# The Effect of Principal's Academic Supervision, Teacher Professional Learning Community Activities, and Teacher Professional Competence on State Vocational High School Teachers' Performance in Indragiri Hilir Regency

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A B S T R A C T
This study examines the effect of principals' academic supervision, teachers' professional learning community activities, and teachers' professional competence on the performance of vocational high school (SMKN) teachers in Indragiri Hilir Regency. Using a quantitative ex-post facto approach, data were collected from 156 teachers through questionnaires and analyzed using regression tests. The findings reveal that academic supervision, professional learning community activities, and professional competence each have a significant positive impact on teacher performance. Additionally, these factors collectively effect teacher performance, with a determination coefficient of 31.2%. The results highlight the importance of effective supervision, collaborative learning, and professional competence in enhancing teacher performance, offering insights for improving educational quality in vocational high schools.

## INTRODUCTION

Education is a fundamental pillar of national development, as it fosters individuals who are competent and competitive. Educational institutions provide a platform for learning and growth, enabling individuals to develop their potential and contribute effectively to society. One crucial factor in achieving this goal is improving teacher performance. Teachers play a vital role in shaping students' academic and personal development, requiring them to possess specialized expertise in the learning process. Professional educators must not only impart knowledge and skills but also engage in continuous professional development while adhering to ethical standards in their teaching practices.

Academic supervision by principals is one of the key factors influencing teacher performance. It is a structured process of monitoring and guidance aimed at improving instructional quality. Effective supervision helps teachers address challenges in lesson planning, implementation, and evaluation. Beyond assessment, it serves as a tool for professional development. However, in Kempas 1 vocational high school, academic supervision has not been fully optimized. In 2023, it was conducted only twice a year, covering planning, implementation, and assessment, but lacked follow-up actions. These follow-ups are crucial, as they provide direct feedback to help teachers refine their teaching methods and enhance their competencies.

Preliminary observations at Kempas 1 vocational high school highlight issues in teachers' professional competence during the learning process. Supervision results from March 2024 indicate that most teachers fall within the "adequate" and "low" performance categories. The principal attributes this to a lack of attention to essential competency elements, repetitive teaching methods, minimal integration of technology, and lateness among some teachers, which affects classroom effectiveness. Teachers who build positive relationships with students, create conducive learning environments, and act as role models can significantly enhance students' motivation and confidence. However, challenges remain in implementing and maintaining professional teaching standards.

Achieving high-quality teacher performance and educational outcomes depends on the collaboration of various stakeholders. Quality education produces skilled and competitive human resources, and its success is influenced by school leadership, teacher competence, and professional learning communities. Effective academic supervision provides constructive feedback, helping teachers improve their instructional practices. Research indicates that structured and regular supervision positively impacts teacher performance. Despite efforts to enhance vocational education, challenges such as inadequate supervision, limited professional learning engagement, and varying teacher competence levels persist. Therefore, this study aims to examine the effect of principals' academic supervision, teachers' professional learning communities, and teachers' professional competence on vocational high school teacher performance in Indragiri Hilir Regency.

## METHODS

This study employs a quantitative research method based on the philosophy of positivism, as described by Sugiyono (2019). The research methodology used is ex post facto, which investigates past events. The independent variables in this study include principals' academic supervision (X1), teachers' professional learning community activities (X2), and teachers' professional competence (X3), while the dependent variable is teacher performance (Y). The study was conducted at vocational high schools in Indragiri Hilir Regency between May 2024 and December 2024. The research population consists of all 257 vocational high school teachers in the regency. The sample size was determined using Slovin's formula, resulting in a sample of 156 teachers, selected with a 5% margin of error and a 95% confidence level to ensure representation.

The data collection methods include questionnaires and documentation. The questionnaire assesses the effect of academic supervision, professional competence, and learning community culture on teacher performance, while documentation provides additional insights into school conditions and relevant information. The research instrument is a structured questionnaire with indicators measuring teacher performance, principals' academic supervision, teachers' learning community engagement, and professional competence. A Likert scale with five response categories is used to score responses. Data analysis follows a quantitative descriptive approach using SPSS Version 24.0, involving classical assumption tests (normality, linearity, multicollinearity, and heteroscedasticity) before hypothesis testing. The hypotheses are tested using the "Product Moment" correlation and direct correlation tests to determine relationships between independent and dependent variables. Linear regression analysis measures the effect of each independent variable, while t-tests assess partial effects on teacher performance.

## RESULTS AND DISCUSSION
### Principal's Academic Supervision (X1)

The questionnaire for the teachers' performance variable (Y) consists of 23 statements with five response options. The descriptive data results for the teachers' performance variable (Y) are presented accordingly. The descriptive analysis in this study was conducted using IBM SPSS 27.

Table 1. Descriptive Statistics of Principal's Academic Supervision

| Descriptive Statistics | |
|---|---|
| N | 156 |
| Mean | 119,67 |
| Median | 120,00 |
| Modus | 125 |
| Standard Deviation | 8,825 |
| Variance | 77,888 |
| Range | 46 |
| Lowest Score | 95 |
| Highest Score | 141 |

The analyzed variable has a mean value of 119.67 with a standard deviation of 8.825. The data variance is recorded at 77.888. The range of this variable is 46, with the lowest score at 95 and the highest score at 141. The relatively low standard deviation compared to the mean indicates that the data does not exhibit significant dispersion, suggesting that the distribution of respondents' answers is fairly uniform.

Table 2. Categories of Principal's Academic Supervision

| No | Category | Interval | Percentage | Frequency |
|---|---|---|---|---|
| 1. | Low | X<110 | 13.46% | 21 |
| 2. | Moderate | 110 ≤ X < 126 | 61.54% | 96 |
| 3. | High | X≥126 | 25% | 36 |
| Total | | | 100% | 156 |

Based on the data analysis results, the Principal's Academic Supervision is categorized into three levels: low, moderate, and high. In the low category (X < 110), there are 21 respondents, accounting for 13.46% of the total. In the moderate category (110 ≤ X < 126), teacher performance is at a dominant level, with 96 respondents, representing 61.54% of the total. Meanwhile, in the high category (X ≥ 126), there are 36 respondents, making up 25.00% of the total. These findings indicate that the Principal's Academic Supervision is predominantly in the moderate category, followed by the high category, with only a small percentage falling into the low category.

**Teachers' Professional Learning Community Activities (X2)**

Table 3. Descriptive Statistics of Teachers' Professional Learning Community Activities (X2)

| Deskripsi Statistik |
|---|

| N | 156 |
|---|---|
| Mean | 100,81 |
| Median | 103,00 |
| Modus | 103 |
| Standard Deviation | 7,739 |
| Variance | 59,898 |
| Range | 44 |
| Lowest Score | 72 |
| Highest Score | 116 |

Based on the statistical description table above, the total number of respondents (N) is 156. The analyzed variable has a mean value of 100.81 with a standard deviation of 7.739. The data variance is recorded at 59.898. The range of this variable is 44, with the lowest score at 72 and the highest score at 116. Given that the standard deviation is relatively small compared to the mean, it can be concluded that the distribution of respondents' answers is fairly uniform, indicating relatively homogeneous data dispersion among respondents.

Table 4. Categories of Teachers' Professional Learning Community Activities

| No | Category | Interval | Percentage | Frequency |
|---|---|---|---|---|
| 1. | Low | X<89 | 7,05% | 11 |
| 2. | Moderate | 89 ≤ X < 103 | 37,82% | 59 |
| 3. | High | X≥103 | 55,13% | 86 |
| Total | | | 100% | 156 |

Based on the data analysis results, teachers' performance is classified into three categories: low, moderate, and high. In the low category (X < 89), there are 11 respondents, accounting for 7.05% of the total. In the moderate category (89 ≤ X < 103), teacher performance is the most dominant, with 59 respondents, representing 37.82% of the total. Meanwhile, in the high category (X ≥ 103), there are 86 respondents, making up 55.13% of the total. These findings indicate that the majority of teachers' performance falls into the high category, followed by the moderate category, with only a small percentage in the low category.

**Teachers' Professional Competence (X3)**

Tabel 5. Descriptive Statistics of Teachers' Professional Competence

| Descriptive Statistics | |
|---|---|
| N | 156 |
| Mean | 120,24 |
| Median | 121,00 |
| Modus | 125 |
| Standard Deviation | 8,333 |
| Variance | 69,437 |
| Range | 48 |
| Lowest Score | 93 |
| Highest Score | 141 |

Based on the statistical description table above, the total number of respondents (N) is 156. The analyzed variable has a mean value of 120.24 with a standard deviation of 8.333. The data variance is recorded at 69.437, with a range of 48, a minimum score of 93, and a maximum score of 141. Given that the standard deviation is relatively small compared to the mean, it can be concluded that the distribution of respondents' responses is fairly uniform, indicating a consistent data spread among respondents.

Table 6. Categories of Teachers' Professional Competence

| No | Category | Interval | Percentage | Frequency |
|---|---|---|---|---|
| 1. | Low | X<117 | 21,29% | 33 |
| 2. | Moderate | 117≤ X < 125 | 45,81% | 71 |
| 3. | High | X≥125 | 32,90% | 51 |
| Total | | | 100% | 156 |

Based on the data analysis results, teachers' professional competence is classified into three categories: low, moderate, and high. In the low category (X < 117), there are 33 respondents, accounting for 21.29% of the total respondents. In the moderate category (117 ≤ X < 125), 71 respondents fall within this range, representing 45.81% of the total. Meanwhile, in the high category (X ≥ 125), there are 51 respondents, or 32.90% of the total. These results indicate that the majority of teachers' professional competence falls within the moderate category, followed by the high category, with only a small proportion in the low category.

**Teacher Performance (Y)**

Table 7.  Descriptive Statistics of Teacher Performance

| Descriptive Statistics | |
|---|---|
| N | 156 |
| Mean | 121,47 |
| Median | 125,00 |
| Modus | 125 |
| Standard Deviation | 10,459 |
| Variance | 109,399 |
| Range | 57 |
| Lowest Score | 82 |
| Highest Score | 139 |

Based on the statistical description table above, the total number of respondents (N) is 156. The analyzed variable has a mean value of 121.47 with a standard deviation of 10.459. The data variance is recorded at 109.399. The range of values is 57, with the lowest score being 82 and the highest score being 139. Given that the standard deviation is relatively small compared to the mean, it can be concluded that the distribution of respondents' answers is fairly even, indicating a relatively consistent data spread among respondents.

Table 8. Categories of Teacher Performance

| No | Category | Interval | Percentage | Frequency |
|---|---|---|---|---|
| 1. | Low | X<106 | 13,41% | 11 |
| 2. | Moderate | 106≤ X < 126 | 86,59% | 96 |
| 3. | High | X≥126 | 59,76% | 49 |
| Total | | | 100% | 156 |

Based on the data analysis results, teacher performance is categorized into three levels: low, moderate, and high. In the low category (X < 106), there are 11 respondents, accounting for 13.41% of the total respondents. In the moderate category (106 ≤ X < 126), teacher performance is the dominant level, with 71 respondents, representing 86.59% of the total. Meanwhile, in the high category (X ≥ 126), there are 49 respondents, or 59.76% of the total. These results indicate that the majority of teacher performance falls into the moderate category, followed by the high category, with only a small number in the low category.

**Assumption Test Results**

The assumption tests confirmed that all variables meet the required statistical criteria. The **normality test** results indicate that each variable has a significance value (Sig) above 0.05, confirming a normal distribution. The **linearity test** shows that all functional relationships between independent and dependent variables have Sig values exceeding 0.05, indicating linear relationships.

The **multicollinearity test** results demonstrate that none of the variables exhibit multicollinearity symptoms, as evidenced by Variance Inflation Factor (VIF) values below 10 and Tolerance values above 0.1. Lastly, the **heteroskedasticity test** confirms that all variables have Sig values greater than 0.05, indicating no heteroskedasticity in the regression model.

Overall, the study's data satisfies the assumptions of normality, linearity, multicollinearity, and heteroskedasticity, making it suitable for further analysis.

## Simple Linear Regression Analysis
## Principal's Leadership ($X_1$)

Table 9. Principal's Academic Supervision

| Variable | Unstandardized Coefficient Beta | Standardized Coefficient | t | Sig |
|---|---|---|---|---|
| Constant | 95,376 | | 8,468 | ,000 |
| Principal's Academic Supervision | 0,218 | 184 | 2,323 | ,022 |

This means that the regression coefficient value of 0.218 indicates that each one-unit increase in the principal's academic supervision will increase teacher performance (Y) by 0.218. Additionally, the constant value of 95.376 signifies a significant positive effect on teacher performance as the dependent variable. The analysis results show a significance (Sig) value of 0.022, which is lower than 0.05, indicating a significant effect of the principal's academic supervision on teacher performance.

## Professional Learning community Activities of Teachers

Table 10. Professional Learning community Activities of Teachers

| Variable | Unstandardized Coefficient Beta | Standardized Coefficient | t | Sig |
|---|---|---|---|---|
| Constant | 50,543 | | 5,377 | ,000 |
| Professional Learning community Activities of Teachers | 0,704 | ,521 | 7,567 | ,000 |

This means that the regression coefficient value of 0.704 indicates that each one-unit increase in professional learning community activities of teachers will improve teacher performance (Y) by 0.704. Additionally, the constant value of 50.543 demonstrates a significant positive effect on teacher performance as the dependent variable. The analysis results show a significance (Sig) value of 0.000, which is smaller than 0.05, indicating a significant effect of professional learning community activities of teachers on teacher performance.

**Teacher Professional Competence**

Table 11. Results of Simple Linear Regression analysis for Variable $X_3$ on Y

| Variable | Unstandardized Coefficient Beta | Standardized Coefficient | t | Sig |
|---|---|---|---|---|
| Constant | 88,228 | | 7,419 | ,000 |
| Teacher Professional Competence | 0,276 | ,220 | 2,802 | ,006 |

This means that the regression coefficient of 0.276 indicates that each one-unit increase in teacher professional competence will improve teacher performance (Y) by 0.276. The constant value of 88.228 signifies a positive effect on teacher performance as the dependent variable. The analysis results show a significance (Sig) value of 0.006, which is less than 0.05, indicating a significant effect of teacher professional competence on teacher performance.

**Multiple Linear Regression Analysis**

Table 12. Multiple Linear Regression Analysis

| MODEL | | Unstandardized Coefficients | | Standardized Coefficient |
|---|---|---|---|---|
| | | *B* | Std. Error | Beta |
| **1** | (Constant) | 58,650 | 11,261 | |
| | Principal's academic Supervision | 0,187 | 0,118 | 0,158 |
| | Professional Learning Community Activities of Teachers | 0,940 | 0,124 | 0,695 |
| | Teacher Professional Competence | 0,452 | 0,153 | 0,360 |

The regression analysis shows that all three independent variables—principal's academic supervision (0.187), professional learning community activities of teachers (0.940), and teacher professional competence (0.452)—positively impact teacher performance. The constant value of 58.650 represents teacher performance in the absence of these factors. Among the variables, professional learning community activities have the strongest effect, followed by teacher professional competence and principal's academic supervision.

**Partial Test (T-Test)**

Table 13. Partial Test Analysis Results (T-Test)

| Variable | Unstandardized Coefficients | t | Sig |
|---|---|---|---|
| Principal's academic Supervision | 0,218 | 2,323 | 0,022 |
| Professional Learning Community Activities of Teachers | 0,704 | 7,567 | 0,000 |
| Teacher Professional Competence | 0,276 | 2,802 | 0,006 |

The hypothesis testing results indicate that all three independent variables—Principal's Academic Supervision, Professional Learning Community Activities, and Teacher Professional Competence—have a positive and significant effect on teacher performance at vocational high schools in Indragiri Hilir Regency. This is supported by significance values of 0.022, 0.000, and 0.006, all of which are below 0.05, leading to the rejection of $H_0$ and acceptance of $H_a$ for each variable.

**Simultaneous Test (F-Test)**

This hypothesis testing aims to determine whether the independent variables simultaneously influence the dependent variable.

Table 14. Regression Test Results Using the F-Test

| ANOVA[a] | | | | | |
|---|---|---|---|---|---|
| MODEL | Sum of aquares | Df | Mean Square | F | Sig |
| 1  Regression | 5287,716 | 3 | 1762,572 | 22,959 | ,000[b] |
| Residual | 11669,124 | 152 | 76,771 | | |
| Total | 16956,840 | 155 | | | |
| a. Dependent Variable: Teacher Performance<br>b. Predictors: (Constant), Professional Competence of Teachers, Professional Learning Community activities of Teachers, and Principal's Supervision | | | | | |

The ANOVA test results indicate a significance value of 0.000, which is less than 0.05. According to the decision criteria, this means $H_a$ is accepted, and $H_0$ is rejected. Thus, it can be concluded that there is a significant simultaneous effect of the principal's academic supervision, professional learning community activities of teachers, and teachers' professional competence on teacher performance at vocational high schools in Indragiri Hilir Regency.

**Coefficient of Determination (R²)**

The coefficient of determination (R²) in this study is used to measure the extent to which the independent variables (X) collectively influence the dependent variable (Y) in percentage form (%).

Table 15. Coefficient of Determination (R2)

| Model Summary | | | | |
|---|---|---|---|---|
| | **R** | **Rsquare** | **Adjusted R Square** | **Std. Error of the Estimate** |
| 1 | ,558a | ,312 | ,298 | 8,762 |
| | a. Predictors: (Constant), Professional Competence of Teachers, Professional Learning Community activities of Teachers, and Principal's Supervision<br>b. Dependent Variable: Teacher Performance | | | |

Based on the Model Summary table, the R Square value is 0.312, which, when converted into a percentage, equals 31.2%. This indicates that the variables of Principal Supervision, Teacher Professional Learning Community Activities, and Teacher Professional Competence collectively influence Teacher Performance by 31.2%. The remaining 68.8% (100% - 31.2%) represents the contribution of other variables or factors outside the regression model used in this study.

**DISCUSSION**

The first hypothesis test (H1) examined the effect of principal academic supervision on teacher performance, yielding a significance value of 0.022, which is less than 0.05. This result indicates that the null hypothesis ($H_0$) is rejected, and the alternative hypothesis ($H_a$) is accepted. Consequently, academic supervision by the principal has a significant positive impact on teacher performance at vocational high schools in Indragiri Hilir Regency. These findings align with research by Susilo & Sutoyo (2019), which demonstrated that principal supervision positively influences elementary school teacher performance. Similarly, research by Selamet (2017) supports this conclusion, showing that academic supervisory competence contributes significantly to teacher performance, underscoring its role in enhancing the educational process.

The second hypothesis test (H2) investigated the impact of professional learning community activities on teacher performance, resulting in a significance value of 0.000, which is also below 0.05. This confirms that professional learning community activities significantly and positively affect teacher performance at vocational high schools in Indragiri Hilir Regency. Supporting this, Yuliati, Soedjono, and Sudana (2025) found that teacher learning communities, along with instructional leadership and technology-based school facilities, contribute significantly to teacher performance improvement. Moreover, research by Affandi et al. (2022) highlights the effectiveness of Teacher Working Groups (KKG) in fostering problem-solving, collaborative dialogue, and adaptability in

teaching, further reinforcing the role of professional learning communities in sustaining quality education.

The third hypothesis test (H3) examined the effect of teacher professional competence on performance, yielding a significance value of 0.006, confirming a positive and significant effect. Research by Werdiningsih and Soedjono (2022) found that professional competence contributes 75.6% to teacher performance, with instructional leadership further enhancing its impact. Similarly, studies by Waluya, Arsyad, and Nawai (2021), as well as Rauh et al. (2013), demonstrated that professional competence directly affects teacher performance, with a substantial contribution in different educational contexts. These findings emphasize the need for continuous professional training, integration of technology in teaching, and the development of collaborative learning communities to enhance teacher effectiveness.

The combined effect of principal academic supervision, professional learning community activities, and teacher professional competence on teacher performance was confirmed through an ANOVA test, yielding a significance value of 0.000. This indicates that these factors collectively have a significant impact on teacher performance at vocational high schools in Indragiri Hilir Regency. Similar studies, such as those by Mardalena et al. (2020), confirm that academic supervision and professional competence significantly influence teacher performance. Given these findings, it is essential for schools to strengthen teacher development programs, promote active participation in professional learning communities, and ensure continuous academic supervision to enhance teacher performance and educational quality.

## CONCLUSIONS AND RECOMMENDATIONS

The research findings demonstrate that the principal's academic supervision, professional learning community activities, and teachers' professional competence significantly influence teacher performance in vocational high schools in Indragiri Hilir Regency. The significance values of 0.022, 0.000, and 0.006, respectively, confirm their positive impact. Furthermore, when combined, these three factors contribute substantially to improving teacher performance, as indicated by a significance value of 0.000. This highlights the need for an integrated approach that incorporates leadership, collaboration, and continuous professional development to enhance teaching effectiveness.

Based on these results, several recommendations are provided. School principals should strengthen academic supervision by providing constructive feedback and organizing relevant training programs while fostering a supportive work environment. Teachers, on the other hand, should actively develop their professional competence through workshops, collaboration, and innovative teaching methods. Future research should consider expanding the study's scope and exploring additional variables, such as organizational culture and school policies, to gain a more comprehensive understanding of the factors affecting teacher performance and overall education quality.

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