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The Influence of Work Discipline, Non-Physical Work Environment, and Work Motivation on Teacher Performance at SMKN 1 Cikarang Pusat

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Abstract

This study aims to analyze the effects of work discipline, the non-physical work environment, and work motivation on teacher performance at SMKN 1 Cikarang Pusat. A quantitative survey involved all 62 teachers through saturated sampling. Primary data were obtained using five-point Likert-scale questionnaires and analyzed through multiple linear regression with IBM SPSS Statistics 29. Instrument validity, reliability, and regression assumptions were also assessed. Partial regression results showed that work discipline was not statistically significant ($B = -0.154$; $t = -1.062$; $p = 0.293$), providing no support for H1. The non-physical work environment was positively associated with teacher performance ($B = 0.588$; $t = 4.010$; $p < 0.001$), supporting H2. Work motivation also demonstrated a significant positive association ($B = 0.260$; $t = 2.535$; $p = 0.014$), supporting H3. The simultaneous test indicated a significant joint relationship ($F = 26.517$; $p < 0.001$), supporting H4. The model explained 57.8% of performance variation ($R^2 = 0.578$; adjusted $R^2 = 0.557$). The non-physical work environment had the largest standardized coefficient ($\beta = 0.603$). These findings highlight professional relationships, supervisory communication, and motivation as relevant considerations for school management, without establishing causal effects. Interpretation remains limited by the single-school setting and observational survey design.

Keywords: *Non-Physical Work Environment, School Management, Teacher Performance, Work Discipline, Work Motivation.*

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INTRODUCTION

Teacher performance represents a fundamental determinant of educational quality, particularly in vocational secondary schools where instructional activities must integrate theoretical knowledge, practical competencies, and preparation for employment. Teachers are responsible for developing instructional plans, conducting classroom activities, assessing learning outcomes, and maintaining professional standards that support institutional educational objectives. Research examining instructional leadership, school climate, and teacher performance has emphasized the relevance of organizational conditions to teachers' professional responsibilities and educational outcomes (Habibi et al., 2025). The relationship between perceived organizational support, professional characteristics, and teacher performance further indicates that teaching effectiveness cannot be explained exclusively through individual competence (Li et al., 2025). Indonesian educational research has similarly examined managerial support, working conditions, and teacher motivation as interconnected dimensions of teacher performance, reinforcing the importance of organizational and psychological considerations (Ulfah et al., 2024). The relationship between school climate, instructional quality, and teacher motivation also demonstrates the relevance of examining workplace conditions alongside teachers' professional activities (Erdem & Koçyiğit, 2025). Preliminary observations at SMKN 1 Cikarang Pusat identified delays in teaching administration, teacher absences, variations in instructional quality, and communication difficulties, while attendance records from 2022–2025 indicated fluctuations with a higher level of absence in 2024.

Contemporary research on teacher performance has increasingly examined the contribution of work discipline, workplace conditions, and motivation through organizational behavior and educational management approaches. Work discipline concerns adherence to institutional regulations, attendance

requirements, and professional responsibilities, while the working environment encompasses organizational relationships and conditions influencing teachers' daily activities. Empirical research incorporating work discipline, motivation, and work environment into teacher performance analysis provides a foundation for understanding these factors as interconnected organizational characteristics (Khairuddin et al., 2024). Investigations specifically addressing the non-physical work environment, discipline, and motivation have extended this analytical framework to the interpersonal and psychological conditions surrounding teachers' professional responsibilities (Farida et al., 2025). Alternative research models have examined motivation, discipline, and work environment in relation to teacher performance through organizational commitment, introducing a different configuration of explanatory relationships (Wijayaningsih, 2025). Research examining teachers' enthusiasm for work, teaching motivation, and achievement goals further establishes the relevance of motivational processes to professional engagement and educational responsibilities (Aytaç et al., 2024).

Existing literature provides substantial evidence for examining organizational and individual factors associated with teacher performance, although important contextual and conceptual limitations remain. Research involving civil servant teachers in Cirebon has specifically examined the non-physical work environment and job satisfaction in relation to work discipline, illustrating that workplace relationships may occupy different positions within organizational models (Ramadhanty & Susijawati, 2026). Studies linking school climate, teacher motivation, and instructional quality have also investigated relationships extending beyond direct associations between working conditions and performance (Erdem & Koçyiğit, 2025). Research concerning professional learning communities and intrinsic motivation highlights the relevance of collegial relationships and collaborative professional activities, although its analytical focus differs from the combined predictors proposed in the present investigation (Long et al., 2024). An investigation involving teachers in Deli Serdang has considered non-physical working conditions, discipline, and motivation within a performance framework, providing a particularly relevant comparison while retaining a different institutional and geographical setting (Farida et al., 2025). These variations establish a contextual research gap concerning the relationships among work discipline, non-physical work environment, work motivation, and teacher performance within the specific organizational characteristics of vocational secondary education. The available studies do not directly establish how these three factors are associated with teacher performance at SMKN 1 Cikarang Pusat, particularly where attendance fluctuations, administrative delays, and communication difficulties have been identified through preliminary observations.

The unresolved relationships among discipline, non-physical working conditions, motivation, and teacher performance have practical implications for educational management and institutional quality assurance. Delays in completing teaching administration and irregular attendance may disrupt instructional preparation and school operations, while ineffective professional communication can complicate coordination among teachers and administrators. Research addressing managerial support, working conditions, and teacher motivation indicates the relevance of considering organizational and individual characteristics when evaluating teachers' professional performance (Ulfah et al., 2024). Evidence concerning instructional leadership, organizational commitment, and school climate further supports examining institutional conditions associated with teacher performance rather than focusing exclusively on individual compliance (Habibi et al., 2025). Research involving organizational support and teacher self-efficacy also provides a basis for considering how professional support and employee characteristics relate to performance outcomes (Li et al., 2025). Teachers' motivational orientation warrants separate attention because the relationship between enthusiasm for work and teaching motivation reflects psychological dimensions that cannot be represented adequately through disciplinary indicators alone (Aytaç et al., 2024).

The present investigation is positioned within educational human resource management by examining work discipline, non-physical work environment, and work motivation as explanatory variables associated with teacher performance at SMKN 1 Cikarang Pusat. Previous research in Deli Serdang has addressed a comparable combination of variables, establishing an empirical reference point while leaving the institutional circumstances of the present vocational school unexamined (Farida et al., 2025). Studies incorporating discipline, motivation, and general work environment into teacher performance models provide broader organizational evidence but do not necessarily isolate the interpersonal and psychological dimensions of non-physical working conditions (Khairuddin et al., 2024). Research involving organizational commitment as an intervening mechanism also differs from

a model focused on the direct explanatory relationships between discipline, non-physical environment, motivation, and teacher performance (Wijayaningsih, 2025). The distinction between general workplace conditions and non-physical organizational relationships is further relevant to studies examining teacher job satisfaction and workplace discipline within public educational institutions (Ramadhanty & Susijawati, 2026). The proposed contribution lies in applying an integrated three-predictor framework to a specific vocational secondary school while emphasizing professional communication, interpersonal relationships, institutional discipline, and motivational characteristics as distinct analytical dimensions. This contextual contribution addresses the absence of institution-specific empirical evidence without claiming that the selected variables or their relationships have never been investigated in previous educational research.

This research aims to examine the influence of work discipline, non-physical work environment, and work motivation on teacher performance at SMKN 1 Cikarang Pusat. The investigation focuses on work discipline as adherence to institutional regulations and professional responsibilities, the non-physical work environment as interpersonal relationships and organizational communication, and work motivation as the psychological orientation supporting teachers' professional activities. The research seeks to assess the individual relationships of these three explanatory variables with teacher performance and evaluate their combined explanatory contribution within the institutional setting. The analysis is directed toward clarifying the relevance of organizational compliance, supportive working relationships, and motivational characteristics to differences in teachers' professional performance. The anticipated scientific contribution is context-specific empirical evidence that extends the application of educational human resource management concepts to vocational secondary education without presupposing the direction or statistical significance of the relationships examined. The practical contribution is to provide an evidence-based foundation for school management in developing policies related to teacher discipline, professional communication, collegial cooperation, motivational support, and improvements in instructional performance.

RESEARCH METHODS

This study employed a quantitative survey design to examine the influence of work discipline, non-physical work environment, and work motivation on teacher performance at SMKN 1 Cikarang Pusat, located in Pasirranji, Bekasi Regency, West Java, Indonesia. The research model presented in Figure 1 specified work discipline (X1), non-physical work environment (X2), and work motivation (X3) as independent variables, with teacher performance (Y) as the dependent variable. Four hypotheses were formulated to examine the individual relationships of the three predictors with teacher performance and their simultaneous influence within the regression model. Work discipline was conceptualized through regulatory compliance, punctuality, performance consistency, responsibility, and adherence to established procedures, reflecting behavioral dimensions examined in teacher performance research (Khairuddin et al., 2024). The non-physical work environment incorporated responsibility and professional relationships with colleagues and supervisors, consistent with research addressing interpersonal working conditions in educational institutions (Ramadhanty & Susijawati, 2026). Work motivation was operationalized through physiological needs, career development, socialization, recognition, and self-actualization, reflecting the relevance of motivational characteristics to teacher performance (Farida et al., 2025).

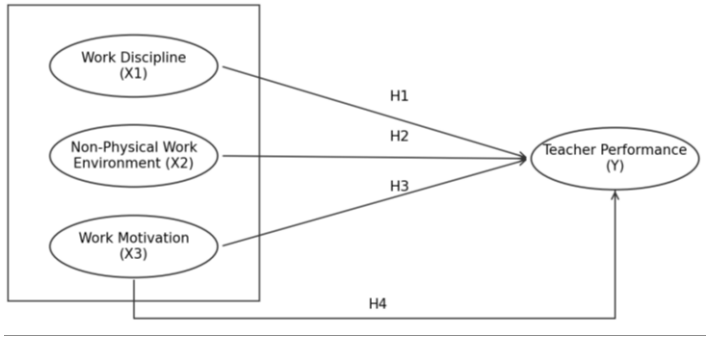


Figure 1. Research Model
Source: Research model, 2025.

Table 1. Operational Definitions of Research Variables

Variable	Indicators	Measurement Scale
Work Discipline (X1)	Compliance with rules; punctuality; consistency in performance; responsibility for duties; compliance with work procedures	Likert
Non-Physical Work Environment (X2)	Responsibility; relationships with colleagues; relationships and interactions with supervisors	Likert
Work Motivation (X3)	Physiological needs; career development; socialization; recognition; self-actualization	Likert
Teacher Performance (Y)	Quality; quantity; timeliness; effectiveness; commitment	Likert

Source: Research model, 2025.

The study population comprised all 62 teachers at SMKN 1 Cikarang Pusat, and saturated sampling was applied to include every population member as a respondent. Primary data were collected through questionnaires employing a five-point Likert scale, while secondary data were obtained from institutional documents, scholarly literature, and relevant previous studies. The research variables and their measurement indicators are presented in Table 1, reflecting the multidimensional assessment of workplace characteristics and teacher performance adopted in educational management research (Atiyyah et al., 2024). Instrument quality was assessed through validity and reliability tests, while classical regression assumptions were examined through normality, multicollinearity, and heteroscedasticity tests, consistent with the quantitative orientation of previous teacher performance research (Wijayaningsih, 2025). Multiple linear regression was employed to estimate partial and simultaneous relationships, with t-tests evaluating the individual hypotheses, an F-test assessing the joint hypothesis, and the coefficient of determination (R^2) measuring the model's explanatory contribution. Statistical analysis was conducted using IBM SPSS Statistics 29, with the relationships interpreted in reference to empirical research examining organizational climate, motivation, and teacher performance (Erniati et al., 2024).

RESULTS AND DISCUSSION

Respondent Characteristics, Instrument Quality, and Regression Diagnostics

The respondent characteristics were examined to establish the demographic and professional composition of the teachers participating in the quantitative survey at SMKN 1 Cikarang Pusat. The study involved 62 teachers selected through saturated sampling, representing the entire teaching population identified in the research. Table 2 presents the respondents' gender, age, educational qualifications, and length of service as reported in the original survey. These characteristics provide descriptive information for interpreting the institutional setting in which work discipline, non-physical work environment, work motivation, and teacher performance were measured. Research examining organizational support, professional characteristics, and teacher performance indicates that individual and institutional attributes warrant consideration when evaluating educational workforce outcomes (Li et al., 2025). Investigations involving instructional leadership, school climate, and teacher performance also demonstrate the relevance of organizational characteristics to teachers' professional activities (Habibi et al., 2025). The respondent profile consequently provides contextual evidence concerning the observed teaching workforce without establishing demographic differences in performance or relationships among the research variables.

The reported gender distribution comprised 31.60% male teachers and 69.40% female teachers, indicating a higher recorded proportion of female respondents. Teachers aged 25–30 years constituted the largest age category at 58.10%, followed by those aged 36–40 years at 16.10%, over 40 years at 14.50%, and 31–35 years at 11.30%. Educational qualifications were reported as 1.60% diploma holders, 72.60% bachelor's degree holders, and 9.70% master's degree holders, although these reported

categories did not account for the entire respondent distribution. Regarding length of service, 54.80% had worked for 1–5 years, 19.40% for 6–10 years, and 12.90% each for 11–15 years and more than 15 years. Research examining educational environments and teachers' professional commitment provides a relevant basis for considering workforce characteristics when interpreting organizational conditions, although demographic distributions alone do not explain individual performance outcomes (Al-Zu'bi et al., 2024). The original gender percentages sum to 101.00%, while the reported education categories total 83.90%, indicating descriptive inconsistencies that require verification against the underlying respondent records without altering the source data.

Table 2. Respondent Characteristics

Variable	Characteristic	Percentage
Gender	Male	31.60%
	Female	69.40%
Age	25–30 years	58.10%
	31–35 years	11.30%
	36–40 years	16.10%
	Over 40 years	14.50%
Highest education	Diploma (D3)	1.60%
	Bachelor's Degree (S1)	72.60%
	Master's Degree (S2)	9.70%
Length of service	1–5 years	54.80%
	6–10 years	19.40%
	11–15 years	12.90%
	Over 15 years	12.90%

Source: Researchers, 2026.

Instrument validity testing was conducted to evaluate the relationships between questionnaire items and their corresponding variable scores. The original analysis applied a reference correlation coefficient of 0.250 to determine whether the measurement items satisfied the specified validity criterion. The calculated correlation coefficients ranged from 0.543 to 0.643 for work discipline, 0.640 to 0.711 for the non-physical work environment, 0.638 to 0.773 for work motivation, and 0.584 to 0.637 for teacher performance. Every reported coefficient range exceeded the reference value, leading the researchers to classify the measurement items across all four variables as valid. Previous research examining discipline, motivation, workplace conditions, and teacher performance reinforces the importance of distinguishing these organizational and behavioral dimensions within empirical measurement frameworks (Khairuddin et al., 2024). Research incorporating organizational commitment into relationships between workplace factors and teacher performance further illustrates the conceptual distinctions that may exist among related professional characteristics (Wijayaningsih, 2025). The available results establish compliance with the reported correlation criterion, although the absence of individual item coefficients and additional construct-validity statistics limits independent evaluation of the measurement structure.

The validity results presented in Table 3 indicate that work motivation exhibited the widest reported correlation interval, extending from 0.638 to 0.773. The non-physical work environment demonstrated correlations between 0.640 and 0.711, while work discipline and teacher performance recorded narrower ranges of 0.543–0.643 and 0.584–0.637, respectively. These differences describe variation in the reported item correlations rather than differences in the explanatory importance of the variables within the regression model. The relatively close measurement domains also require attention because professional responsibility appears among the indicators associated with both work discipline and the non-physical work environment. Research specifically investigating non-physical working conditions, discipline, motivation, and teacher performance provides a relevant empirical basis for maintaining conceptual distinctions among these explanatory factors (Farida et al., 2025). The reported coefficients support the instrument-validity decisions adopted in the research, but they do not independently establish discriminant validity or eliminate the possibility of overlapping questionnaire content.

Table 3. Validity Test Results

Variable	Calculated r Range	Reference r	Decision
Work Discipline	0.543–0.643	0.250	Valid
Non-Physical Work Environment	0.640–0.711	0.250	Valid
Work Motivation	0.638–0.773	0.250	Valid
Teacher Performance	0.584–0.637	0.250	Valid

Source: Researchers, 2026

The reliability of the research instruments was assessed using Cronbach's alpha to determine the internal consistency of questionnaire responses within each measured variable. Table 4 reports coefficients of 0.920 for work discipline, 0.878 for the non-physical work environment, 0.940 for work motivation, and 0.873 for teacher performance. All four coefficients exceeded the minimum reliability threshold of 0.70 specified in the original research. Work motivation demonstrated the highest internal consistency, followed by work discipline, the non-physical work environment, and teacher performance. These differences indicate variation in the consistency of responses within the measured constructs rather than differences in their relationships with teacher performance. Research examining teachers' enthusiasm for work, teaching motivation, and achievement goals highlights the conceptual relevance of motivational characteristics when evaluating professional behavior (Aytaç et al., 2024). The reliability results support the instrument classifications reported by the researchers, although item-level reliability diagnostics were unavailable for determining whether particular questionnaire statements contributed disproportionately to the observed coefficients.

Internal consistency coefficients above the adopted threshold provide evidence that the questionnaire items within each variable were sufficiently related under the study's reliability criterion. The coefficient of 0.940 for work motivation indicates a particularly high degree of internal consistency, but it does not establish that physiological needs, career development, socialization, recognition, and self-actualization contribute equally to teacher performance. Comparable caution applies to the work discipline instrument because consistency among responses concerning punctuality, regulatory compliance, and responsibility cannot independently establish the performance relevance of each indicator. Research involving organizational climate, motivation, and basic education teachers' performance demonstrates the importance of examining relationships between measured constructs rather than interpreting instrument reliability as evidence of explanatory effects (Erniati et al., 2024). Investigations of professional learning communities and intrinsic motivation further illustrate that psychological and interpersonal aspects of teachers' work require conceptual differentiation when incorporated into educational research models (Long et al., 2024). The validity and reliability results consequently support the reported measurement decisions while leaving the relationships among the explanatory variables and teacher performance to be determined through the subsequent regression analysis.

Table 4. Reliability Test Results

No.	Variable	Cronbach's Alpha	Threshold	Decision
1	Work Discipline	0.920	0.70	Reliable
2	Non-Physical Work Environment	0.878	0.70	Reliable
3	Work Motivation	0.940	0.70	Reliable
4	Teacher Performance	0.873	0.70	Reliable

Source: Researchers, 2026

Regression diagnostics were conducted to evaluate whether the residual distribution was compatible with the normality assumption underlying the multiple linear regression analysis. The original research assessed residual normality through a histogram of standardized regression residuals and a normal P–P plot generated using IBM SPSS Statistics 29. Figure 2 was described as displaying an approximately bell-shaped residual distribution centered near zero, with a reported mean of −1.43 ×

10^{-15} and a standard deviation of 0.975. These reported values indicate that the standardized residuals were centered close to zero and exhibited dispersion close to one, although neither statistic independently establishes normality. Figure 3 provided an additional graphical assessment through the normal probability plot, which the original researchers used alongside the histogram to evaluate residual behavior. Research addressing working conditions, motivational processes, and teacher performance provides a substantive rationale for examining the regression relationships, but the reliability of the resulting statistical inference also depends on appropriate diagnostic evaluation (Ulfah et al., 2024). The original study interpreted the graphical evidence as supporting approximate residual normality, although the absence of the actual plot images in the supplied material prevents independent visual verification of that conclusion.

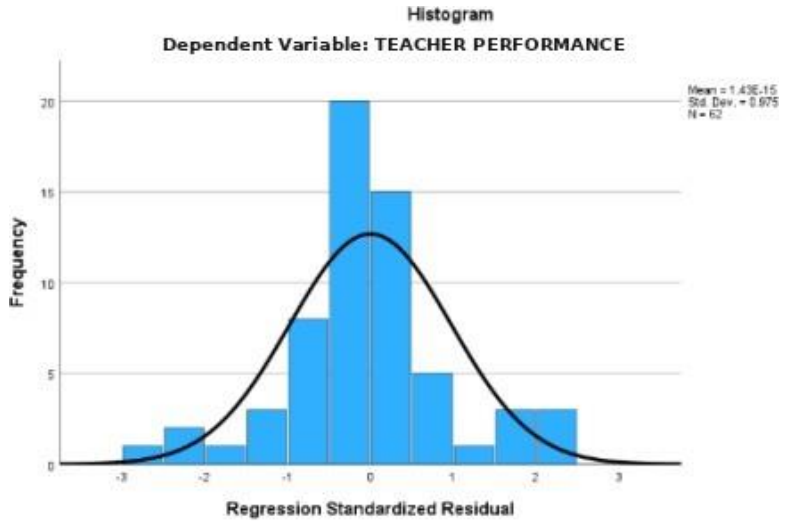


Figure 2. Histogram of Standardized Regression Residuals
Source: Researchers, 2026.

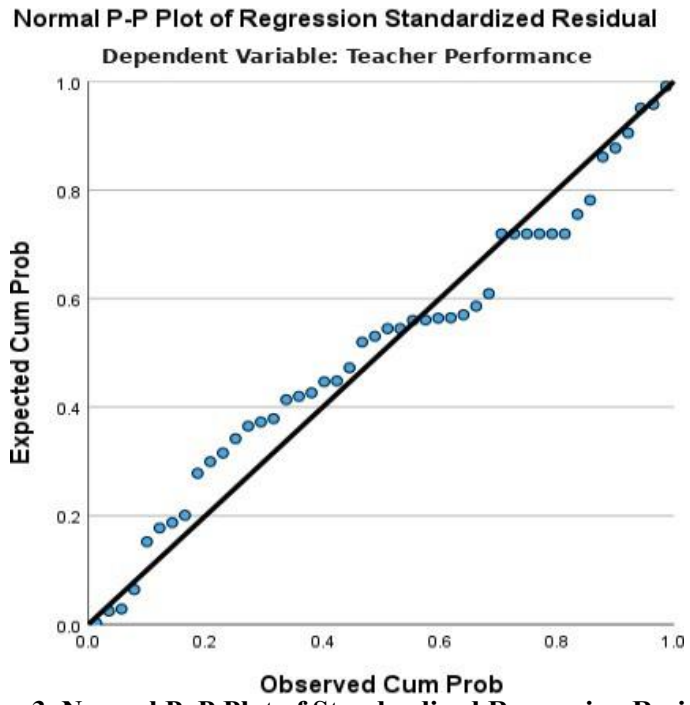


Figure 3. Normal P–P Plot of Standardized Regression Residuals
Source: Researchers, 2026.

The instrument evaluation established that the reported questionnaire indicators satisfied the original validity criterion and that the four measured variables exceeded the specified reliability

threshold. These findings provide preliminary support for using the questionnaire responses in the estimated regression model, subject to the limitations of the available measurement statistics. The residual histogram and normal P–P plot were interpreted by the original researchers as consistent with approximate normality, although their graphical evidence could not be independently inspected from the supplied text. The methodology also specified multicollinearity and heteroscedasticity assessments, but the numerical results of those procedures were not included in the available findings. Research examining teacher motivation, organizational climate, and performance reinforces the relevance of evaluating workplace characteristics within a multivariable framework, while the statistical adequacy of the model remains dependent on the quality of its diagnostic evidence (Nasar et al., 2025). The reported measurement results support further examination of the regression estimates, with unresolved diagnostic information requiring consideration when interpreting the model's explanatory capacity and the statistical significance of its predictors.

Model Explanatory Power and Simultaneous Effects on Teacher Performance

Multiple linear regression analysis was conducted to evaluate the collective relationship between work discipline, non-physical work environment, work motivation, and teacher performance at SMKN 1 Cikarang Pusat. The analysis incorporated responses from 62 teachers, representing the entire teaching population included through saturated sampling. Work discipline, non-physical work environment, and work motivation were specified as independent variables, while teacher performance was treated as the dependent variable. The evaluation focused on the multiple correlation coefficient, coefficient of determination, adjusted coefficient of determination, and simultaneous F-test to establish the explanatory characteristics of the regression model. Previous research examining principal leadership, working conditions, and motivation has demonstrated the relevance of analyzing organizational and individual factors within teacher performance models (Atiyyah et al., 2024). Research investigating school climate, instructional quality, and teacher motivation further supports examining professional working conditions and motivational characteristics within an integrated educational management framework (Erdem & Koçyiğit, 2025).

The regression model produced a multiple correlation coefficient of 0.760, indicating a strong association between the predicted and observed teacher performance scores. This coefficient represents the collective relationship between the dependent variable and the linear combination of work discipline, non-physical work environment, and work motivation. The magnitude of the multiple correlation indicates that the predictors jointly capture substantial variation in teacher performance within the observed sample. However, the multiple correlation coefficient does not establish the direction or statistical significance of each independent variable because those relationships require examination through individual regression coefficients. Research investigating intrinsic motivation and school climate as predictors of teacher performance reinforces the relevance of incorporating psychological and organizational characteristics into empirical educational models (Herli et al., 2026). Studies examining leadership, work climate, and motivation similarly demonstrate the analytical importance of considering multiple institutional characteristics when evaluating teachers' professional outcomes (Nursofah & Muryani, 2025). The reported correlation should consequently be interpreted as evidence of model-level association rather than proof that each explanatory variable contributes equally or positively to teacher performance.

The coefficient of determination presented in Table 5 provides a quantitative measure of the explanatory contribution of the three independent variables to teacher performance. The reported R^2 value of 0.578 indicates that work discipline, non-physical work environment, and work motivation jointly accounted for approximately 57.8% of the observed variance in teacher performance. The remaining 42.2% represents variation not explained by the specified regression model, although its precise sources cannot be determined from the available statistical results. The adjusted coefficient of determination was 0.557, representing an explanatory proportion of 55.7% after adjustment for the number of predictors and sample size. Research examining school climate and work motivation in relation to teacher performance provides a relevant comparison for considering the explanatory roles of organizational and psychological factors in educational institutions (Warningsih & Purba, 2025). The coefficient of determination describes statistical model fit within the study sample and does not establish that the included variables causally determine the corresponding proportion of teacher performance.

Table 5. Coefficient of Determination

Model	R	R^2	Adjusted R^2	Std. Error of Estimate
1	0.760	0.578	0.557	3.96310

Source: Researchers, 2026.
Predictors: work motivation, work discipline, non-physical work environment. Dependent variable: teacher performance.

The difference between R^2 of 0.578 and adjusted R^2 of 0.557 amounted to 0.021, equivalent to a reduction of 2.1 percentage points after statistical adjustment. This adjustment is relevant because the model incorporated three explanatory variables estimated from 62 respondents, requiring consideration of the relationship between model complexity and explanatory capacity. The standard error of estimate was 3.96310, indicating the residual dispersion of observed teacher performance scores around the values predicted by the regression equation. Although the explanatory proportion was substantial within the sample, the available results did not establish whether the model would demonstrate comparable predictive performance in other vocational schools. Research examining teachers' educational goals and school climate over time illustrates the relevance of institutional characteristics that may vary beyond a single observational measurement period (Oeschger et al., 2024). Investigations incorporating school climate, teacher workload, and job satisfaction also demonstrate that educational outcomes can be examined through organizational dimensions extending beyond those included in the present regression model (Lindström, 2026). The unexplained variance and absence of external validation consequently limit conclusions concerning the completeness and generalizability of the estimated explanatory framework.

The simultaneous significance of the regression model was examined using an analysis of variance F-test, with the original statistical results presented in Table 6. The regression sum of squares was 1249.432, while the residual sum of squares was 910.956 and the total sum of squares was 2160.387. The corresponding degrees of freedom were 3 for regression, 58 for residual variation, and 61 for total variation, consistent with the sample of 62 teachers and three predictors. The analysis produced a regression mean square of 416.477 and a residual mean square of 15.706, yielding an F statistic of 26.517. The reported significance value was below 0.001, indicating that the regression model was statistically significant at the 0.05 threshold and supporting the fourth research hypothesis. Previous research examining work environment and teacher motivation as organizational correlates of teacher performance provides a relevant empirical basis for interpreting the collective importance of these workplace characteristics (Octaviani et al., 2024).

Table 6. Simultaneous F-Test Results

Source	Sum of Squares	df	Mean Square	F	p-value
Regression	1249.432	3	416.477	26.517	< 0.001
Residual	910.956	58	15.706		
Total	2160.387	61			

Source: Researchers, 2026.
Dependent variable: teacher performance. Predictors: work motivation, work discipline, and the non-physical work environment.

The simultaneous F-test evaluated whether the regression model containing work discipline, non-physical work environment, and work motivation explained a statistically significant proportion of teacher performance variation relative to an intercept-only model. The calculated F statistic of 26.517 exceeded the critical value of approximately 2.76 reported in the original research, while the significance value remained below 0.001. These results support rejection of the joint null hypothesis and indicate that the explanatory variables collectively contribute to the statistical prediction of teacher performance. However, simultaneous statistical significance does not establish that every independent variable has an individually significant relationship with the dependent variable. The reported partial tests indicate that work discipline was not statistically significant, whereas the non-physical work

environment and work motivation demonstrated significant positive associations, distinguishing joint model significance from individual predictor significance. Research examining leadership, management practices, and teacher motivation provides a relevant organizational perspective for understanding how several workplace characteristics may be incorporated into a common educational performance framework (Sariakin et al., 2025). The distinction between simultaneous and partial statistical inference is necessary to avoid attributing the significance of the combined regression model to every predictor independently.

The significant regression model indicates that the measured organizational and motivational characteristics collectively provide information relevant to explaining differences in teacher performance at SMKN 1 Cikarang Pusat. Work discipline represents teachers' adherence to institutional regulations and professional responsibilities, while the non-physical work environment concerns interpersonal relationships and communication within the school organization. Work motivation addresses professional needs, recognition, career development, and self-actualization, representing psychological dimensions potentially associated with instructional performance. Research investigating school climate and motivation in relation to teacher performance supports considering these factors as organizational characteristics that may be associated with educational workforce outcomes (Warningsih & Purba, 2025). Investigations examining teachers' perceptions of principals' organizational citizenship behavior and performance outcomes further demonstrate the relevance of managerial relationships when evaluating professional performance (Schwabsky & Somech, 2025). The model-level findings identify a statistically meaningful combination of predictors but do not establish the mechanisms through which individual working conditions or motivational characteristics are associated with teaching effectiveness.

The regression analysis supported the fourth hypothesis by demonstrating a statistically significant joint relationship between work discipline, non-physical work environment, work motivation, and teacher performance. The coefficient of determination indicated that the three predictors explained 57.8% of observed teacher performance variation, while the adjusted explanatory proportion was 55.7%. These findings provide empirical evidence that organizational and motivational characteristics are relevant to the performance of teachers within the observed vocational school. The remaining unexplained variation indicates that the estimated model does not capture every determinant of teacher performance, although the available data do not permit specific attribution to unmeasured factors. The single-school population and quantitative survey design also restrict causal interpretation and the extent to which the estimated relationships can be generalized to other educational institutions. Although the original research reported graphical evidence supporting approximate residual normality, the absence of detailed multicollinearity and heteroscedasticity results limits a complete evaluation of the regression assumptions. Research addressing educational working environments and teacher motivation reinforces the relevance of examining organizational conditions associated with professional outcomes, while the present evidence establishes their collective explanatory significance specifically at SMKN 1 Cikarang Pusat (Syukur & Sani, 2026).

Partial Effects of Work Discipline, Non-Physical Work Environment, and Work Motivation on Teacher Performance

Partial regression analysis was employed to distinguish the individual associations of work discipline (X1), non-physical work environment (X2), and work motivation (X3) with teacher performance (Y) at SMKN 1 Cikarang Pusat. The model incorporated questionnaire responses from 62 teachers and estimated each regression coefficient while holding the other two explanatory variables constant. The partial t-tests evaluated whether each independent variable demonstrated a statistically significant relationship with teacher performance within the specified regression model. Table 7 presents the unstandardized coefficients, standard errors, standardized coefficients, test statistics, and significance values obtained through IBM SPSS Statistics 29. The distinction between partial relationships is important because a statistically significant simultaneous F-test does not necessarily indicate that every independent variable has an individually significant relationship with the dependent variable. Previous research examining discipline, motivation, and workplace conditions has demonstrated the relevance of incorporating these organizational characteristics into multivariable teacher performance models (Khairuddin et al., 2024). The estimated coefficients must nevertheless be

interpreted as conditional statistical associations within the observed school rather than definitive evidence of causal relationships between organizational characteristics and teacher performance.

The regression results presented in Table 7 identify two positive and statistically significant coefficients and one negative coefficient that does not satisfy the 0.05 significance criterion. Work discipline recorded an unstandardized coefficient of −0.154 and a standardized coefficient of −0.137, indicating a negative estimated relationship after controlling for the other explanatory variables. The non-physical work environment demonstrated an unstandardized coefficient of 0.588 and a standardized coefficient of 0.603, whereas work motivation recorded corresponding values of 0.260 and 0.313. The reported significance values were 0.293 for work discipline, below 0.001 for the non-physical work environment, and 0.014 for work motivation. These differences indicate that the non-physical work environment exhibited the largest standardized association with teacher performance, although coefficient magnitudes alone do not establish statistically significant differences between predictors. Research examining non-physical working conditions, discipline, and motivation in relation to teacher performance provides a relevant empirical comparison, while institutional differences require the present regression results to be interpreted according to the characteristics of SMKN 1 Cikarang Pusat (Farida et al., 2025).

Table 7. Partial Regression Coefficients and t-Test Results

Predictor	B	Std. Error	Beta	t	p-value
Constant	21.520	6.825	—	3.153	0.003
Work Discipline	−0.154	0.145	−0.137	−1.062	0.293
Non-Physical Work Environment	0.588	0.147	0.603	4.010	< 0.001
Work Motivation	0.260	0.103	0.313	2.535	0.014

Source: Researchers, 2026.
Dependent variable: teacher performance.

Work discipline demonstrated a negative unstandardized coefficient of −0.154, with a standard error of 0.145 and a standardized coefficient of −0.137. The calculated t statistic of −1.062 and significance value of 0.293 indicate that its partial relationship with teacher performance was not statistically significant at the 0.05 threshold. The first hypothesis, which proposed a positive and statistically significant effect of work discipline on teacher performance, was consequently not supported by the empirical results. The negative coefficient represents the direction of the estimated conditional association but does not establish that greater work discipline reduces teacher performance. Work discipline was operationalized through compliance with institutional regulations, punctuality, consistency in performance, responsibility for assigned duties, and adherence to work procedures. Previous research incorporating principal leadership, discipline, motivation, work environment, and professional work ethic into teacher performance analysis provides a relevant comparative framework for interpreting the contribution of disciplinary characteristics alongside other organizational variables (Nurhayati et al., 2022). The available results do not establish whether the non-significant coefficient reflects limited variation in disciplinary behavior, overlapping explanatory characteristics, or other statistical conditions because the necessary additional diagnostics were not reported.

The absence of a statistically significant partial relationship suggests that disciplinary compliance did not explain meaningful additional variation in teacher performance after accounting for the non-physical work environment and motivation within the estimated model. Attendance consistency, punctuality, and adherence to organizational procedures may support administrative order without necessarily distinguishing teachers according to instructional quality, effectiveness, or professional commitment. The inclusion of performance consistency within the disciplinary indicators also introduces potential conceptual overlap with the dependent variable, although the available item-level information does not permit its magnitude to be assessed. Research examining work discipline and workplace conditions among vocational secondary school teachers provides a relevant educational comparison, but differences in research settings and variable specifications prevent direct generalization to SMKN 1 Cikarang Pusat (Gunawan et al., 2025). Investigations incorporating discipline, work environment, and motivation into teacher performance models further support interpreting disciplinary relationships alongside other institutional characteristics rather than as isolated determinants (Pratama

& Atmajawati, 2024). School management should consequently maintain appropriate professional standards while avoiding the assumption that stricter disciplinary enforcement alone would necessarily improve measured instructional performance.

The non-physical work environment demonstrated a positive unstandardized coefficient of 0.588, a standard error of 0.147, and a standardized coefficient of 0.603. The corresponding t statistic of 4.010 and significance value below 0.001 indicate a positive and statistically significant partial association with teacher performance after controlling for discipline and motivation. These results support the second hypothesis and identify the non-physical work environment as the predictor with the largest standardized coefficient in the estimated regression model. A one-unit increase in the measured non-physical work environment score was associated with a 0.588-unit increase in predicted teacher performance when the other explanatory variables remained constant. The variable incorporated responsibility, relationships with colleagues, and professional interactions with supervisors, reflecting interpersonal and managerial conditions within the school organization. Research examining school climate, instructional quality, and teacher motivation provides a relevant conceptual foundation for understanding how institutional working relationships may be associated with teachers' professional outcomes (Erdem & Koçyiğit, 2025). The estimated coefficient does not establish which individual environmental indicator contributes most strongly to performance because separate regression estimates for responsibility, collegial relationships, and supervisory interactions were unavailable.

Supportive interpersonal relationships may facilitate professional communication concerning instructional planning, classroom responsibilities, student learning needs, and coordination across teaching activities. Constructive interactions between teachers and school leaders may also provide opportunities to communicate operational difficulties, clarify institutional expectations, and obtain feedback concerning professional responsibilities. These relationships offer plausible explanations for the positive regression coefficient, although the study did not directly test the mechanisms connecting interpersonal conditions with teacher performance. Research examining professional learning communities and intrinsic motivation identifies collegial interaction and professional collaboration as relevant characteristics of teachers' working experiences (Long et al., 2024). Investigations involving the non-physical work environment, teacher job satisfaction, and work discipline further demonstrate the importance of distinguishing interpersonal working conditions from formal compliance with institutional regulations (Ramadhanty & Susijawati, 2026). The relatively large standardized coefficient provides an empirical basis for prioritizing further assessment of collegial relationships and supervisory communication at SMKN 1 Cikarang Pusat without treating particular managerial interventions as proven causal solutions.

Work motivation demonstrated a positive unstandardized regression coefficient of 0.260, a standard error of 0.103, and a standardized coefficient of 0.313. The partial hypothesis test yielded a t statistic of 2.535 and a significance value of 0.014, satisfying the 0.05 criterion adopted in the research. The third hypothesis was consequently supported, indicating that work motivation had a positive and statistically significant partial relationship with teacher performance after accounting for discipline and the non-physical work environment. Work motivation was operationalized through physiological needs, career development, socialization, recognition, and self-actualization, representing different dimensions of teachers' perceived professional and personal needs. The unstandardized coefficient indicates that a one-unit increase in the motivation score was associated with a 0.260-unit increase in predicted performance when the other predictors remained constant. Research examining teachers' enthusiasm for work, teaching motivation, and achievement goals provides a relevant basis for interpreting the relationship between motivational characteristics and professional engagement (Aytaç et al., 2024). Investigations addressing managerial support, working conditions, motivation, and teacher performance further emphasize the relevance of motivational characteristics in educational organizations, although the present regression results cannot establish the underlying causal mechanisms (Ulfah et al., 2024).

The partial regression results reveal three distinct statistical relationships, consisting of a negative but non-significant coefficient for work discipline and positive significant coefficients for the non-physical work environment and work motivation. The non-physical work environment demonstrated the largest standardized coefficient, indicating the strongest conditional association with teacher performance among the three explanatory variables. These findings are consistent with the significant simultaneous F-test because joint model significance does not require each independent variable to demonstrate an individually significant coefficient. The observed pattern suggests that

collegial relationships, supervisory communication, and motivational conditions warrant particular attention when evaluating teacher performance, while the non-significant discipline coefficient should not be interpreted as evidence that professional discipline lacks organizational value. Research examining work environment and teacher motivation in relation to teacher performance reinforces the relevance of these organizational characteristics, although their effects and relative contributions may differ across educational institutions (Octaviani et al., 2024). The findings also indicate that managerial recommendations should distinguish statistical associations from demonstrated interventions, particularly where direct evidence concerning changes in teaching practices or organizational policies is unavailable. The single-school research setting, questionnaire-based measurements, overlapping operational indicators, and incomplete regression diagnostics restrict causal interpretation and generalizability, requiring future research to examine these relationships across broader vocational education settings.

CONCLUSION

This study assessed the effects of work discipline, the non-physical work environment, and work motivation on teacher performance at SMKN 1 Cikarang Pusat using multiple linear regression in IBM SPSS Statistics 29. Based on questionnaire responses from 62 teachers, work discipline did not demonstrate a statistically significant partial relationship with teacher performance ($B = -0.154$; $t = -1.062$; $p = 0.293$), indicating that H1 was not supported. The non-physical work environment exhibited a positive and statistically significant relationship ($B = 0.588$; $t = 4.010$; $p < 0.001$), supporting H2. Work motivation also demonstrated a positive and significant relationship ($B = 0.260$; $t = 2.535$; $p = 0.014$), supporting H3. The non-physical work environment had the largest standardized regression coefficient ($\beta = 0.603$), followed by work motivation ($\beta = 0.313$), indicating a stronger conditional association with teacher performance. The simultaneous regression test was statistically significant ($F = 26.517$; $p < 0.001$), supporting H4 and confirming the collective explanatory relevance of the three independent variables. These findings indicate that the significance of the combined regression model does not necessarily imply that each predictor contributes independently at a statistically significant level.

The coefficient of determination was $R^2 = 0.578$, indicating that work discipline, the non-physical work environment, and work motivation jointly explained 57.8% of the observed variation in teacher performance, while 42.2% remained unexplained by the model. The adjusted R^2 of 0.557 further indicated an explanatory proportion of 55.7% after adjustment for the number of predictors and sample size. These findings suggest that supportive interpersonal working conditions and sustained professional motivation warrant particular attention in teacher performance management at SMKN 1 Cikarang Pusat. School administrators may consider strengthening professional communication, collegial cooperation, supervisory support, recognition, and career development while maintaining appropriate disciplinary standards. The study contributes institution-specific empirical evidence regarding the relative associations of organizational and motivational factors with teacher performance in vocational secondary education. Its single-school population, questionnaire-based measurements, and limitations in the available regression diagnostics restrict generalizability, while the observational research design does not establish causal relationships. Future research should examine broader vocational school populations, assess the conceptual distinctions among measurement indicators, and incorporate more comprehensive statistical diagnostics to evaluate the stability of the observed relationships.

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