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The Synergy Effect: Managerial Competence and Work Motivation in Teacher Performance

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ABSTRACT

This study aims to analyze the influence of principals' managerial competence and work motivation on teacher performance in senior and vocational high schools in Pemulutan District. Using a quantitative approach with an ex post facto design, the research involved 81 teachers through census technique. Data collection instruments consisted of validated Likert-scale questionnaires ($r > 0.374$; $\alpha > 0.90$). Data analysis employed Spearman correlation and multiple linear regression. Based on the analysis, principals' managerial competence has a positive and significant effect on teacher performance with a moderate contribution, while work motivation shows a stronger and more dominant positive influence with a higher contribution. Simultaneously, both variables significantly affect teacher performance with a strong combined contribution and a small synergistic effect. The regression equation further indicates that work motivation has a greater impact than managerial competence, making it the most influential factor in improving teacher performance. Managerial implications: principals need to optimize managerial competence while facilitating the development of teachers' work motivation to enhance education quality.

1. Introduction

Education serves as a fundamental pillar in nation-building. Law Number 20 of 2003 on the National Education System mandates that education functions to develop abilities and shape the dignified character of the nation. In this context, teachers play a central role as the most influential element in creating quality educational processes and outcomes (Supardi, 2014). However, educational quality heavily depends on optimal teacher performance. Teacher performance is defined as educators' ability to carry out learning tasks and take responsibility for students in order to improve learning achievement (Supardi, 2014), reflecting how

effectively teachers perform their professional duties in the educational process. Based on Law No. 14 of 2005, teacher performance standards include the ability to plan, implement, and evaluate learning as part of continuous improvement. The achievement of these standards is influenced not only by individual ability but also by external factors, such as principals' managerial competence, and internal factors, particularly teachers' work motivation, both of which play a significant role in supporting optimal teacher performance.

Regulation of the Minister of National Education No. 13 of 2007 stipulates that principal must possess managerial competence encompassing 16 aspects: planning, organizing, leadership, change management, school culture, human resources, infrastructure, community relations, student affairs, curriculum, finance, administration, special service units, information systems, information technology, as well as monitoring and evaluation. Principals with high competence can create a conducive environment and optimally empower teachers (Agustina et al., 2025).

On the other hand, work motivation is an internal and external drive that influences individuals to achieve their work goals (Robbins & Judge, 2023), reflecting the energy and direction behind teachers' performance in carrying out their duties. It plays a crucial role in determining how committed and enthusiastic teachers are in the learning process. Uno (2024) explains that teachers' work motivation is formed through both intrinsic and extrinsic dimensions. Intrinsic dimensions include responsibility, the presence of clear targets, and a sense of job satisfaction. These elements arise from within the individual and encourage self-driven performance improvement. Meanwhile, extrinsic dimensions consist of recognition, rewards, and attention from superiors. These external factors help reinforce motivation through appreciation and support. Together, these dimensions shape the overall level of teachers' work motivation. Ultimately, strong work motivation contributes significantly to achieving optimal teacher performance.

A preliminary study conducted in senior and vocational high schools in Pemulutan District identified several important issues related to teacher performance. First, teacher performance was found to be suboptimal, particularly reflected in the low level of creativity in conducting learning activities. Second, the average teacher attendance rate was below 80%, indicating concerns regarding discipline and commitment. Third, some teachers were assigned to teach subjects outside their field of competence, which may affect the quality of instruction. Fourth, there was a high variation in teachers' work motivation, showing inconsistency in enthusiasm and engagement. These problems highlight challenges in achieving expected educational outcomes. The findings suggest that both internal and external factors influence teacher performance. This condition reflects a discrepancy between expected standards (*das sollen*) and actual conditions in practice (*das sein*). Therefore, addressing this gap becomes essential for improving overall educational quality.

Several previous studies have examined the relationships among these variables. Cempaka et al. (2023) found that principals' managerial competence significantly influences teacher performance in junior high schools in Kayuagung. Musrinih

(2023) confirmed the influence of managerial competence and work motivation on vocational high school teacher performance in Indramayu, even during the pandemic. Agustina et al. (2025) found that managerial ability and empowerment leadership positively influence elementary school teacher performance in Ilir Timur. Sari et al. (2025) identified the influence of competence and motivation of driving teachers on performance with a 27.3% contribution in elementary schools in Gandus Palembang. Arbiyanti et al. (2025) confirmed that work motivation and work discipline significantly influence teacher performance in junior high schools in Pekalongan. Anggraini et al. (2026) further found that supervision and work discipline affect motivation and teacher performance in public elementary schools in Pulau Rimau District.

Different from previous studies, this research has novelty: (1) specific location with limited access to secondary education; (2) based on identification of real problems; (3) multi-level design involving senior and vocational high schools with total sampling of 81 teachers; (4) relative contribution analysis of dominant variables. This study aims to: (1) analyze the influence of principals' managerial competence on teacher performance; (2) analyze the influence of work motivation on teacher performance; (3) analyze the simultaneous influence of managerial competence and work motivation on teacher performance in senior and vocational high schools in Pemulutan District.

2. Methodology

This study adopts a quantitative paradigm with an ex post facto design because variables have manifested naturally without manipulation (Arikunto, 2013). The population consists of all teachers in senior and vocational high schools in Pemulutan District: 33 teachers from State Senior High School 1 and 48 teachers from State Vocational High School 1, totaling 81 teachers. Using census technique, the entire population was used as research sample.

Research instruments consisted of closed questionnaires with Likert scale (1-5) developed based on relevant theories to measure three variables: (1) Principals' Managerial Competence (30 items based on Regulation of the Minister of National Education No. 13/2007); (2) Work Motivation (30 items based on Uno, 2024); (3) Teacher Performance (30 items based on Widoyoko, 2022 and Law No. 14/2005). Instruments were validated through expert judgment (3 validators) and trial testing on 28 teachers at State Senior High School 1 Kelekar. Validity test results showed 90 valid items ($r_{\text{calculated}} > r_{\text{table}} = 0.374$). Reliability test using Cronbach's Alpha produced: managerial competence ($\alpha = 0.973$), work motivation ($\alpha = 0.941$), teacher performance ($\alpha = 0.979$), indicating perfect reliability.

Data collection was conducted in August-September 2025. Data analysis included: (1) descriptive statistics; (2) prerequisite tests (Kolmogorov-Smirnov normality, multicollinearity); (3) Spearman correlation because data were not normally distributed; (4) multiple linear regression considering adequate sample size ($n=81$)

according to Central Limit Theorem; (5) coefficient of determination (R^2). Analysis used SPSS 25 with significance level $\alpha=0.05$.

3. Results and Discussion

Research Results

Research Data Description

The descriptive statistical analysis was conducted to provide an overview of the distribution and central tendency of each research variable. This analysis includes measures such as mean, median, standard deviation, as well as minimum and maximum values for each variable. The results of the descriptive statistical analysis of the three research variables are presented in Table 1.

Table 1. Descriptive Statistics of Research Variables

| Variable | N | Min | Max | Mean | Median | SD | Category |
|---------------------------------|----|-----|-----|--------|--------|-------|-----------|
| Managerial Competence (X_1) | 81 | 109 | 150 | 134.04 | 134 | 11.27 | Very Good |
| Work Motivation (X_2) | 81 | 104 | 150 | 128.77 | 128 | 11.39 | Very Good |
| Teacher Performance (Y) | 81 | 106 | 150 | 131.17 | 128 | 11.77 | Very Good |

Measurement results show that the average values of principals' managerial competence (89.18%), work motivation (85.80%), and teacher performance (87.50%) are in the very good category. The highest managerial competence indicator: school planning (92.35) and lowest: HR management (86.91). The highest work motivation indicator: student feedback (89.70) and lowest: hope for rewards (77.17). The highest teacher performance indicator: communication with students (89.50) and lowest: understanding students (84.20).

Prerequisite Test Analysis

The Kolmogorov-Smirnov normality test showed that data were not normally distributed ($\text{sig.} < 0.05$). Log and square root transformations still resulted in non-normal data, so analysis used a combination of Spearman correlation (non-parametric) and multiple linear regression (parametric) considering $n=81$ adequate according to Central Limit Theorem. The multicollinearity test showed Tolerance=0.680 (>0.10) and VIF=1.470 (<10), indicating no multicollinearity between independent variables.

Based on the Kolmogorov-Smirnov test results indicating that the data were not normally distributed ($\text{sig.} < 0.05$), data transformation using logarithmic and square root methods was conducted but did not achieve normal distribution. Therefore, Spearman's rank correlation was employed to examine bivariate relationships due to its non-parametric nature and suitability for non-normally distributed data. However, multiple linear regression analysis was still applied to assess the simultaneous and partial effects of independent variables on the dependent variable. The use of regression was justified by the adequate sample size ($n = 81$), which meets the assumptions of the Central Limit Theorem, particularly considering that

the variables were derived from aggregated Likert-scale scores that approximate interval data. To strengthen the parametric approach, additional assumption tests such as linearity, homoscedasticity, independence of errors, and normality of residuals were examined to ensure that regression requirements were sufficiently met at the model level, even if raw data were not normally distributed. Furthermore, the coefficient of determination (R^2) was interpreted strictly as the proportion of variance explained by the regression model rather than inferred from Spearman correlation coefficients. This distinction ensures methodological consistency between the selected analytical techniques and the interpretation of statistical contributions. The multicollinearity test results (Tolerance = 0.680 > 0.10; VIF = 1.470 < 10) confirmed that no multicollinearity existed among the independent variables, supporting the robustness of the regression model.

Hypothesis Testing

Hypothesis 1: The Influence of Managerial Competence on Teacher Performance.

To examine the relationship and influence between principals' managerial competence (X_1) and teacher performance (Y), Spearman's rank correlation and simple linear regression analyses were performed. The statistical results of hypothesis testing for the first hypothesis are presented in Table 2.

Table 2. Correlation and Regression $X_1 \rightarrow Y$

| Analysis | Value | Remarks |
|---------------------------|-------------------------|----------------------------|
| Spearman Correlation (rs) | 0.607** | Strong |
| Significance | 0.000 | $p < 0.05$ |
| R^2 | 0.368 | 36.8% contribution |
| Regression Equation | $Y = 45.571 + 0.639X_1$ | |
| t-calculated | 6.869 | $> t\text{-table (1.664)}$ |

Results show that principals' managerial competence has a positive and significant influence on teacher performance with strong correlation ($rs = 0.607$; $p < 0.05$). A contribution of 36.8% indicates that every one-unit increase in managerial competence increases teacher performance by 0.639 units. Hypothesis H_1 is accepted. These findings align with Cempaka et al. (2023), Agustina et al. (2025), and Kamalia et al. (2022) who found significant influence of principal leadership and managerial competence on teacher performance.

Theoretically, results support Mulyasa (2013) that principals with high managerial competence can create conducive environments, provide clear direction, and optimally empower teachers through effective implementation of planning, organizing, actuating, and controlling functions. Robbins & Judge (2023) explain that effective managerial leadership includes establishing clear vision, effective communication, efficient resource allocation, and constructive feedback that directly impacts subordinate performance improvement.

Hypothesis 2: The Influence of Work Motivation on Teacher Performance.

The second hypothesis examines the extent to which teachers' work motivation (X_2) contributes to and influences teacher performance (Y). Spearman's rank correlation was employed to measure the strength of the relationship, while simple linear regression was used to estimate the magnitude of the effect. The complete statistical output for this hypothesis is presented in Table 3.

Table 3. Correlation and Regression $X_2 \rightarrow Y$

| Analysis | Value | Remarks |
|---------------------------|-------------------------|----------------------------|
| Spearman Correlation (rs) | 0.808** | Very Strong |
| Significance | 0.000 | $p < 0.05$ |
| R^2 | 0.653 | 65.3% contribution |
| Regression Equation | $Y = 23.180 + 0.839X_2$ | |
| t-calculated | 12.343 | $> t\text{-table} (1.665)$ |

Work motivation has a positive and significant influence on teacher performance with very strong correlation ($r_s = 0.808$; $p < 0.05$). A contribution of 65.3% indicates that every one-unit increase in work motivation increases teacher performance by 0.839 units. Work motivation has a more dominant influence than managerial competence. Hypothesis H_2 is accepted. Findings are consistent with Musrinih (2023), Wiranti & Noor (2024), and Arbiyanti et al. (2025) who found significant influence of work motivation on teacher performance. Theoretically, results support Herzberg's theory (in Hasibuan, 2013) that motivator factors (achievement, recognition, responsibility) directly contribute to satisfaction and performance, as well as Uno (2024) about intrinsic-extrinsic motivation duality.

The dominance of intrinsic motivation (student feedback 89.70; job satisfaction 89.01) over extrinsic (rewards 77.17) indicates that the teaching profession is more driven by calling rather than material incentives, consistent with Maslow's theory that self-actualization needs become the highest motivator. The larger contribution (65.3% vs 36.8%) confirms Keith Davis's proposition that motivation factor more dominantly determines performance than external ability factor.

Hypothesis 3: Simultaneous Influence of Managerial Competence and Work Motivation.

The third hypothesis investigates the simultaneous influence of both principals' managerial competence (X_1) and teachers' work motivation (X_2) on teacher performance (Y) using multiple linear regression analysis. This analysis also examines the combined coefficient of determination (R^2) to assess the proportion of variance in teacher performance explained jointly by both predictor variables. The results of the multiple regression analysis are presented in Table 4.

Table 4. Multiple Regression $X_1, X_2 \rightarrow Y$

| Analysis | Value | Remarks |
|--------------------------|-----------------------------------|----------------------------|
| Multiple Correlation (R) | 0.832 | Very Strong |
| R^2 | 0.693 | 69.3% contribution |
| Adjusted R^2 | 0.685 | |
| F-calculated | 87.959 | $> F\text{-table} (3.115)$ |
| Significance | 0.000 | $p < 0.05$ |
| Regression Equation | $Y = 8.642 + 0.234X_1 + 0.708X_2$ | |

Simultaneously, managerial competence and work motivation significantly influence teacher performance ($R=0.832$; $F=87.959$; $p<0.05$) with 69.3% contribution. The regression equation shows work motivation ($\beta=0.708$) has a more dominant influence than managerial competence ($\beta=0.234$). Hypothesis H_3 is accepted. The findings are consistent with Musrinih (2023) and Sari et al. (2025), who reported a simultaneous influence of managerial competence and work motivation on performance. However, the relatively high coefficient of determination ($R^2 = 69.3\%$) in the simultaneous model requires more critical interpretation.

Since all variables were measured using self-reported perception questionnaires from the same respondents, there is potential for common method bias, which may inflate correlations and the explanatory power of the regression model. In addition, the absence of control variables such as tenure, educational background, or organizational context may limit the precision of the estimated effects and contribute to an overestimation of the combined influence. Therefore, the magnitude of R^2 should be interpreted cautiously as reflecting statistical association rather than definitive causal strength.

Furthermore, the interpretation of a “3.5% synergistic effect” derived from comparing the simultaneous R^2 (69.3%) with the sum of partial contributions (36.8% + 65.3%) needs reconsideration. Partial coefficients of determination obtained from separate regressions cannot be directly summed and contrasted with the simultaneous R^2 because shared variance between predictors is statistically partitioned within the multiple regression model. Thus, the higher R^2 in the combined model more accurately indicates overlapping and jointly explained variance rather than an additive or multiplicative surplus effect.

Nonetheless, the results still substantively support Schuler and Jackson’s dual strategy framework (in Sinambela, 2012) and Keith Davis’ formulation (in Mangkunegara, 2009) that performance is a function of ability and motivation. Future research incorporating longitudinal designs, multi-source performance data, and relevant control variables would strengthen causal inference and provide more proportionate empirical and practical implications regarding productivity improvement strategies.

Integrated Discussion

Research findings confirm a comprehensive teacher performance model that considers external factors (managerial leadership) and internal factors (work motivation) with greater emphasis on internal factors. The synergistic effect shows that principals with high managerial competence can create conducive conditions for the growth of teachers’ work motivation through effective implementation of POAC (Planning, Organizing, Actuating, Controlling) functions, while highly motivated teachers are more responsive to principals’ coaching, creating a positive cycle of performance improvement.

The remaining 30.7% performance variation may be influenced by compensation and welfare (Hasibuan, 2013), physical and psychological work environment (Supardi, 2014), school organizational culture (Robbins & Judge, 2023), workload and additional tasks (Yamin & Maisah, 2010), work involvement and social competence (Suzilawati AN et al., 2022), teacher working group activities (Arifin et al., 2025), as well as individual factors such as age, teaching experience, education level, and teacher personality characteristics (Mangkunegara, 2009).

4. Conclusion

Based on the analysis, it can be concluded that the principal's managerial competence has a positive and significant influence on teacher performance, with a fairly strong relationship and a contribution of approximately 36.8%. Furthermore, work motivation also proved to have a positive and significant influence on teacher performance, with an even stronger relationship and a greater contribution of approximately 65.3%. This makes it the most dominant factor in improving teacher performance. Simultaneously, the principal's managerial competence and work motivation both significantly influenced teacher performance, with a very strong relationship and a contribution of 69.3%.

This indicates a synergistic effect between the two variables in improving teacher performance, although the synergistic contribution is relatively small, approximately 3.5%. Furthermore, based on the regression equation obtained, it appears that work motivation has a greater influence than the principal's managerial competence on teacher performance. This indicates that improving teacher work motivation is a more decisive factor in efforts to improve overall teacher performance. The study confirms the importance of optimizing external factors (principals' managerial competence) and internal factors (teachers' work motivation) with priority on increasing work motivation as the dominant factor in improving teacher performance and sustainable education quality.

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