

# The Influence of Principal Leadership and Academic Supervision on Teachers' Teaching Performance at SMA Negeri 1 Bitung

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## Abstract.

*This study aims to analyze the influence of principal leadership and academic supervision on teachers' teaching performance at SMA Negeri 1 Bitung, both partially and simultaneously. This research employed a quantitative approach using an explanatory research method. The population consisted of all civil servant teachers at SMA Negeri 1 Bitung, totaling 31 individuals, with a saturated sampling technique (total sampling) applied. Data were collected through a closed-ended questionnaire using a Likert scale that had been tested for validity and reliability, and were analyzed using multiple linear regression with SPSS software. The results indicate that: (1) principal leadership has a positive and significant partial effect on teachers' teaching performance, with a value of 3.106 > 2.048; (2) academic supervision has a positive and significant partial effect on teachers' teaching performance, with a value of 4.002 > 2.048; and (3) simultaneously, principal leadership and academic supervision have a significant effect on teachers' teaching performance, with a value of 50.008 > 3.34. The coefficient of determination ( $R^2$ ) of 0.625 indicates that these two independent variables contribute 62.5% to the variation in teachers' teaching performance, while the remaining proportion is influenced by other factors outside the research model. These findings emphasize that the synergy between supportive leadership styles and well-planned academic supervision is a key factor in enhancing teacher professionalism and the quality of learning in schools.*

**Keywords:** *Principal Leadership; Academic Supervision and Teachers' Teaching Performance.*

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## I. INTRODUCTION

Education is a fundamental pillar in the development of high-quality human resources, where the success of its implementation in schools is largely determined by the quality of the learning process in the classroom. In this context, teachers play a strategic role as the primary implementers of instructional activities; therefore, their teaching performance becomes a key factor that directly influences the quality of student learning outcomes. Teachers' teaching performance reflects their ability to plan instruction, implement effective learning processes, manage classrooms, utilize media and technology, and conduct continuous assessment of learning outcomes. In line with the perspective of Darling-Hammond et al. (2022), effective teaching performance is characterized by the ability to create active, innovative, and student-centered learning environments that foster student engagement and optimal learning motivation. However, the reality observed at SMA Negeri 1 Bitung indicates that teachers' teaching performance has not yet reached an optimal level. Preliminary observations identified limited innovation in instructional practices, where most teachers still tend to rely on conventional methods such as lectures without variation in active learning models. Ineffective classroom management has also resulted in less conducive learning environments, thereby hindering students' active participation in achieving maximum competencies. Students are often passive and less engaged in activities that require critical thinking and collaboration.

In addition, the utilization of instructional media and technology by teachers remains minimal, despite the crucial role of appropriate technology use in creating interactive learning environments in the current digital era. The suboptimal performance is influenced by several factors, one of which is principal leadership. As educational leaders, principals are responsible for directing, influencing, and mobilizing all school resources to achieve a clear academic vision. From the perspective of instructional leadership, Hallinger (2021) emphasizes that effective leadership focuses on strengthening the teaching and learning process through teacher development and the creation of a conducive school climate. Furthermore, Leithwood and Sun (2022) argue that transformational leadership of principals significantly affects teachers'

work motivation and professional performance. This is supported by findings from Hsieh et al. (2025), which indicate that school leadership contributes to improving the quality of instructional practices through enhanced collaboration and teacher autonomy. In addition to leadership, academic supervision serves as an important instrument in fostering teacher professionalism.

Based on the Regulation of the Minister of National Education No. 13 of 2007, principals are required to possess supervisory competencies that include planning, implementation, and follow-up. Academic supervision is not merely an administrative evaluation, but rather a systematic process aimed at helping teachers improve their pedagogical competence through reflective dialogue and constructive feedback. Glickman, Gordon, and Ross-Gordon (2021) assert that effective supervision can significantly enhance teachers' instructional competence. Recent research by Anggriani et al. (2023) also found that academically oriented supervisory practices contribute to improving teachers' abilities in lesson planning and the use of active learning strategies. Although theoretically leadership and supervision are closely related to teacher performance, the effectiveness of these two variables at SMA Negeri 1 Bitung needs to be empirically verified. As stated by Aprida et al. (2021), instructional leadership and academic supervision simultaneously have a positive relationship with teaching effectiveness. Therefore, this study is crucial to provide a comprehensive overview and accurate data regarding the extent to which these managerial factors contribute to teacher professionalism at the senior high school level. Based on this background, this article aims to analyze the influence of principal leadership and academic supervision on teachers' teaching performance at SMA Negeri 1 Bitung, both partially and simultaneously.

## II. LITERATURE REVIEW

### 1. Teachers' Teaching Performance

Teachers' teaching performance refers to the level of effectiveness and success in carrying out their professional duties during the instructional process, which includes the ability to plan, implement, manage the classroom, and continuously evaluate learning outcomes. According to Darling-Hammond et al. (2022), high-quality teaching performance is characterized by the teacher's ability to create active, innovative, and student-centered learning environments that promote engagement and optimal learning motivation. Improving the quality of education through teaching performance does not solely depend on individual teacher competence but is also significantly influenced by external support. Firmansyah et al. (2025) state that supportive leadership and effective supervision contribute substantially to enhancing teachers' professional performance in schools. Therefore, teaching performance in this study is understood as the manifestation of a teacher's success in managing all instructional aspects to achieve learning objectives.

### 2. Principal Leadership

The principal is an educational leader responsible for directing and mobilizing all school resources to effectively achieve the vision and goals of learning. From the perspective of instructional leadership, principals must focus on strengthening the teaching and learning process through the establishment of a clear academic vision and the creation of a conducive school climate. Hallinger (2021) emphasizes that effective instructional leadership directly contributes to improving teachers' instructional practices, which ultimately impacts student learning outcomes. In addition, the transformational leadership approach plays a crucial role in motivating teachers. This type of leadership emphasizes inspiration and professional support, enabling teachers to continuously develop their full potential. Findings by Leithwood and Sun (2022) indicate that transformational leadership of principals has a significant influence on improving teachers' work motivation and professional performance within the school environment.

### 3. Academic Supervision

Academic supervision is defined as a series of professional development activities aimed at assisting teachers in improving the quality of the teaching and learning process and its outcomes. Based on the Regulation of the Minister of National Education No. 13 of 2007, the scope of academic supervision includes program planning, implementation using appropriate techniques, and follow-up actions. The primary focus of this activity is not merely administrative evaluation, but rather the development of teacher professionalism through reflective dialogue and constructive feedback (Glickman, Gordon, & Ross-Gordon, 2021).

Empirically, intensive academic supervision has a positive impact on teachers' pedagogical competence. A study by Anggriani et al. (2023) found that development-oriented supervision enhances teachers' capacity in designing better lesson plans and employing more varied active learning strategies in the classroom.

### III. METHODS

This study employed a quantitative method with an explanatory research approach, aiming to explain the causal relationships among variables through hypothesis testing. The research was conducted at SMA Negeri 1 Bitung and involved all 31 teachers as respondents. The sampling technique used was total sampling (saturated sampling), in which the entire population was included as the sample. According to Sugiyono (2022), a population refers to the entire set of objects or subjects with specific characteristics determined by the researcher for study and conclusion drawing. This is further supported by Arikunto, who states that when the number of research subjects is fewer than 100, it is preferable to include the entire population as the sample to minimize sampling bias and enhance the accuracy of the results. Data were collected using a closed-ended questionnaire constructed on a five-point

Likert scale to measure teachers' perceptions of principal leadership, academic supervision, and teachers' teaching performance. All research instruments underwent validity testing using the item-total correlation method (Pearson Product Moment) and reliability testing using Cronbach's Alpha coefficient to ensure that each item was consistent and capable of measuring the intended constructs. Data analysis was conducted systematically using SPSS version 31 through a series of classical assumption tests, including the normality test using the Kolmogorov-Smirnov test, multicollinearity test to examine relationships among independent variables, and heteroscedasticity test using the Glejser method. The final stage of analysis employed multiple linear regression to test the hypotheses, with t-tests used to assess partial effects, F-tests to evaluate simultaneous effects, and the coefficient of determination ( $R^2$ ) to measure the contribution of principal leadership and academic supervision in explaining the variation in teachers' teaching performance.

### IV. RESULT AND DISCUSSION

#### Result

#### 1. Data Analysis

#### a. Descriptive Statistics of Research Variables

**Table 1.** Descriptive Analysis

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
KEPEMIMPINAN KEPALA SEKOLAH	31	37	113	97.32	19.345
SUPERVISI AKADEMIK	31	36	112	96.74	19.044
KINERJA MENGAJAR GURU	31	86	113	104.81	11.522
Valid N (listwise)	31				

Based on Table 1 (Descriptive Analysis), it can be observed that all research variables have a total of 31 respondents ( $N = 31$ ). For the Principal Leadership variable, the minimum value is 37 and the maximum value is 113, with a mean of 97.32 and a standard deviation of 19.345. This indicates that, in general, the level of principal leadership falls into a relatively high category, with a fairly large variation in the data. Furthermore, the Academic Supervision variable has a minimum value of 36 and a maximum value of 112, with a mean of 96.74 and a standard deviation of 19.044. The mean value, which is close to that of the previous variable, suggests that academic supervision is also in a relatively good category, although the data distribution remains quite varied. Meanwhile, the Teachers' Teaching Performance variable has a minimum value of 86 and a maximum value of 113, with the highest mean of 104.81 and a standard deviation of 11.522. This indicates that teachers' teaching performance tends to be higher compared to the other variables and exhibits a lower level of data variation, making it relatively more homogeneous. Overall, all three variables demonstrate relatively high mean values, leading to the conclusion that the conditions of principal leadership, academic supervision, and teachers' teaching performance are in a good category.

## b. Validity and Reliability Testing

## 1) Validity Test

Table 2. Validity Test Results for  $X_1$ 

Variable	r-table	r-calculated	Description
Principal Leadership ( $X_1$ )	0,355	0,845	VALID
	0,355	0,949	VALID
	0,355	0,815	VALID
	0,355	0,963	VALID
	0,355	0,785	VALID
	0,355	0,942	VALID
	0,355	0,828	VALID
	0,355	0,909	VALID
	0,355	0,831	VALID
	0,355	0,954	VALID
	0,355	0,878	VALID
	0,355	0,919	VALID
	0,355	0,810	VALID
	0,355	0,945	VALID
	0,355	0,836	VALID
	0,355	0,943	VALID
	0,355	0,815	VALID
	0,355	0,910	VALID
	0,355	0,836	VALID
	0,355	0,937	VALID
0,355	0,949	VALID	
0,355	0,822	VALID	
0,355	0,944	VALID	
0,355	0,820	VALID	
0,355	0,925	VALID	

For the validity testing, the r-table value used was 0.355. This value was obtained from a sample size of 31 respondents ( $N = 31$ ) with a significance level of 5% ( $\alpha = 0.05$ ), where the degrees of freedom (df) were calculated using the formula  $df = N - 2$ , resulting in  $31 - 2 = 29$ . Based on this df value, the r-table value of 0.355 was determined as the minimum threshold for assessing the validity of each statement item. Based on Table 2 above, the analysis results indicate that all statement items in the Principal Leadership variable ( $X_1$ ) have r-calculated values greater than the r-table value (0.355). The r-calculated values range approximately from 0.785 to 0.963, meaning that all items meet the validity criterion ( $r\text{-calculated} > r\text{-table}$ ). Therefore, it can be concluded that all instruments for the Principal Leadership variable are valid and suitable for use in this study. This implies that each statement item is capable of accurately measuring the intended variable and can be used for further analysis.

Table 3. Validity Test Results for  $X_2$ 

Variable	r-table	r-calculated	Description
Academic Supervision ( $X_2$ )	0,355	0,839	VALID
	0,355	0,959	VALID
	0,355	0,918	VALID
	0,355	0,915	VALID
	0,355	0,847	VALID
	0,355	0,957	VALID
	0,355	0,821	VALID
	0,355	0,949	VALID
	0,355	0,893	VALID
	0,355	0,926	VALID
	0,355	0,841	VALID
	0,355	0,932	VALID
	0,355	0,784	VALID
	0,355	0,958	VALID
	0,355	0,889	VALID
	0,355	0,885	VALID

Variable	r-table	r-calculated	Description
	0,355	0,911	VALID
	0,355	0,833	VALID
	0,355	0,918	VALID
	0,355	0,841	VALID
	0,355	0,944	VALID
	0,355	0,828	VALID
	0,355	0,964	VALID
	0,355	0,778	VALID
	0,355	0,951	VALID

Based on Table 3 (Validity Test for the Academic Supervision variable,  $X_2$ ), the results show that all items in the Academic Supervision variable have r-calculated values ranging from 0.778 to 0.964. All of these values are higher than the r-table value (0.355), indicating that all statement items meet the validity criteria. In other words, no items were excluded in this testing process. This finding indicates that each statement in the Academic Supervision variable is able to accurately and consistently represent the concept being measured. Therefore, the instrument for variable  $X_2$  is valid and can be used for further analysis in this study.

**Table 4.** Validity Test Results for Y

Variable	r-table	r-calculated	Description
	0,355	0,658	VALID
	0,355	0,920	VALID
	0,355	0,799	VALID
	0,355	0,898	VALID
	0,355	0,658	VALID
	0,355	0,913	VALID
	0,355	0,587	VALID
	0,355	0,898	VALID
	0,355	0,720	VALID
	0,355	0,872	VALID
	0,355	0,665	VALID
Teachers'	0,355	0,923	VALID
Teaching	0,355	0,394	VALID
Performance (Y)	0,355	0,890	VALID
	0,355	0,811	VALID
	0,355	0,594	VALID
	0,355	0,930	VALID
	0,355	0,624	VALID
	0,355	0,898	VALID
	0,355	0,504	VALID
	0,355	0,928	VALID
	0,355	0,708	VALID
	0,355	0,843	VALID
	0,355	0,560	VALID
	0,355	0,932	VALID

Based on Table 4 (Validity Test for the Teachers' Teaching Performance variable, Y), the results indicate that the r-calculated values for each item range from approximately 0.394 to 0.930. All of these values are greater than the r-table value (0.355), meaning that all statement items meet the validity criteria. Although some items have relatively lower values compared to others, they still exceed the established minimum threshold. Thus, it can be concluded that the instrument for the Teachers' Teaching Performance variable is capable of accurately and reliably measuring the aspects under study. Therefore, all items in this variable are appropriate for use in further analysis. This finding indicates that each statement item is able to measure the intended constructs consistently and precisely. No items were excluded, and all statements are considered valid. Accordingly, the instrument used in this variable meets the feasibility criteria as a measurement tool, enabling the collection of accurate data to support the overall research findings.

## 2) Reliability Test

**Table 5.** Reliability Test Results for X<sub>1</sub>

Reliability Statistics	
Cronbach's Alpha	N of Items
.987	25

Based on Table 5 (Reliability Test Results for X<sub>1</sub> – Principal Leadership), the Cronbach's Alpha value obtained is 0.987 with a total of 25 items. This value significantly exceeds the minimum reliability threshold of 0.60, indicating that the instrument for the Principal Leadership variable has a very high level of reliability. This means that all statement items in this variable are consistent in measuring the same construct and can be considered reliable for use in this study.

**Table 6.** Reliability Test Results for X<sub>2</sub>

Reliability Statistics	
Cronbach's Alpha	N of Items
.988	25

Based on Table 6 (Reliability Test for X<sub>2</sub> – Academic Supervision), the Cronbach's Alpha value obtained is 0.988 with a total of 25 items. This value indicates a very high level of reliability, as it is well above the minimum standard threshold. This means that the instrument used has excellent internal consistency, and each item is able to provide stable and reliable results in measuring the Academic Supervision variable.

**Table 7.** Reliability Test Results for Y

Reliability Statistics	
Cronbach's Alpha	N of Items
.972	25

Furthermore, based on Table 7 (Reliability Test Results for Y – Teachers' Teaching Performance), the Cronbach's Alpha value obtained is 0.972 with a total of 25 items. This value is also above the minimum reliability threshold, indicating that the instrument is highly reliable. Thus, all items in the Teachers' Teaching Performance variable demonstrate a high level of consistency and are appropriate for use in further data analysis. Overall, all three research variables have Cronbach's Alpha values above 0.90, which fall into the "very reliable" category. Therefore, the research instruments are considered consistent and dependable as tools for data collection.

### c. Classical Assumption Tests

This study conducted three types of classical assumption tests, as follows:

#### 1) Normality Test

**Table 8.** Normality Test

One-Sample Kolmogorov-Smirnov Test		Unstandardized Residual
N		31
Normal Parameters <sup>a,b</sup>	Mean	.0000000
	Std. Deviation	10.77535099
Most Extreme Differences	Absolute	.357
	Positive	.119
	Negative	-.357
Test Statistic		.357
Asymp. Sig. (2-tailed)		.157 <sup>c</sup>

a. Test distribution is Normal.

b. Calculated from data.

c. Lilliefors Significance Correction.

Table 8 presents the results of the normality test using the One-Sample Kolmogorov–Smirnov method with a sample size of 30. This test was conducted to determine whether the research data are normally distributed. Based on the table, the Asymp. Sig. (2-tailed) value is 0.143, which is greater than the

significance level of 0.05. This indicates that the residual data do not significantly differ from a normal distribution. In other words, the data can be considered normally distributed. With the normality assumption fulfilled, the research data are appropriate for further analysis, such as regression testing or other statistical analyses that require a normal distribution

## 2) Multicollinearity Test

**Table 9.** Multicollinearity Test

Model		Collinearity Statistics	
		Tolerance	VIF
1	Kepemimpinan Kepala Sekolah	.369	3.907
	Supervisi Akademik	.539	2.951

a. Dependent Variable: Kinerja Mengajar Guru

Table 9 presents the results of the multicollinearity test, which aims to determine whether there is a high correlation among the independent variables in the research model, namely teachers' metacognitive skills and classroom management, toward the dependent variable of learning motivation. Based on the table, the teachers' metacognitive skills variable has a tolerance value of 0.614 and a VIF value of 2.629. Meanwhile, the classroom management variable has a tolerance value of 0.739 and a VIF value of 1.690. Both variables show tolerance values greater than 0.10 and VIF values less than 10. This indicates that there is no multicollinearity issue in the regression model used. Thus, the independent variables are not highly correlated with each other, and the regression model in this study can be considered appropriate and suitable for further analysis.

## 3) Heteroscedasticity Test

**Table 10.** Heteroscedasticity Test

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	13.839	5.632		2.457	.020
	Kepemimpinan Kepala Sekolah	-.163	.919	-.544	-.178	.860
	Supervisi Akademik	.113	.933	.372	.121	.904

a. Dependent Variable: ABRESID

Based on Table 10, which presents the results of the heteroscedasticity test using the Glejser method, this test aims to determine whether there are issues in the variance of the residuals within the regression model. In essence, it examines whether the error terms are distributed consistently. The results show that the significance value for the Principal Leadership variable is 0.860 and for Academic Supervision is 0.904. Since both values are greater than 0.05, it can be concluded that there is no heteroscedasticity problem in the model. This indicates that the data in this study have a stable variance, meaning the regression model satisfies one of the key assumptions in statistical analysis. Therefore, the results of this study can be considered reliable and appropriate for further analysis.

## d. Multiple Linear Regression Analysis

**Table 11.** Multiple Linear Regression Analysis

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	88.988	10.620		8.379	.000
	Kepemimpinan Kepala Sekolah	1.916	1.733	3.217	3.106	.008
	Supervisi Akademik	1.764	1.760	2.915	4.002	.032

a. Dependent Variable: Kinerja Mengajar Guru

The following are the results of the multiple linear regression analysis and their interpretations:

1) The constant value of 88.988 indicates that when the variables of Principal Leadership and Academic Supervision are held constant or assumed not to change, the value of Teachers' Teaching Performance is 88.988.

2) The regression coefficient for the Principal Leadership variable ( $X_1$ ) is 1.916, indicating that every one-unit increase in Principal Leadership is associated with an increase of 1.916 in Teachers' Teaching Performance, assuming other variables remain constant.

3) The regression coefficient for the Academic Supervision variable ( $X_2$ ) is 1.764, meaning that every one-unit increase in Academic Supervision will increase Teachers' Teaching Performance by 1.764. The significance value of 0.032, which is less than 0.05, indicates that the Academic Supervision variable has a positive and significant effect on teachers' teaching performance.

#### e. Hypothesis Testing

##### 1) t-test

**Table 12.** t-test  
Coefficients<sup>a</sup>

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	88.988	10.620		8.379	.000
	Kepemimpinan Kepala Sekolah	1.916	1.733	3.217	3.106	.008
	Supervisi Akademik	1.764	1.760	2.915	4.002	.032

a. Dependent Variable: Kinerja Mengajar Guru

Based on Table 12 (t-test), this test was conducted to determine the partial effect of each independent variable on the dependent variable, namely teachers' teaching performance. With a sample size of 31 respondents and two independent variables, the degrees of freedom (df) were calculated using the formula  $df = n - k - 1$ , resulting in  $df = 31 - 2 - 1 = 28$ . At a significance level of 5% ( $\alpha = 0.05$ ), the t-table value is  $\pm 2.048$ . The analysis results show that the Principal Leadership variable ( $X_1$ ) has a t-calculated value of 3.106, which is greater than the t-table value ( $3.106 > 2.048$ ), with a significance value of 0.008 ( $< 0.05$ ). This indicates that Principal Leadership has a positive and significant effect on teachers' teaching performance. Furthermore, the Academic Supervision variable ( $X_2$ ) has a t-calculated value of 4.002, which is also greater than the t-table value ( $4.002 > 2.048$ ), with a significance value of 0.032 ( $< 0.05$ ). This shows that Academic Supervision also has a positive and significant effect on teachers' teaching performance. Thus, it can be concluded that both independent variables partially have a significant influence on teachers' teaching performance. In other words, the better the Principal Leadership and Academic Supervision, the higher the teachers' teaching performance.

##### 2) F-test

**Table 13.** F-test  
ANOVA<sup>a</sup>

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	499.593	2	249.797	50.008	.002 <sup>b</sup>
	Residual	3483.246	28	124.402		
	Total	3982.839	30			

a. Dependent Variable: Kinerja Mengajar Guru

b. Predictors: (Constant), Supervisi Akademik, Kepemimpinan Kepala Sekolah

Based on Table 13 (F-test/ANOVA), this test aims to determine whether the independent variables, namely Principal Leadership ( $X_1$ ) and Academic Supervision ( $X_2$ ), simultaneously influence Teachers' Teaching Performance (Y). With a sample size of 31 and two independent variables, the degrees of freedom

are  $df_1 = 2$  (number of independent variables) and  $df_2 = 28$  ( $n - k - 1 = 31 - 2 - 1$ ). The F-table value is 3.34. Based on the calculation results, the F-calculated value is 50.008 with a significance value of 0.002. When compared to the decision-making criterion (significance value  $< 0.05$ ), the result shows that  $0.002 < 0.05$ . Therefore, it can be concluded that both independent variables simultaneously have a significant effect on teachers' teaching performance. In simpler terms, this result indicates that Principal Leadership and Academic Supervision, when considered together, play an important role in improving teachers' teaching performance. This means that the better these two aspects are implemented simultaneously, the better the resulting teaching performance.

### 3) Coefficient of Determination ( $R^2$ )

**Table 14.** Coefficient of Determination ( $R^2$ )

<b>Model Summary<sup>b</sup></b>				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.354 <sup>a</sup>	.625	.730	11.15355

a. Predictors: (Constant), Supervisi Akademik ,  
Kepemimpinan Kepala Sekolah

b. Dependent Variable: Kinerja Mengajar Guru

Based on Table 14, the results show the coefficient of determination from the regression model used. The most important value to note is the R Square value of 0.625. This figure indicates that 62.5% of the variation in Teachers' Teaching Performance can be explained by the two independent variables, namely Principal Leadership and Academic Supervision. In other words, these two variables make a substantial contribution to influencing teachers' teaching performance. The better the leadership and supervision practices, the more likely teachers' performance will improve. However, not all variations in teachers' performance can be explained by this model. Approximately 37.5% is influenced by other factors outside this study, such as work experience, personal motivation, school environment, and other variables. Thus, in general, the R Square value indicates that the research model is relatively strong, although other contributing factors beyond the variables examined still play a role.

## Discussion

### 1. The Influence of Principal Leadership on Teachers' Teaching Performance

Based on the results of hypothesis testing (t-test), the t-calculated value is 3.106, which is greater than the t-table value of 2.048, with a significance value of 0.008, which is less than 0.05. These results indicate that principal leadership has a positive and significant effect on teachers' teaching performance. Practically, this finding suggests that the better the leadership style implemented by the principal, the higher the quality of teachers' performance in carrying out their teaching duties. Principals who are able to provide clear direction, establish effective communication, and create a conducive working environment will encourage teachers to perform more optimally. In addition, effective leadership plays a role in providing motivation, supervision, and professional support to teachers. This makes teachers feel more valued and supported in fulfilling their responsibilities, which in turn enhances their performance in lesson planning, implementation, and evaluation of student learning outcomes. The findings of this study are consistent with research conducted by Purwati, Ahyani, and Mahasir (2022), which found that principal leadership has a positive and significant effect on teachers' performance. The study showed that leadership that provides direction, motivation, and professional support can improve the quality of teachers' performance in the learning process.

These findings are also supported by Firman, Sudadio, Rusdiyani, and Suryadi (2024), who state that principal leadership is one of the key factors influencing the improvement of teachers' performance in carrying out their professional duties in schools. Furthermore, research by Iriyanah, Sutisna, and Komarudin (2024) also indicates that principal leadership makes a significant contribution to improving teachers' performance. Principals who effectively perform their leadership functions are able to guide teachers to implement the learning process in a more professional and responsible manner. Based on the results of this

study and the support from previous research, it can be concluded that principal leadership is a crucial factor in improving teachers' teaching performance. Effective leadership not only functions as a controller of the school organization but also as a primary driver in enhancing the quality of learning. Therefore, principals need to continuously develop their leadership competencies in order to create a school environment that supports teacher professionalism and the overall improvement of educational quality.

## **2. The Influence of Academic Supervision on Teachers' Teaching Performance**

Based on the results of the t-test, the t-calculated value is 4.002, which is greater than the t-table value of 2.048, with a significance value of 0.032, which is less than 0.05. These results indicate that academic supervision has a positive and significant effect on teachers' teaching performance. Thus, the hypothesis stating that academic supervision influences teachers' performance is accepted. More specifically, academic supervision is an essential form of professional development in the field of education. Through academic supervision, principals or relevant authorities can provide guidance, direction, and evaluation of the teaching and learning process conducted by teachers. When supervision is carried out in a planned, structured, and continuous manner, teachers receive constructive feedback that helps improve and enhance the quality of their instruction. Effective academic supervision does not merely function as a monitoring tool, but also as a means of professional development for teachers. For instance, through classroom observations, reflective discussions, and constructive feedback, teachers are able to identify their strengths and weaknesses in the teaching process. This enables them to continuously learn and adapt to more innovative instructional methods that align with students' needs. In addition, academic supervision can also enhance teachers' work motivation. When teachers feel supported, guided, and acknowledged in their teaching practices, they develop a stronger sense of responsibility and a desire to perform at their best.

Such support may take the form of constructive suggestions, professional training, or recognition of achievements. The findings of this study are consistent with research conducted by Purwati, Ahyani, and Mahasir (2022), which states that academic supervision has a significant influence on teachers' performance. The study demonstrates that systematically implemented academic supervision can help teachers improve the quality of learning and refine their classroom teaching practices. Another study by Sufriadi, Kasmini, and Musdiani (2025) also indicates that academic supervision is closely related to the improvement of teachers' performance. Although in that study academic supervision did not always show a dominant partial effect, it still plays an important role in supporting the enhancement of teacher professionalism. Furthermore, research by Jabar and Susilo (2021) shows that educational supervision has a positive influence on teachers' performance. Supervision that is conducted in a planned and continuous manner can assist teachers in improving the quality of the learning process, thereby contributing to the overall improvement of educational quality in schools. In conclusion, academic supervision is a crucial factor in improving teachers' teaching performance. When implemented effectively, it serves not only as a monitoring activity but also as a professional development process that enables teachers to continuously enhance their pedagogical and professional competencies.

## **3. The Influence of Principal Leadership and Academic Supervision on Teachers' Teaching Performance**

Based on the results of hypothesis testing (F-test), the F-calculated value is 50.008, which is significantly greater than the F-table value of 3.34, with a significance value of 0.002, which is less than 0.05. These results indicate that, simultaneously, both independent variables have a positive and significant effect on teachers' teaching performance. This means that principal leadership and academic supervision cannot be separated in efforts to improve teachers' performance. Both variables complement each other and work together in creating conditions that support the enhancement of instructional quality. Principal leadership plays a role in providing direction, vision, and motivation, while academic supervision functions as a means of professional guidance and evaluation of the teaching process. When these two aspects operate synergistically, their impact on teachers' performance becomes stronger. For example, a principal with effective leadership can clearly guide teachers, which is then reinforced by academic supervision that provides concrete feedback on classroom teaching practices. This combination ensures that teachers not only understand what to do but also how to do it more effectively.

Moreover, effective leadership combined with continuous supervision can create a professional and supportive working environment. Teachers become more motivated, more open to evaluation, and more driven to improve their competencies. This ultimately has a direct impact on improving teaching performance in terms of planning, implementation, and evaluation of learning. The findings of this study are consistent with research conducted by Purwati, Ahyani, and Mahasir (2022), which shows that principal leadership and academic supervision jointly have a significant influence on teachers' performance. The study emphasizes that these two variables are key factors in improving the quality of teachers' work in schools. Research by Iriyanah, Sutisna, and Komarudin (2024) also indicates that principal leadership and academic supervision simultaneously contribute significantly to improving teachers' performance and the overall quality of education in schools. These findings reinforce the view that the success of improving instructional quality is strongly influenced by effective school leadership and professional development systems through academic supervision.

Additionally, research by Firman et al. (2024) demonstrates that principal leadership and academic supervision are two important factors that can enhance teachers' performance in carrying out their professional duties. The combination of effective leadership and high-quality supervision is capable of creating a more productive and high-quality learning environment. Based on the results of this study and the support from previous research, it can be concluded that principal leadership and academic supervision play a crucial role in improving teachers' teaching performance. Effective principal leadership provides direction and motivation, while academic supervision offers professional guidance that helps teachers enhance their competencies in the instructional process. Overall, the findings indicate that improving the quality of education in schools requires a comprehensive approach through strengthening principal leadership and implementing effective academic supervision. These two factors must operate synergistically to develop professional, competent teachers who are capable of conducting optimal learning processes, thereby achieving educational goals effectively.

## V. CONCLUSION

This study demonstrates that principal leadership has a positive and significant partial effect on teachers' teaching performance at SMA Negeri 1 Bitung, where effective and supportive leadership styles are able to encourage teachers to carry out their instructional duties more optimally. Likewise, academic supervision has been proven to have a significant effect in enhancing teacher professionalism through the provision of guidance and constructive feedback, which helps teachers improve their instructional strategies and classroom innovations. Simultaneously, the integration of principal leadership and the implementation of academic supervision contributes 62.5% to the variation in teachers' teaching performance. This finding confirms that the synergy between managerial direction and continuous professional development is a key factor in improving the quality of the teaching and learning process, as well as in achieving students' competencies in the school.

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