

Influence motivation, competence and work environment on the performance of employees of the regional development planning, research and innovation agency of Serdang Bedagai Regency

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ABSTRAK

Kinerja pegawai merupakan komponen penting dalam keberhasilan perencanaan pembangunan daerah di Badan Perencanaan Pembangunan, Penelitian, Riset, dan Inovasi Daerah (BAPPERIDA) Kabupaten Serdang Bedagai. Tujuan penelitian ini adalah untuk menguji pengaruh motivasi, kompetensi, dan lingkungan kerja terhadap kinerja pegawai secara parsial dan simultan. Data dikumpulkan dari seluruh 43 pegawai menggunakan kuesioner, kemudian dianalisis menggunakan metode kuantitatif dengan pendekatan asosiatif. Perangkat lunak *IBM SPSS Statistics* digunakan untuk menganalisis data dengan pendekatan regresi linier berganda. Berdasarkan temuan penelitian, hanya variabel kompetensi yang secara signifikan dan positif memengaruhi kinerja pegawai. Sementara itu, faktor motivasi dan lingkungan kerja menunjukkan pengaruh yang positif namun tidak signifikan. Namun, hasil uji simultan menunjukkan bahwa kinerja pegawai secara signifikan dipengaruhi oleh motivasi, kompetensi, dan lingkungan kerja, dengan nilai kontribusi sebesar 29,2%. Hasil ini menunjukkan bahwa di BAPPERIDA Kabupaten Serdang Bedagai, peningkatan kompetensi pegawai merupakan pendorong utama dalam optimalisasi efektivitas organisasi.

Kata Kunci: motivasi; kompetensi; lingkungan kerja; kinerja pegawai

ABSTRACT

Employee performance is a crucial component in the success of regional development planning at the Regional Development Planning, Research, and Innovation Agency (BAPPERIDA) of Serdang Bedagai Regency. The purpose of this study was to examine the influence of motivation, competence, and work environment on employee performance partially and simultaneously. Data were collected from all 43 employees using a questionnaire, then analyzed using a quantitative method with an associative approach. IBM SPSS Statistics software was used to analyze the data with a multiple linear regression approach. Based on the research findings, only the competence variable significantly and positively influenced employee performance. Meanwhile, motivation and work environment factors showed a positive but insignificant influence. However, the results of the simultaneous test showed that employee performance was significantly influenced by motivation, competence, and work environment, with a contribution value of 29.2%. These results indicate that at BAPPERIDA of Serdang Bedagai Regency, improving employee competence is a key driver in optimizing organizational effectiveness.

Keyword: motivation; competence; work environment; employee performance

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1. INTRODUCTION

The success of regional development is a manifestation of the quality of planning developed by the local government. In this context, the Regional Development Planning, Research, and Innovation Agency

(BAPPERIDA) of Serdang Bedagai Regency plays a crucial role as the central control center for regional development. However, BAPPERIDA's effectiveness depends heavily on the performance of its employees. Employee performance goes beyond simply completing administrative tasks; it also includes the ability to produce high-quality, timely, and accountable outputs in accordance with good governance standards.

Currently, the organizational effectiveness of the Regional Development Planning, Research, and Innovation Agency (BAPPERIDA) still faces fundamental challenges. The most prominent challenge is delays in completing core tasks and functions. These delays have resulted in suboptimal achievement of BAPPERIDA's *Key Performance Indicators* (KPI) during each evaluation period. Failure to meet timeline targets and KPIs indicates an urgent need for improvements in human resource management.

Motivation is the force, drive, or reason that encourages a person to act, move, and persist in achieving specific goals (Sevilla & Novialumi, 2025). The level of work motivation has a positive and significant influence on improving employee performance. This phenomenon shows a linear relationship, where higher motivation leads to more optimal performance outcomes. Strong motivation inspires employees to exert greater effort and fosters a dynamic work environment (Amalia et al., 2025). Motivation can also be understood as the actualization of internal strength that activates and directs behavior, resulting from the integrated interaction between motives and observed circumstances. This process is dynamic and functions to achieve the desired outcomes of individuals (Prihartanta, 2015). Motivation in the workplace can be categorized into two main types: intrinsic and extrinsic motivation. Extrinsic motivation is associated with external factors such as incentives, rewards, and recognition from superiors, while intrinsic motivation originates from within the individual (Peramatzis & Galanakis, 2022).

Initial observations indicate a decline in internal employee motivation to exert extra effort in carrying out their duties. This condition is identified as a result of a suboptimal non-financial reward system and limited career development opportunities. The perception of minimal promotion prospects leads to motivational stagnation, causing strategic tasks to be perceived merely as routine activities, lacking innovation.

In addition to motivation, competency is a crucial factor, considering the technical and strategic nature of planning workloads. Competence refers to an individual's underlying characteristics that influence how they think and behave in various situations and remain consistent over time. It reflects the motives, traits, and skills of individuals who perform effectively in the workplace (Widodo & Yandi, 2022). There is a clear and directional relationship between competency levels and performance effectiveness. Mastery of knowledge, skills, and work capabilities is a critical factor that directly supports performance improvement (Olvi & Rosnani, 2026).

At present, there is a significant competency gap between employees' educational backgrounds and job requirements, particularly in macroeconomic and spatial data analysis. This issue is further exacerbated by limited access to *up-to-date* technical education, training, and technical guidance. Without continuous competency development, employees will face difficulties adapting to the dynamic changes in regulations and planning systems. The ability to adapt to technological innovations and the willingness to continuously improve oneself are essential competencies (Asih et al., 2024).

Optimal performance also requires support from a conducive work environment. Employee performance is greatly influenced by a supportive work environment (Agustin et al., 2026). The work environment refers to all conditions surrounding employees while performing their daily tasks. Both social and technical aspects of the work environment play a significant role in shaping employee performance (Nabawi, 2019). Improving workplace comfort contributes positively to achieving performance targets (Lianasari & Ahmadi, 2022). Physically, information technology infrastructure, such as computer devices and stable network connections for *e-planning* systems, still frequently encounters technical issues that hinder employee performance. Meanwhile, from a non-physical perspective, the lack of harmonious communication between sectors impedes cross-sector coordination. Considering the comprehensive and integrative nature of planning documents, this lack of coordination risks causing data fragmentation and inconsistencies in development policies.

2. RESEARCH METHOD

This research was conducted at the Regional Development Planning, Research, and Innovation Agency (BAPPERIDA) of Serdang Bedagai Regency, located at Jalan Negara No. 300, Sei Rampah. A research method is a scientific approach or system used in conjunction with other disciplines and research design to produce accurate and comprehensible results. In general, two methodologies are recognized in research: qualitative and quantitative. In this study, the author employed a quantitative method to analyze the problem.

Quantitative research is a method that focuses on collecting and analyzing numerical data to test hypotheses, measure variables, and examine causal relationships between phenomena. The primary objective

of quantitative research is to collect numerical data for statistical analysis. Various techniques, including surveys, can be used to obtain this data. Hypothesis testing, identifying trends and correlations between variables, and drawing generalizations about the population under study are the main purposes of quantitative research. The population in this study consisted of all 43 employees of the Regional Development Planning, Research, and Innovation Agency (BAPPERIDA) of Serdang Bedagai Regency.

This study aims to examine the relationship between the dependent variable, employee performance (Y), and the independent variables, motivation (X_1), competence (X_2), and work environment (X_3). Quantitative research emphasizes measurement and numerical analysis, aiming to evaluate the scope of the investigation and generalize the findings as empirical facts or truths (Firmansyah et al., 2021).

The data were processed using *IBM SPSS Statistics* through several systematic stages. First, validity and reliability tests were conducted. Second, classical assumption tests were performed to ensure that the model met the requirements of normality, was free from multicollinearity, and did not exhibit heteroscedasticity. Finally, the model was analyzed statistically using multiple linear regression analysis, the coefficient of determination (R^2) test, the simultaneous significance test (F -test), and the partial test (t -test).

3. RESULTS AND DISCUSSION

A. Validity Test

Instrument validity testing is conducted to ensure that the questionnaire used is capable of accurately measuring the research variables. According to Janna and Herianto (2021), the essence of this test is to determine the degree of accuracy or validity of a measuring instrument in performing its function. The method commonly applied is *Pearson Product Moment* correlation analysis. In this procedure, a statement item is declared valid if the correlation coefficient value (r -calculated) is greater than the table value (r -table) at a significance level of 5% (Sugiyono, 2016).

Table 1. Validity Test of All Variables

Variables	No. Item	r-calculated
Motivation (X_1)	X1.1	0.625
	X1.2	0.698
	X1.3	0.792
	X1.4	0.654
	X1.5	0.678
	X1.6	0.600
	X1.7	0.541
	X1.8	0.302
	X1.9	0.362
	X1.10	0.307
Competence (X_2)	X2.1	0.339
	X2.2	0.380
	X2.3	0.444
	X2.4	0.472
	X2.5	0.360
	X2.6	0.601
	X2.7	0.572
	X2.8	0.527
	X2.9	0.523
	X2.10	0.648
Work Environment (X_3)	X3.1	0.334
	X3.2	0.350
	X3.3	0.592
	X3.4	0.629
	X3.5	0.532
	X3.6	0.458
	X3.7	0.596
	X3.8	0.380
	X3.9	0.517
	X3.10	0.627
Employee Performance (Y)	Y.1	0.584
	Y.2	0.612
	Y.3	0.626
	Y.4	0.739
	Y.5	0.327
	Y.6	0.511
	Y.7	0.444
	Y.8	0.639

Variables	No. Item	r-calculated
	Y.9	0.380
	Y.10	0.394

The population (n) in this study is 43, with degrees of freedom (df) = $n - 2$. Thus, $df = 43 - 2 = 41$. Based on the r -table for a simple correlation coefficient, the value is 0.3008. Based on the results presented in Table 1, it can be concluded that all statement items for each variable have r -calculated values greater than r -table, indicating that all items are valid.

B. Reliability Test

The purpose of reliability testing is to ensure the consistency of the questionnaire, indicating that it produces stable and consistent results when used repeatedly under similar conditions. After establishing the validity of the questionnaire items, reliability testing is conducted.

The *Cronbach's Alpha* coefficient is used to measure reliability, with a minimum threshold of 0.600. The results of the reliability test are presented as follows:

Table 2. Reliability Test of All Variables

Variables	Cronbach's Alpha
Motivation (X_1)	0.759
Competence (X_2)	0.621
Work Environment (X_3)	0.674
Employee Performance (Y)	0.713

Based on the results in Table 2, all variables have *Cronbach's Alpha* coefficients greater than 0.600. Therefore, it can be concluded that all variables are reliable.

C. Normality Test

The normality test is conducted to determine whether the data are normally distributed. Various methods can be used to test data normality, but differing results may lead to confusion among researchers. To obtain reliable results, the *Shapiro-Wilk* normality test is commonly applied for samples of fewer than 50 observations (Oktaviani & Notobroto, 2014).

This test is performed using the *Shapiro-Wilk* statistical approach and by observing the data distribution through a graphical representation. A normal distribution is indicated when the data points are spread along the diagonal line.

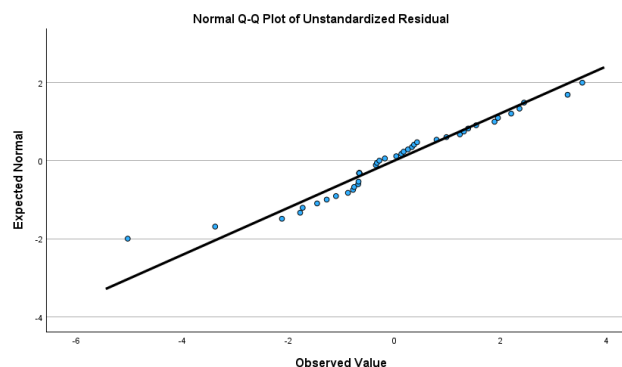


Figure 1. Normality Test Results (Scatter Diagram)

The statistical results of the *Shapiro-Wilk* test are presented as follows:

Table 3. Shapiro-Wilk Test

Test Statistics	Value
df	43
Statistic	0.962
Sig.	0.158

Based on the results of the normality test, the significance value obtained is 0.158. Since this value is greater than 0.05, it can be concluded that the data are normally distributed.

D. Multicollinearity Test

Within the framework of multiple linear regression analysis, the multicollinearity test is a crucial procedure in the series of classical assumption tests. This evaluation aims to verify the absence of strong linear relationships among the explanatory variables, as a fundamental requirement for a reliable regression model is the independence among independent variables.

Technically, the degree of correlation among predictors is measured using statistical indicators, namely *Tolerance* and *Variance Inflation Factor (VIF)* values.

Table 4. Multicollinearity Test

Independent Variables	Tolerance	VIF
Motivation (X ₁)	0.742	1.348
Competence (X ₂)	0.716	1.396
Work Environment (X ₃)	0.794	1.260

The data presented in Table 4 indicate that all independent variables in this study meet the classical assumption criteria. This is evidenced by *Tolerance* values greater than 0.10 and *VIF* values less than 10. These findings confirm that the regression model is free from multicollinearity, allowing all variables to be included simultaneously in the regression analysis. Therefore, the integrity and validity of the estimation results can be statistically justified.

E. Heteroscedasticity Test

To ensure the accuracy of the regression model, a heteroscedasticity test is conducted to detect any inequality in the variance of residuals (Sujarweni & Utami, 2023). One commonly used method is the *Glejser test*. If the homoscedasticity assumption is met, the estimated parameters can be considered valid and reliable.

Table 5. Heteroscedasticity Test

Variables	Sig.
Motivation (X ₁)	0.058
Competence (X ₂)	0.631
Work Environment (X ₃)	0.668

Based on the statistical test results, the regression model meets the assumption of homoscedasticity. This conclusion is supported by the significance values of all variables exceeding the alpha level of 0.05, indicating that the model is free from heteroscedasticity.

F. Multiple Linear Regression Test

To evaluate the contribution of independent variables to the dependent variable, multiple linear regression analysis was applied. This method is appropriate for examining the simultaneous influence of two or more independent variables on a dependent variable. The results of the regression analysis are presented as follows:

Table 6. Multiple Linear Regression Results

Variables	B	Std. Error	Beta
(Constant)	16.027	6.198	–
Motivation (X ₁)	0.015	0.088	0.026
Competence (X ₂)	0.515	0.149	0.531
Work Environment (X ₃)	0.086	0.143	0.087

Based on Table 6, the regression equation is:

$$Y = 16.027 + 0.015X_1 + 0.515X_2 + 0.086X_3$$

1. The constant value of 16.027 indicates the baseline level of employee performance when motivation, competence, and work environment are assumed to be zero. This reflects the expected value of employee performance in the absence of these independent variables.
2. The regression coefficient for motivation (0.015) indicates a positive relationship with employee performance. Under *ceteris paribus* conditions (assuming other variables remain constant), a one-unit increase in motivation is associated with a 0.015-unit increase in performance. This suggests that enhancing motivation contributes positively, although relatively small, to improving performance.
3. Competence has the largest coefficient, with a value of 0.515. This implies that a one-unit increase in competence leads to a 0.515-unit increase in employee performance. This substantial coefficient indicates that competence is the most dominant factor influencing employee performance compared to other variables.
4. The work environment variable also shows a positive influence on employee performance, with a regression coefficient of 0.086. This means that a one-unit improvement in the work environment is associated with a 0.086-unit increase in performance. Collectively, these independent variables contribute to enhancing work effectiveness and positively influencing employee performance.

G. Coefficient of Determination (R²) Test

Table 7. Coefficient of Determination

R	R Square	Adjusted R Square	Std. Error
0.585	0.343	0.292	1.75071

Referring to the results in Table 7, the *Adjusted R Square* value is 0.292, indicating that the independent variables collectively explain 29.2% of the variation in the dependent variable. The remaining 70.8% is influenced by other variables not included in this research model.

H. Simultaneous Test (*F-test*)

Table 8. F-test

Model	F	Sig.
1	6.778	< 0.001

The results of this study indicate that employee performance is significantly influenced by the combination of motivation, competence, and work environment variables. The significance value is below 0.05, meaning that the hypothesis regarding the simultaneous effect can be accepted.

I. Partial Test (*t-test*)

Table 9. t-test

Variables	t-calculated	Sig.
Motivation (X_1)	0.712	0.864
Competence (X_2)	3.462	0.001
Work Environment (X_3)	0.599	0.552

The findings indicate varying effects of each independent variable on employee performance. Based on the partial test, only the competence variable (X_2) has a significant effect, as evidenced by the *t-calculated* value of 3.462, which exceeds the *t-table* value of 2.01954, and a significance value below 0.05.

In contrast, motivation (X_1) and work environment (X_3) do not have a significant effect on performance. This is indicated by *t-calculated* values of 0.712 and 0.599, respectively, which are lower than the *t-table* value, along with significance values greater than 0.05. Therefore, it can be concluded that employee performance in this model is more dominantly influenced by competence compared to motivation and work environment factors.

J. Discussion

1) The Influence of Motivation on Employee Performance

Based on the results of the statistical analysis using the *t-test*, the motivation variable has a *t-calculated* value of 0.712, which is lower than the *t-table* value of 2.01954, with a significance level of 0.864 (> 0.05). This indicates that although motivation shows a positive relationship with employee performance, its influence is not statistically significant.

This finding is consistent with previous research by Anshari et al. (2019), which concluded that although motivation contributes positively, it is not a significant determinant of employee performance in the workplace.

2) The Influence of Competence on Employee Performance

Based on the results of the quantitative analysis, competence is identified as a crucial determinant of employee performance within the BAPPERIDA of Serdang Bedagai Regency. Empirical findings indicate a significant positive relationship between competence and performance, as evidenced by a significance value of 0.001.

This result is in line with the study conducted by Elizar and Tanjung (2018), which states that competence is a key factor that significantly influences employee performance. Mastery of knowledge, skills, and work capabilities directly determines the quality of output. This indicates a linear relationship, where improvements in competence lead to enhanced work effectiveness.

Furthermore, employees with appropriate qualifications demonstrate greater capability in carrying out their duties according to their job descriptions. Therefore, the development of employee knowledge and skills through competency enhancement becomes a key driver in optimizing overall organizational performance.

3) The Influence of Work Environment on Employee Performance

Based on the results of hypothesis testing, the work environment variable has a *t-calculated* value of 0.599, which is lower than the *t-table* value of 2.01954, with a significance value of 0.552 (> 0.05). This indicates that the work environment has a positive but not statistically significant effect on employee performance.

This finding supports previous research by Bukhari and Pasaribu (2019), which also found that the work environment has a positive but not significant influence on individual performance. This suggests that improvements in the work environment alone are not sufficient to produce substantial changes in employee performance.

4) The Simultaneous Influence of Motivation, Competence, and Work Environment on Employee Performance

Based on empirical findings, there is a significant simultaneous effect of motivation, competence, and work environment on employee performance at BAPPERIDA Serdang Bedagai Regency. This is confirmed by the results of the *F-test*, which show a significance value below 0.05.

The coefficient of determination (R^2) value of 0.292 indicates that 29.2% of the variation in employee performance can be explained by the combined influence of motivation, competence, and work environment. Meanwhile, the remaining 70.8% is influenced by other factors outside the research model.

4. CONCLUSION

Based on the results of data analysis and discussion, this study concludes several key findings. Employee performance at the Regional Development Planning, Research, and Innovation Agency (BAPPERIDA) of Serdang Bedagai Regency is primarily determined by employee competence, as this variable is the only factor that has a significant partial effect. This indicates that the success of planning functions within the agency is highly dependent on the technical skills, knowledge, and capabilities of its employees.

Although motivation and work environment variables show a positive relationship with employee performance, they do not have a statistically significant partial effect. This suggests that motivation and supportive work conditions alone are not sufficient to improve performance without being supported by strong technical competence. In other words, there is an indication of a competency gap, where improvements in motivation and workplace conditions must be accompanied by the development of employee capabilities to achieve optimal performance outcomes.

Furthermore, the results of the simultaneous test show that motivation, competence, and work environment collectively have a significant influence on employee performance, with a contribution value of 29.2%. This implies that while these variables play an important role, a larger proportion, namely 70.8%, is influenced by other factors outside the scope of this research model. Therefore, future research is recommended to explore additional variables that may have a more dominant influence on employee performance.

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