

The Effect of Employee Competence on Employee Performance at the Department of Transportation of Dairi Regency

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Abstract

This study examines the effect of employee competence on employee performance at the Department of Transportation of Dairi Regency . The population of this research consisted of 66 employees, all of whom were included as respondents using a census (total sampling) technique. The data were analyzed using descriptive statistics and simple linear regression analysis. The descriptive results indicate that employee competence ($M = 4.72$; $SD = 0.41$) and employee performance ($M = 4.85$; $SD = 0.52$) are both categorized at high levels, suggesting that the organization demonstrates strong competency standards and favorable performance outcomes. The regression analysis reveals that employee competence has a significant positive effect on employee performance, with a regression coefficient ($B = 1.142$), standardized Beta ($\beta = 0.728$), and t-value (8.964). These findings imply that every one-unit increase in employee competence contributes to a 1.142-unit increase in employee performance, confirming the substantial role of competence in enhancing work outcomes. The constant value (8.975) indicates that employee performance remains at a positive baseline level even without the influence of competence, although competence significantly strengthens it. The model summary shows a correlation coefficient ($R = 0.742$) and a coefficient of determination ($R^2 = 0.551$), indicating that employee competence explains 55.1% of the variance in employee performance, while the remaining 44.9% is influenced by other factors not examined in this study. These results highlight that employee competence is a critical determinant of employee performance improvement within public sector organizations.

Keywords: *Employee Competence, Employee Performance, Public Sector, Organizational Effectiveness*

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Introduction

The development of the transportation sector plays a vital role in supporting community mobility, regional economic growth, and the smooth implementation of social and governmental activities. At the regional level, the Department of Transportation of Dairi Regency holds a strategic position in planning, managing, and supervising transportation services to ensure that they operate effectively, safely, and sustainably [1]. As a technical implementing agency of the local government, the Department of Transportation is responsible for traffic management, transportation regulation, and the provision of public transport services. In carrying out these responsibilities, employee performance becomes a crucial determinant of organizational success. High-performing employees contribute directly to service quality, regulatory compliance, and public satisfaction. Therefore, improving employee performance is a fundamental priority for public sector organizations, particularly those operating in dynamic and service-oriented sectors such as transportation [2].

In public administration literature, employee performance is generally defined as the level of achievement in carrying out tasks and responsibilities in accordance with established standards and organizational objectives. Employee performance in public institutions is influenced by both individual capabilities and organizational support systems [3]. Performance indicators typically include work quality, productivity, timeliness, responsibility, and service orientation. In the context of regional transportation agencies, performance also reflects the ability of employees to respond to regulatory changes, manage transportation systems efficiently, and provide responsive services to the community. Consequently, understanding the factors that influence employee performance is essential to strengthening institutional effectiveness [4].

One of the most fundamental factors affecting employee performance is employee competence. Competence refers to a set of knowledge, skills, abilities, and work attitudes that enable individuals to perform their duties effectively and professionally. Competence represents a strategic human resource asset that determines how well employees can adapt to job demands and organizational changes [5]. Similarly employee competence significantly enhances work effectiveness, decision-making accuracy, and problem-solving capacity in public sector organizations [6]. Employees who possess adequate technical knowledge, administrative skills, and professional attitudes are more capable of delivering high-quality services and meeting performance targets [7].

In the context of government institutions, competence is not limited to technical expertise but also includes behavioral competencies such as integrity, accountability, communication skills, and public service orientation. Competency-based human resource management is essential for improving public sector performance and ensuring sustainable governance [8]. For transportation agencies, employee competence may include understanding traffic regulations, transportation planning principles, safety standards, and service procedures. Without sufficient competence, employees may encounter difficulties in executing tasks effectively, which can ultimately hinder organizational performance [9].

Despite its importance, competency gaps are still frequently observed in local government institutions. These gaps may arise from limited training opportunities, mismatches between educational background and job assignments, or inadequate professional development programs. Continuous competency development through structured training and evaluation systems is necessary to maintain and improve employee performance in public organizations. Therefore, strengthening employee competence is not only an individual responsibility but also an institutional obligation that requires strategic planning and consistent implementation [10].

Based on the theoretical and empirical considerations above, examining the effect of employee competence on employee performance at the Department of Transportation of Dairi Regency becomes highly relevant. This study seeks to provide empirical evidence regarding the extent to which employee competence contributes to performance improvement within a regional public institution. The findings are expected to serve as a basis for policy formulation,

particularly in designing competency development strategies aimed at enhancing employee performance and improving the overall quality of transportation services provided to the community [11].

Literature Review

Employee competence is widely recognized as a fundamental determinant of organizational success, particularly in public sector institutions where accountability and service quality are essential. Competence refers to an integrated set of knowledge, skills, abilities, and professional attitudes that enable employees to perform their duties effectively and in accordance with established standards. Competence includes technical competence related to job-specific expertise, managerial competence associated with planning and decision-making, and behavioral competence reflected in ethics, communication skills, and responsibility [12]. These dimensions collectively shape how employees execute their tasks and respond to workplace challenges. In public administration, competency-based human resource management is increasingly emphasized as a strategic approach to aligning individual capabilities with institutional objectives. Strengthening employee competence contributes significantly to improving public sector effectiveness, transparency, and service delivery outcomes [13].

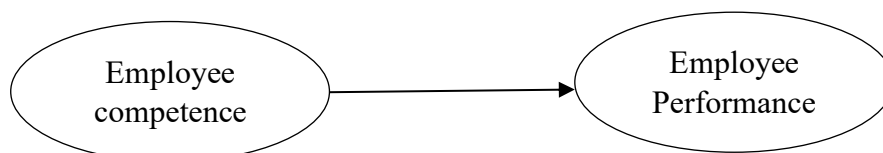
Employee performance, on the other hand, represents the level of achievement attained by employees in carrying out their roles and responsibilities within a certain period. It reflects the extent to which work results meet quantitative and qualitative standards determined by the organization. Performance as the outcome of work achieved by individuals or groups in accordance with their authority and responsibility in order to accomplish organizational goals [14]. In government institutions, performance is commonly measured through indicators such as productivity, quality of service, timeliness, discipline, accountability, and responsiveness to public needs. Employee performance in the public sector is influenced by internal factors, including competence and motivation, as well as organizational systems that support effective work implementation [15]. Within transportation agencies, performance is closely linked to the effective management of traffic systems, enforcement of transportation regulations, and provision of safe and efficient services to the community.

The relationship between employee competence and employee performance is strongly supported by human capital theory, which posits that individuals with higher levels of knowledge and skills tend to generate superior work outcomes. Competent employees are better equipped to complete tasks accurately, solve problems efficiently, and adapt to regulatory and operational changes. Employee competence has a positive and significant effect on performance in local government institutions, as it enhances decision-making accuracy and service quality [16]. Furthermore, competence directly affects job performance because it determines how effectively employees translate organizational policies into practical actions. In the context of the Department of Transportation of Dairi Regency, employee competence plays a crucial role in ensuring that transportation policies are implemented properly and that public services operate efficiently.

Competence is a primary driver of performance improvement in public organizations. Competence not only strengthens technical capability but also supports adaptability, professionalism, and continuous performance enhancement. Therefore, investing in competency development through structured training programs, performance evaluation systems, and career development initiatives is considered a strategic measure to improve employee performance. Based on these theoretical and empirical perspectives, employee competence can be understood as a key factor influencing employee performance, forming a strong foundation for examining its effect within regional government institutions.

In conclusion, the literature indicates that employee competence has significant potential to influence employee performance by strengthening employees' knowledge, skills, professional attitudes, problem-solving abilities, and adaptability in carrying out their duties. Competent employees are more capable of performing tasks effectively, complying with

regulations, and delivering high-quality public services. However, empirical studies focusing specifically on the relationship between employee competence and employee performance in local government institutions remain relatively limited, particularly within regional transportation agencies. Therefore, this research contributes to the existing body of knowledge by empirically examining the effect of employee competence on employee performance at the Department of Transportation of Dairi Regency. In this study, employee competence is conceptualized as the independent variable (X), while employee performance is positioned as the dependent variable (Y), as illustrated in the conceptual framework presented in the following figure.



The hypothesis is:

Ha : Employee competence positively influences employee performance at the Department of Transportation of Dairi Regency.

Ho : Employee competence does not positively influence employee performance at the Department of Transportation of Dairi Regency.

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 Department of Transportation of Dairi Regency. 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 [17]. In this study, the population comprises the entire workforce of the Agency, totaling 66 employees, with the following distribution:

Table 1. Population Size

No.	Status	Number of Employees
1.	ASN	66
Total		66

Source : Department of Transportation of Dairi Regency

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, in this study, the selection of participants was intentionally limited to individuals serving as civil servants (ASN), ensuring that the focus remained on a specific and relevant occupational group [18]. Altogether, the research involved 66 employees who fulfilled the inclusion criteria and were officially designated as the sample for data collection and analysis [19].

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 (*r-table*). 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 = Employee competence

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 Employee competence (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 presented as follows:

The table title is at the top, while the image title is written below. If tables and figures can be included in a single column, then the writing example is as follows:

Table 2. Descriptive Statistics

Variable	N	Minimum	Maximum	Mean	Std. Deviation
Employee competence	66	3.28	5.00	4.72	0.41
Employee Performance	66	3.46	5.00	4.85	0.52

Source: SPSS output, version 25.0

The descriptive statistical results of the research variables, namely employee competence and employee performance, involving 66 respondents at the Department of Transportation of Dairi Regency. The results show that employee competence has a minimum value of 3.28 and a maximum value of 5.00, with a mean score of 4.72 and a standard deviation of 0.41. This indicates that, on average, employee competence is categorized at a high level. The relatively small standard deviation suggests that the responses are homogeneous, meaning that most employees perceive competence within the organization to be consistently strong.

Meanwhile, employee performance has a minimum value of 3.46 and a maximum value of 5.00, with a mean score of 4.85 and a standard deviation of 0.52. These findings also place

employee performance in the high category, reflecting favorable work outcomes among employees. The standard deviation value indicates a moderate level of variation in responses, but overall performance levels remain consistently high. These descriptive results suggest that the organization demonstrates strong competency standards, which are aligned with high employee performance levels, providing an initial indication of a positive relationship between the two variables.

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 (Sugiyono, 2017).

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

- 1. Employee competence : $\alpha = 0.622$ (4 items)
- 2. Employee Performance : $\alpha = 0.634$ (4 items)

This confirms that the research instrument was reliable [20]

Regression Analysis

Simple Linear Regression

A regression analysis was conducted to evaluate the effect of employee competence on employee performance.

Table 3. Regression Results

Model	B	Std. Error	Beta	t
(Constant)	8.975	2.187	–	4.106
Employee competence	1.142	0.127	0.728	8.964

Dependent Variable: Employee Performance

The regression equation can be expressed as:

The results of the simple linear regression analysis examining the effect of employee competence on employee performance at the Department of Transportation of Dairi Regency. The regression output shows that the constant value is 8.975 with a t-value of 4.106, indicating that employee performance maintains a positive baseline level even without the influence of the independent variable.

The regression coefficient (B) for employee competence is 1.142 with a standard error of 0.127 and a standardized Beta value of 0.728. The t-value of 8.964 demonstrates that employee competence has a statistically significant positive effect on employee performance. This means that every one-unit increase in employee competence leads to a 1.142-unit increase in employee performance. The standardized Beta coefficient further indicates that employee competence has a strong contribution to explaining variations in performance. Overall, these findings confirm that higher levels of competence among employees are associated with improved performance outcomes within the organization.

Coefficient of Determination (R²)

The coefficient of determination (R²) was calculated to measure the proportion of variance in employee performance explained by employee competence.

Table 4. Coefficient of Determination

Model	R	R ²	Adjusted R ²
1	0.742	0.551	0.544

Source: SPSS output, version 25.0

The model summary shows the coefficient of determination resulting from the simple linear regression analysis conducted at the Department of Transportation of Dairi Regency. The correlation coefficient (R) is 0.742, indicating a strong positive relationship between employee competence and employee performance. This suggests that higher levels of employee competence are associated with higher levels of employee performance.

The coefficient of determination (R^2) is 0.551, which means that 55.1% of the variation in employee performance can be explained by employee competence. Meanwhile, the remaining 44.9% is influenced by other factors not examined in this study. The Adjusted R^2 value of 0.544 shows that after adjusting for sample size and model complexity, employee competence still explains 54.4% of the variance in employee performance. These findings confirm that employee competence makes a substantial contribution to improving employee performance within the organization.

Hypothesis Testing (t-Test)

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

H_0 : Employee competence does not positively influence employee performance.

H_a : Employee competence positively influenced employee performance.

Table 5. t- Test Result

Model	B	Std. Error	Beta	t
(Constant)	8.975	2.187	–	4.106
Employee competence	1.142	0.127	0.728	8.964

Dependent Variable: Employee Performance

The results of the t-test analysis examining the partial effect of employee competence on employee performance at the Department of Transportation of Dairi Regency. The constant value is 8.975 with a t-value of 4.106, indicating that employee performance maintains a positive baseline even without the influence of the independent variable.

The regression coefficient (B) for employee competence is 1.142 with a standard error of 0.127 and a standardized Beta value of 0.728. The t-value of 8.964 indicates that employee competence has a statistically significant effect on employee performance. These findings confirm that employee competence positively influenced employee performance. This means that every one-unit increase in employee competence leads to a 1.142-unit increase in employee performance, demonstrating that higher levels of competence significantly enhance employee work outcomes within the organization.

Conclusion

Based on the results of the descriptive and inferential statistical analyses, this study concludes that employee competence has a significant and positive effect on employee performance at the Department of Transportation of Dairi Regency. The descriptive findings indicate that both employee competence and employee performance are categorized at high levels, suggesting that the organization has relatively strong human resource capacity accompanied by favorable performance outcomes. However, high average scores do not eliminate the possibility of competency gaps among certain employees, which may affect long-term organizational sustainability if not addressed systematically.

The regression analysis confirms that employee competence positively influences employee performance, as evidenced by the positive regression coefficient ($B = 1.142$) and significant t-value (8.964). This implies that improvements in employee competence—encompassing knowledge, technical skills, and professional attitudes—directly contribute to enhanced work results. The coefficient of determination ($R^2 = 0.551$) further indicates that 55.1% of the variation in employee performance is explained by employee competence. Although this demonstrates a substantial contribution, it also reveals that 44.9% of performance

variance is influenced by other factors not examined in this study, such as leadership, organizational culture, motivation, work environment, or compensation systems.

Critically, while competence proves to be a strong predictor of performance, it should not be viewed as a single determinant of organizational effectiveness. Sustainable performance improvement requires integrated human resource strategies, including continuous training, performance evaluation systems, and merit-based career development. In addition, institutional support mechanisms must ensure that competencies are continuously updated in line with regulatory developments and evolving transportation service demands.

This study not only empirically validates the importance of employee competence in improving performance but also highlights the need for strategic competency development policies within regional government institutions. Strengthening structured training programs, aligning job placement with educational background and expertise, and implementing competency-based management systems are essential steps to maintain and enhance employee performance in the long term.

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