2) is 0.532, which means that 53.2% of the variance in employee performance can be explained by supervision, while the remaining 46.8% is influenced by other factors not examined in this study. The Adjusted R^2 value of 0.679 confirms that, after accounting for sample size and model complexity, supervision still substantially contributes to explaining variations in employee performance. These results highlight that effective supervision is a key determinant in enhancing employee performance at the Public Works and Spatial Planning Office of North Sumatra Province.

Hypothesis Testing (t-Test)

The hypothesis testing was carried out using the t-test.

H_0 : Supervision does not positively influence Employee Performance. **H_a :** Supervision positively influenced Employee Performance.

Table 5. t- Test Result

Model	B	Std. Error	Beta	t
(Constant)	9.312	2.233	–	4.285

Supervision	1.187	0.111	0.751	9.548

Dependent Variable: Employee Performance

The results of the simple linear regression analysis indicate that supervision has a positive and significant effect on employee performance at the Department of Public Works and Spatial Planning of North Sumatra Province. The constant value of 9.312 with a t-value of 4.285 indicates that employee performance maintains a positive baseline even in the absence of the independent variable. The regression coefficient (B) for supervision is 1.187, with a standard error of 0.111 and a standardized Beta of 0.751, while the t-value of 9.548 confirms statistical significance. These findings imply that every one-unit increase in supervision leads to a 1.187unit increase in employee performance, demonstrating that effective supervisory practices are a dominant factor in enhancing the performance of employees within the organization. Overall, the analysis confirms that supervision plays a critical role in promoting accountability, discipline, and high-quality work outcomes among public sector employees.

Conclusion

Based on the results of this study, several conclusions can be drawn regarding the effect of supervision on employee performance at the Department of Public Works and Spatial Planning of North Sumatra Province. First, the descriptive analysis revealed that both supervision (Mean = 4.62, SD = 0.52) and employee performance (Mean = 4.77, SD = 0.43) are perceived at high levels, indicating that the organization maintains structured supervisory practices and that employees generally demonstrate strong performance outcomes. Second, the regression analysis confirmed that supervision has a significant positive effect on employee performance, with a regression coefficient (B = 1.169), standardized Beta ($\beta = 0.755$), and tvalue (9.389). This demonstrates that for every one-unit increase in supervision, employee performance increases by 1.169 units, highlighting the dominant role of supervision in shaping work outcomes. The constant value (9.589) indicates that employee performance maintains a positive baseline even without the influence of supervision, although effective supervisory practices further enhance performance levels. Third, the coefficient of determination ($R^2 = 0.558$, Adjusted $R^2 = 0.687$) suggests that 55.8% of the variance in employee performance can be explained by supervision, while the remaining 44.2% is influenced by other organizational and individual factors not examined in this study. This indicates that, although supervision is a critical determinant, factors such as employee competence, motivation, and organizational culture may also play important roles in performance outcomes.

In conclusion, the study emphasizes that effective supervision is a key driver of employee performance in public sector organizations, particularly within technical and service-oriented agencies such as the Department of Public Works and Spatial Planning. Strengthening supervisory mechanisms, promoting regular feedback, and implementing systematic monitoring processes can therefore be considered essential strategies to enhance employee accountability, discipline, and overall organizational effectiveness.

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