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Intrinsic Motivation and School Climate as Predictors of Teacher Performance in Rural Indonesian Schools

Herli[1*], Sudarwan Danim [2], Asti Putri Kartiwi [3], Azizatul Khairi[4]
[1,2,3,4] University of Bengkulu, Bengkulu, Indonesia
[1]herliarzad@gmail.com, [2] sudarwan@gmail.com, [3]astiputri@unib.ac.id, akhairi@unib.ac.id
*astiputri@unib.ac.id

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ABSTRACT

Background/purpose. Teacher performance is a critical determinant of educational quality, yet it remains challenged by declining motivation and suboptimal work environments, particularly in developing countries.

Materials/methods. This study examined the influence of intrinsic motivation and school climate on teacher performance among 72 public junior high school teachers in Empat Lawang District, South Sumatra, Indonesia, using a quantitative cross-sectional survey design. Data were collected through validated questionnaires (intrinsic motivation: α = .960; school climate: α = .866; teacher performance: α = .938) and analyzed using Pearson correlation and multiple regression.

Results. Both predictors demonstrated strong positive correlations with teacher performance (intrinsic motivation: $r = .907$; school climate: $r = .826$; $p < .001$). Simple regression revealed that intrinsic motivation accounted for 82.3% of the variance in performance ($R^2 = .823$), while school climate accounted for 68.1% of the variance ($R^2 = .681$). Multiple regression indicated that both variables jointly explained 84.2% of the variance ($R^2 = .842$, $F = 183.326$, $p < .001$), with intrinsic motivation emerging as the dominant predictor ($\beta = .707$) relative to school climate ($\beta = .243$).

Conclusion. These findings suggest that improving teacher effectiveness in resource-constrained rural settings requires prioritizing professional autonomy and competency development alongside a supportive organizational climate.

1. INTRODUCTION

Education is a conscious and systematic process directed at establishing a conducive learning environment in which students are encouraged to develop their potential across spiritual, intellectual, moral, and social dimensions. The successful implementation of educational goals depends heavily on teachers, who serve as primary agents of knowledge transfer and character formation. Teacher quality, therefore, constitutes a critical determinant of national educational success (Rhinesmith et al., 2023).

Contemporary research confirms that teacher performance significantly affects student achievement and overall educational quality (Ozdogru et al., 2025). Nevertheless, substantial global challenges persist, including declining motivation, limited professional development opportunities, and suboptimal working environments, particularly in developing countries

confronting resource constraints and complex systemic barriers (Maharaj & Chauke, 2025; Zheng et al., 2023). Teacher professionalism in such contexts remains underdeveloped, characterized by insufficient professional commitment and weak motivation for continuous competency improvement (Kusanagi, 2022; Revina et al., 2023; Mohzana & Zuana, 2025; Nalipay, 2023). Evaluations of teacher certification programs further suggest that many teachers exhibit professional stagnation and diminished interest in development activities that are not directly linked to financial incentives (Nawas et al., 2025; Kusumawardhani, 2017; Baharuddin & Burhan, 2025).

This phenomenon underscores the critical role of intrinsic motivation, defined as an internal drive to perform activities optimally in the absence of external rewards, as a key component underpinning teacher performance (Bukhari et al., 2023; Tripathi et al., 2018). Teachers with high intrinsic motivation tend to demonstrate greater dedication, initiative, and professional responsibility (Zou et al., 2024). Recent cross-cultural research corroborates that intrinsic motivation positively predicts teaching behavior, particularly with respect to classroom management and instructional clarity (Irnidayanti et al., 2020; Long et al., 2024; Erdem & Koçyiğit, 2025).

Concurrently, school climate, encompassing the workplace atmosphere, stakeholder interactions, principal leadership style, and collective organizational culture, significantly influences teacher performance (Triwiyanto et al., 2025; Gningue et al., 2022; Zamora-Rodríguez et al., 2025). Meta-analytic evidence indicates that school climate moderately predicts academic achievement, with open organizational climates demonstrating a comparatively greater impact on learning outcomes (Ozdogru et al., 2025; Sari & Kismiantini, 2023). Systematic reviews further reveal that instructional leadership significantly shapes collective teacher efficacy, with school climate functioning as an empirically validated mediating variable in this relationship (Çoğaltay & Boz, 2023; Akgöz et al., 2024).

Preliminary observations conducted at public junior high schools in Pasemah Air Keruh District corroborated these broader concerns at the local level: teachers showed low motivation, limited participation in professional training, and suboptimal engagement in learning evaluation and in the development of instructional materials. Work environment factors, including administrative support, collegial relationships, and professional learning communities, have been identified as important mechanisms for sustaining teacher motivation in resource-constrained settings (Wyatt, 2013; Harjanto et al., 2018; Allen et al., 2018).

A systematic bibliometric search of the Scopus database, employing the combined descriptors intrinsic motivation, school climate, and teacher performance across titles, abstracts, and keywords, retrieved only 18 indexed documents published between 2000 and 2025. Figure 1 illustrates the publication trend across this period, reflecting limited and inconsistent scholarly attention to this combined construct.

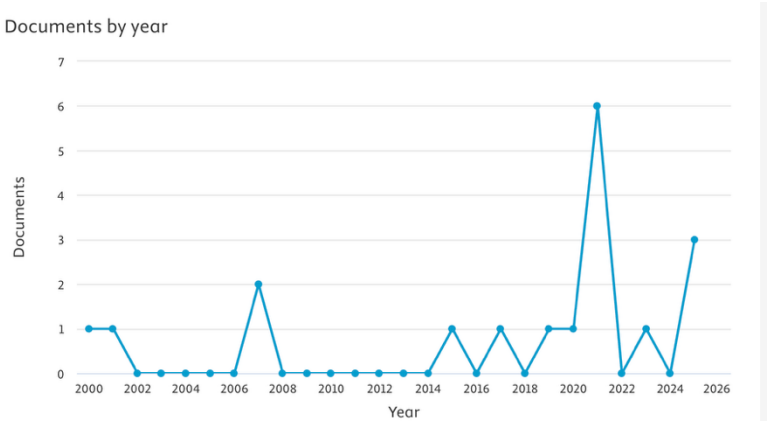

Figure 1: Publication Trend

Rigorous content analysis of all retrieved documents revealed three critical gaps in the existing literature. First, no study examined teacher instructional performance as the primary dependent variable; most addressed student outcomes in physical education contexts (Marcelino, 2025; Melguizo-Ibáñez et al., 2025) or student academic motivation in relation to school social climate (Manzano-Sánchez et al., 2021; Chimbi et al., 2025). Second, the geographic distribution of studies was markedly skewed toward European and East Asian settings, with no study conducted in Indonesia or any comparable rural developing-country context. Figure 2 further illustrates the concentration of authorship, contributing journals, and countries, confirming the complete absence of Indonesian scholarly representation.

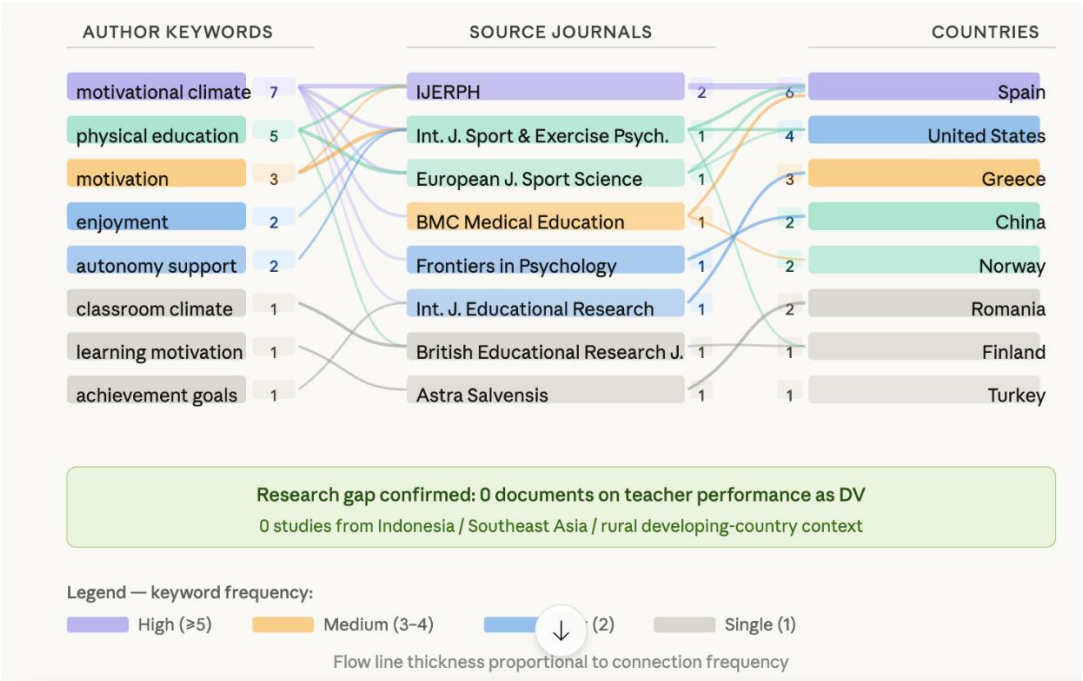

Figure 2. Three-Field Plot Visual Analysis of Author Keywords, Journals, and Countries

Third, notwithstanding the theoretical salience of Self-Determination Theory (Ryan & Deci, 2000) and organizational climate frameworks (Hoy & Miskel, 2002), the simultaneous integration of both constructs within a unified predictive model of teacher performance remains empirically untested in Indonesian educational settings (Gorozidis et al., 2021; Kotherja &

Hamzallari, 2022). Accordingly, this study is the first to examine intrinsic motivation and school climate concurrently as co-predictors of teacher instructional performance in a rural Indonesian context.

Grounded in this background, the present study addresses three research questions: (RQ1) How does intrinsic motivation influence teacher performance in learning? (RQ2) How does school climate influence teacher performance in learning? (RQ3) How do intrinsic motivation and school climate simultaneously influence teacher performance at public junior high schools in Pasemah Air Keruh District? The findings are expected to inform evidence-based strategies for improving educational quality by strengthening both internal and external determinants of teacher performance, thereby supporting the attainment of national educational goals.

2. METHODS

2.1. Research Design

This study used a quantitative, cross-sectional survey design and multiple regression analysis to examine the relationships among intrinsic motivation, school climate, and teacher performance in learning. The study was conducted in four public junior high schools in Pasemah Air Keruh District, Empat Lawang Regency, South Sumatra Province, from July to November 2025. The selection of this rural setting was intended to represent the Indonesian educational context characterized by limited resources and infrastructure, thereby providing meaningful insights for the development of educational policies (Creswell & Creswell, 2018).

The conceptual model is presented in Figure 3. The model positions intrinsic motivation (X_1) and school climate (X_2) as independent co-predictors of teacher performance in learning (Y). Three hypotheses are specified: H_1 proposes that intrinsic motivation directly influences teacher performance, grounded in Self-Determination Theory (Ryan & Deci, 2000); H_2 proposes that school climate directly influences teacher performance, drawing on organizational climate frameworks (Hoy & Miskel, 2002); and H_3 proposes that both predictors simultaneously and significantly predict teacher performance. The bidirectional association between X_1 and X_2 reflects their documented intercorrelation and does not imply a causal relationship.

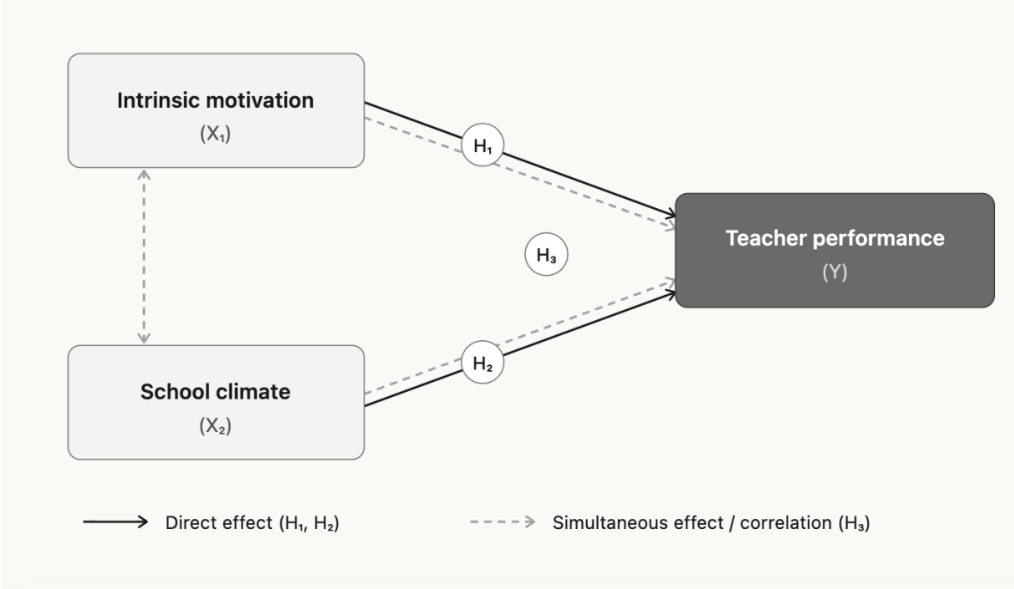

Figure 3. Conceptual Model

2.2. Population and Sample

The study population comprised all active teachers (N = 72) at four public junior high schools (SMP Negeri) in the target area. Given the relatively small population, a total sampling technique was used to ensure optimal representation and sufficient statistical power for multiple regression analysis with two predictor variables (Tabachnick & Fidell, 2019). The sample distribution by school is presented in Table 1. Inclusion criteria required that teachers have at least 1 year of teaching experience at their current school and participate voluntarily with informed consent. The final sample achieved a 100% response rate with complete data from 72 participants.

Table 1. Distribution of Research Samples by School

No	School name	Location	Number of Teachers	Percentage
1	Public Junior High School 1 Pasemah Air Keruh	Padang Bindu Village	31	43.1%
2	Public Junior High School 2 Pasemah Air Keruh	Kelinsar Water Village	17	23.6%
3	Public Junior High School 3 Pasemah Air Keruh	Talang Padang Village	11	15.3%
4	Public Junior High School 4 Pasemah Air Keruh	Muara Aman Village	13	18.1%
Total			72	100.0%

Source: Education UPTD, Pasemah Air Keruh District, 2025

2.3. Instrument

Data collection used a structured questionnaire with a five-point Likert scale (1 = strongly disagree to 5 = strongly agree). Three validated instruments were used to measure the study variables, with detailed specifications shown in Table 2.

Table 2. Research Instrument Specifications

Variables	Number of Items	Scale	Cronbach's Alpha	Reliability Category
Teacher Performance in Learning (Y)	6	Likert 1-5	0.938	Very high
Intrinsic Motivation (X_1)	8	Likert 1-5	0.960	Very high
School Climate (X_2)	6	Likert 1-5	0.866	High
Total Item	20			

Description: Reliability categories based on George & Mallery (2024)

Teacher performance in learning was measured using a six-item instrument developed based on Indonesian teacher competency standards, covering the dimensions of planning, implementation, and evaluation. Intrinsic motivation was assessed using an eight-item scale adapted from Self-Determination Theory, measuring the need for achievement, responsibility, development opportunities, and recognition. School climate was evaluated using a six-item instrument derived from the Organizational Climate Description Questionnaire, focusing on the supportive, collegial, and intimate dimensions as conceptualized by Hoy and Miskel (2002).

Prior to primary data collection, a pilot study was conducted with 15 teachers from similar schools to establish the validity and reliability of the instruments (Johanson & Brooks, 2010). Content validity was confirmed through expert judgment, while construct validity was assessed using Pearson product-moment correlation with a significance criterion of $p < 0.05$. All items demonstrated significant correlations ranging from 0.456 to 0.798. Internal consistency reliability was excellent for all instruments, with Cronbach's alpha coefficients of 0.938 for teacher performance, 0.960 for intrinsic motivation, and 0.866 for school climate, substantially exceeding the minimum threshold of 0.70.

The research protocol adhered to systematic ethical procedures, including institutional approval, informed consent, and confidentiality safeguards. Data collection was conducted through direct questionnaire distribution with a one-week turnaround time to ensure thoughtful responses. Research coordinators at each school facilitated the process. while maintaining respondent anonymity. The systematic procedures are illustrated in Figure 4.

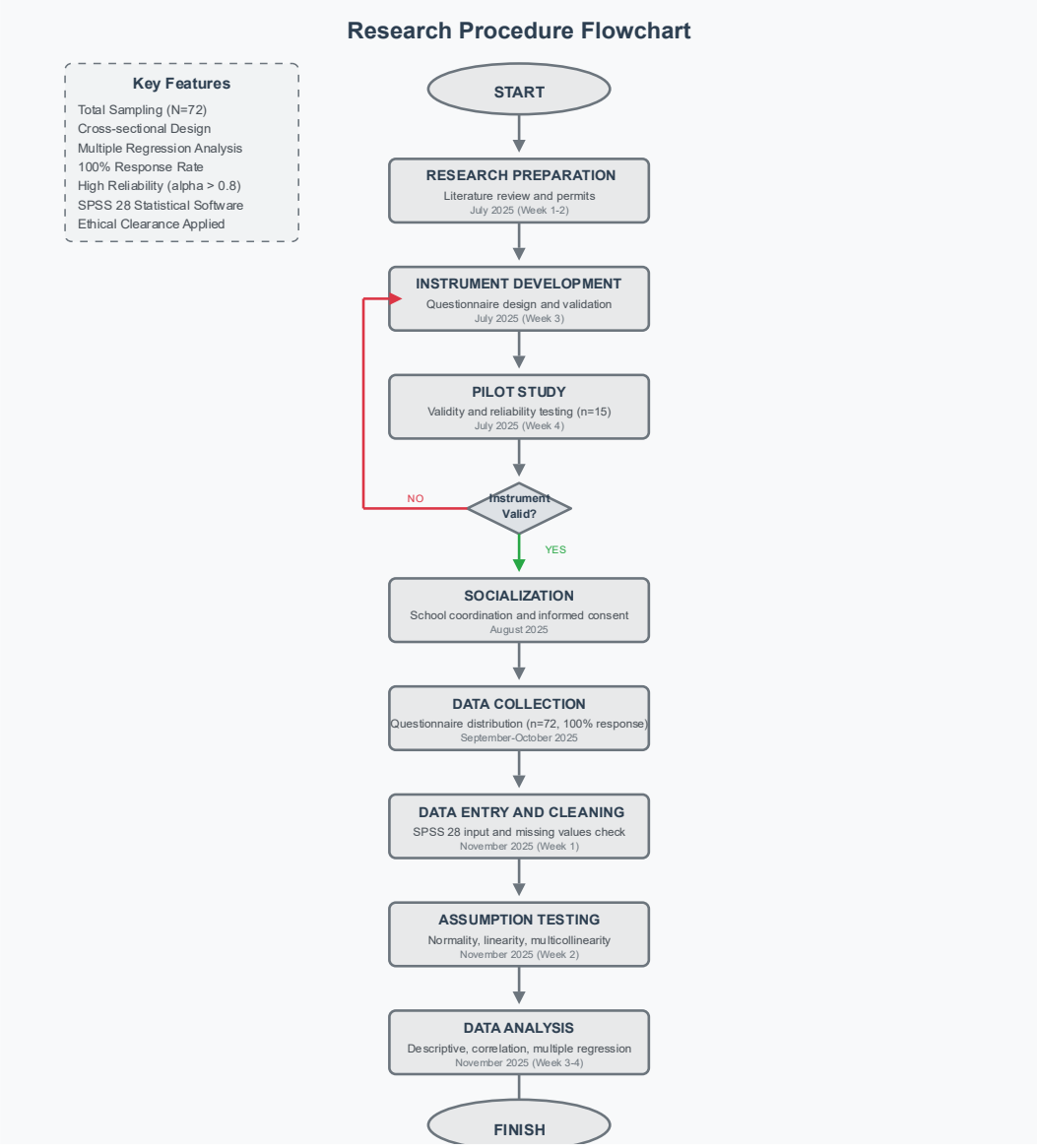

Figure 4. Research Procedure Flowchart

2.4. Statistical Analysis

Data analysis was performed using IBM SPSS Statistics Version 28, following a stepwise analysis approach detailed in Table 5. Preliminary analysis included descriptive statistics and assumption testing. Normality was assessed using the Kolmogorov-Smirnov test ($p < 0.05$), linearity using the ANOVA linearity test, multicollinearity using tolerance and VIF values, and homoscedasticity using the Glejser test (Hair et al., 2019).

The primary analysis consisted of Pearson correlations to test bivariate relationships, followed by simple linear regression to estimate individual predictor effects and multiple linear regression to estimate combined effects. Effect sizes were interpreted using Cohen's (1988) convention, with R^2 values of 0.02, 0.13, and 0.26 representing small, medium, and large effects, respectively. Statistical significance was set at $\alpha = 0.05$ for all analyses. The regression models

tested were Model 1 ($Y = a + b_1X_1 + e$) for the effect of intrinsic motivation, Model 2 ($Y = a + b_2X_2 + e$) for the effect of school climate, and Model 3 ($Y = a + b_1X_1 + b_2X_2 + e$) for the combined effect, where Y represents teacher performance, X_1 intrinsic motivation, X_2 school climate, and e the error term.

3. RESULTS AND DISCUSSION

3.1. Result

Preliminary analyses confirmed that all regression assumptions were satisfied. Kolmogorov-Smirnov tests indicated acceptable normality for school climate (p = .089) and teacher performance (p = .156); linearity was confirmed via ANOVA; VIF values for both predictors were below 2.5 (no multicollinearity); and the Glejser test confirmed homoscedasticity (p > .05). Descriptive statistics indicated adequate variability across all variables: intrinsic motivation (M = 104.25, SD = 15.82), school climate (M = 52.18, SD = 8.94), and teacher performance (M = 131.54, SD = 17.87).

Pearson product-moment correlation analysis revealed a very strong and consistent pattern of relationships between the study variables. The correlation between intrinsic motivation and teacher performance showed the highest value (r = 0.907, p < 0.001), indicating a very strong positive relationship. The relationship between school climate and teacher performance was also strong (r = 0.826, p < 0.001). In addition, there was a strong correlation between intrinsic motivation and school climate (r = 0.824, p < 0.001), indicating that the two predictor variables were related but did not cause serious multicollinearity problems.

Table 3. Pearson Correlation Matrix

Variables	1	2	3
1. Intrinsic Motivation	1,000		
2. School Climate	0.824**	1,000	
3. Teacher Performance	0.907**	0.826**	1,000

Pearson correlation analysis (Table 3) revealed that intrinsic motivation had the strongest association with teacher performance (r = .907, p < .001), followed by school climate (r = .826, p < .001). The inter-predictor correlation (r = .824) was substantial but did not produce problematic multicollinearity. Simple regression analysis showed that intrinsic motivation alone explained 82.3% of the variance in teacher performance (R^2 = .823, B = 1.228, β = .907, F = 324.933, p < .001), while school climate accounted for 68.1% (R^2 = .681, B = 2.131, β = .826, F = 149.765, p < .001).

Table 4. Results of Multiple Regression Analysis

Model Components	B	SE B	β	t	p	95% CI
Constant	-0.651	6.967	-	-0.094	0.926	[-14.49, 13.19]
Intrinsic Motivation	0.957	0.115	0.707	8.353	<0.001***	[0.729, 1.186]
School Climate	0.626	0.218	0.243	2.867	0.005**	[0.192, 1.060]

The multiple regression model (Table 4) demonstrated superior explanatory power, accounting for 84.2% of the variance in teacher performance (R^2 = .842, Adjusted R^2 = .837, F = 183.326, p < .001). Intrinsic motivation emerged as the dominant predictor (β = .707, t = 8.353, p < .001), while school climate remained a statistically significant secondary contributor (β = .243, t = 2.867, p = .005). Dominance analysis attributed 70.7% of the explained variance to intrinsic motivation and 24.3% to school climate. All effect sizes substantially exceeded Cohen's threshold for large effects (f^2 > .35): intrinsic motivation (f^2 = 4.64), school climate (f^2 = 2.13), and the combined model (f^2 = 5.33). Model diagnostics confirmed excellent fit (Durbin-Watson = 1.89; all Cook's D < 0.15).

The magnitude of the R^2 value obtained (.842) is notably high compared with most published studies on teacher performance. Several methodological and contextual factors provide a substantive explanation for this outcome. First, the application of total population sampling (N = 72, 100% response rate) eliminated sampling error, thereby maximizing the precision of parameter estimates and producing effect sizes that more accurately reflect true population relationships compared to random probability samples, where sampling variability typically attenuates observed correlations (Tabachnick & Fidell, 2019).

Second, the high degree of contextual homogeneity among all participants working within a single rural district, under comparable resource constraints, organizational norms, and administrative structures, substantially reduced unexplained residual variance. In maximally homogeneous samples, shared contextual factors that would otherwise constitute unexplained variance in heterogeneous multi-site studies are effectively held constant, systematically elevating R^2 (Cohen et al., 1988).

Third, the exceptionally high instrument reliability coefficients (intrinsic motivation: α = .960; school climate: α = .866; teacher performance: α = .938) minimized measurement error across all three variables. Classical test theory demonstrates that the proportion of variance explained in a regression model is directly bound by the reliability of both the predictor and criterion measures; high reliability mitigates the attenuation effect that routinely suppresses R^2 values in studies using less precise instruments. Fourth, the rural resource-constrained context renders external motivational mechanisms largely absent, amplifying the relative explanatory weight of intrinsic motivation; in such settings, internal psychological drivers theoretically become the primary differentiating factor in teacher performance, producing a stronger predictor–criterion relationship than would be expected in well-resourced urban settings with abundant external motivators (Ryan & Deci, 2000; Wyatt, 2013). Collectively, these factors

converge to produce a legitimately high R^2 that reflects genuine theoretical relationships operating within a statistically optimal research design, rather than a methodological artifact. Nonetheless, the possibility of upward bias due to common method variance from exclusive reliance on self-report measures cannot be fully ruled out and is acknowledged as a study limitation.

Table 5. Summary of Hypothesis Testing

Hypothesis	Statistical Test	Results	Decision	Strength of Evidence
H_1: Intrinsic motivation has a positive effect on teacher performance	$t = 18.026$, $p < 0.001$, $\beta = 0.907$	Significant	Supported	Very strong
H_2:School climate positively affects teacher performance.	$t = 12.238$, $p < 0.001$, $\beta = 0.826$	Significant	Supported	Strong
H_3: The combined effect of both predictors is significant	$F = 183.326$, $p < 0.001$, $R^2 = 0.842$	Significant	Supported	Very strong

3.2. DISCUSSION

This study confirms that intrinsic motivation and school climate are significant co-predictors of teacher instructional performance in rural Indonesian junior secondary schools. The combined model explained 84.2% of the variance ($R^2 = .842$), demonstrating exceptional explanatory power and affirming the theoretical framework integrating Self-Determination Theory (Ryan & Deci, 2000) with organizational climate theory (Hoy & Miskel, 2002). While an R^2 of this magnitude is relatively uncommon in social-behavioral research where values between .10 and .50 are more typical (Cohen, 1988), it is not without precedent in highly homogeneous population-level studies.

Studies employing total-population samples in contextually uniform settings consistently yielded effect sizes substantially exceeding those from probability-sampled multi-site surveys. Intrinsic motivation alone could account for 36–54% of the variance in academic performance when measurement quality is high, a pattern that plausibly generalizes to professional performance contexts, where intrinsic motivation is a more central and theoretically proximal determinant (Long et al., 2024; Zou et al., 2024). The present study's results are thus interpretable as reflecting a genuine convergence of favorable methodological conditions: total population sampling (eliminating sampling error), contextually homogeneous sample composition (reducing residual variance attributable to unmeasured site-level factors), and instruments with near-ceiling reliability coefficients (minimizing attenuation bias). Taken together, these conditions systematically elevate observed R^2 values toward their theoretical maximum while remaining methodologically defensible. Cross-validation with independent samples from comparable rural Indonesian or Southeast Asian settings is nevertheless warranted to establish the replicability of these effect sizes.

Intrinsic motivation emerged as the dominant predictor (β = .707), accounting for 70.7% of the explained variance, substantially exceeding effect sizes reported in most international studies. This aligns with Indonesian research demonstrating that autonomous motivation positively predicts classroom management and instructional clarity (Irnidayanti et al., 2020; Hanim et al., 2020). The magnitude of this effect suggests that internal psychological drivers are particularly salient in resource-constrained settings with limited external motivators. Evidence further shows that professional learning communities enhance intrinsic motivation through collaboration and shared vision (Long et al., 2024), while administrative support and interpersonal relationships sustain this motivation over time (Bukhari et al., 2023).

School climate demonstrated a significant positive effect on teacher performance (r = .826). However, its beta coefficient decreased markedly in the multiple model (from β = .826 to β = .243), suggesting that a favorable climate primarily enhances performance by influencing intrinsic motivation. This is consistent with path analysis studies documenting the direct and indirect effects of organizational climate through the motivational pathway (Widyaningsih et al., 2021; Ridwan et al., 2024), and with research confirming that organizational culture and self-efficacy influence performance, with work motivation as a key mediator (Huda et al., 2024). Cross-cultural evidence from TALIS 2018 further highlights the context-specificity of climate perceptions across national settings (Zhao & Jin, 2023).

The consistency of findings across four schools of varying size supports generalizability to comparable rural Indonesian contexts (Wyatt, 2013; Bukhari et al., 2023). These results challenge policies relying primarily on external incentives, given evidence that teacher certification's motivational effects are limited without accompanying autonomy support (Nawas et al., 2025; Kusumawardhani, 2017). School leaders should foster autonomy, recognition of competence, and collegial cultures. Systematic reviews confirm that whole-school collaborative initiatives improve knowledge-exchange cultures (Giri et al., 2025), while combined PBIS and SEL interventions demonstrate high effectiveness in improving school climate and teacher outcomes (Charlton et al., 2021).

Several limitations warrant acknowledgment. The cross-sectional design precludes causal inference, and the rural South Sumatra context limits the generalizability to other geographic contexts. Exclusive reliance on self-report measures introduces the risk of common method variance (CMV), which may partially inflate observed correlations and R^2 values relative to their true population values. Although procedural remedies were employed, including temporal separation of predictor and criterion item blocks, guaranteed anonymity, and reverse-scored items, CMV cannot be fully ruled out. Readers are therefore advised to interpret the R^2 = .842 finding in conjunction with the contextual and methodological explanations provided above, recognizing that the value likely reflects a combination of substantive theoretical relationships and optimized study conditions rather than being an

artifact of inflation alone. (Rahmah et al, 2022. Future research should employ mixed-methods designs, longitudinal tracking, and multilevel structural equation modeling to test mediation pathways (Leal-Soto et al., 2023; Kouhsari, 2023; Williams et al., 2022) and cross-cultural comparisons with other Southeast Asian systems (Gill & Berezina, 2020; Palacios Mena & Jiménez, 2024) to establish the universality of these findings further.

4. CONCLUSION

This study establishes three fundamental findings with substantial theoretical and practical implications. First, intrinsic motivation shows a strong predictive relationship with teacher performance ($r = 0.907$, $\beta = 0.707$, $p < 0.001$), substantially exceeding the effect sizes reported in most international literature. This finding suggests that internal psychological drivers, including personal satisfaction, professional responsibility, and competency development, are key determinants of instructional quality, particularly in resource-constrained environments with limited external motivators.

Second, school climate demonstrated a significant positive effect on teacher performance ($r = 0.826$, $\beta = 0.243$, $p = 0.005$), confirming the importance of organizational factors in supporting teacher effectiveness. The dimensions of supportive leadership, collegial relationships, and workplace intimacy collectively create a conducive work environment that facilitates optimal teaching performance. However, the diminished effect of school climate in the combined model suggests a possible mediation pathway through intrinsic motivation.

Third, the integrated model explained 84.2% of the variance in teacher performance ($R^2 = 0.842$, $F = 183.326$, $p < 0.001$), representing one of the highest levels of explanatory power documented in teacher performance research. Dominance analysis revealed that intrinsic motivation accounted for 70.7% of the explained variance, compared with school climate's 24.3%, indicating the primacy of internal psychological factors over environmental conditions.

Several limitations limit the generalizability and interpretative scope of these findings. The cross-sectional design precludes causal inference, necessitating longitudinal studies to establish temporal precedence and examine motivation-performance dynamics. The geographic specificity of rural South Sumatra limits generalizability, necessitating replication across Indonesian educational contexts and international comparative studies.

Exclusive reliance on self-report measures introduces the potential for method-specific bias, although large effect sizes and consistent patterns across indicators suggest robust underlying relationships. Future research should combine objective performance measures, classroom observations, and student outcome data to triangulate findings. Methodological extensions should include structural equation modeling to test mediation pathways, multilevel analyses to separate individual and organizational effects, and intervention studies to evaluate motivational enhancement programs. Cross-cultural research that tests the universality versus

cultural specificity of this motivation-performance relationship will inform the development of global education policy.

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