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The Effect of Collegial Supervision and School Organizational Culture on Teacher Performance

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ABSTRACT

This study examines the impact of collegial supervision and school organizational culture on the performance of elementary school teachers in Indonesia, drawing on the growing recognition of collaborative professional development. Using a quantitative survey of 300 teachers from 51 public schools in Purwakarta Regency, data were analyzed through Structural Equation Modeling. The measurement instruments showed strong validity and reliability. The results indicate that collegial supervision is implemented at a good level and has a significant effect on teacher performance, while school organizational culture also contributes significantly, though to a lesser extent. Together, both variables explain 8.7 percent of the variance in teacher performance and demonstrate predictive relevance. The study concludes that collegial supervision plays a meaningful role in enhancing teacher performance when supported by a positive and well-established organizational culture, offering important implications for strengthening teacher development practices in Indonesian elementary schools.

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1. INTRODUCTION

The shift from hierarchical models of educational supervision toward humanistic and collaborative approaches reflects a global recognition that top-down evaluation does not meaningfully enhance teacher professionalism. Enright and Wieczorek (2021) explain that traditional supervision grounded in authority and judgment has limited capacity to support teacher growth, while collegial supervision offers an alternative built on partnership, shared learning, and continuous development. This model treats teachers as capable professionals who improve through collaborative interaction, a process supported by Hoque et al. (2020) who emphasize that peer coaching relies on reciprocal, equitable relationships that reduce power imbalances and foster collegiality.

These theoretical developments intersect with urgent national challenges in Indonesia. Results of the 2019 Teacher Competency Test in Purwakarta Regency, with an average score of 55.19 and nearly 45 percent of teachers below the 55.25 threshold, indicate a substantial competency gap that threatens instructional quality and student learning outcomes. This situation highlights the need for supervision models that are more effective, contextually relevant, and sustainable. Structural constraints intensify this challenge. With a supervisor-teacher ratio of approximately one to one hundred fifty, far above the recommended one to fifty, conventional supervision is difficult to implement. These conditions strengthen the argument for distributed professional development through peer collaboration, supported by findings that structured collegial interactions promote teacher learning and instructional improvement (Wiyono et al., 2021).

Collegial supervision itself is understood as a systematic process in which teachers observe one another, exchange feedback, and reflect on instructional practice. Hashim et al. (2020) note that peer observation supported by constructive feedback offers a safer and more supportive environment than traditional models. Evidence from international studies further demonstrates its benefits. Anderson and Pounder (2019)

report that coaching programs yield meaningful gains in instructional practice, while Menda and Dwikurnaningsih (2024) show that peer coaching enhances self-efficacy and teaching skills, with participants outperforming those who received only traditional supervision.

However, the effectiveness of collegial supervision depends heavily on school organizational culture. Schein and Schein (2017) describe culture as shared assumptions and values shaping organizational behavior. Plaku and Leka (2025) show that principals strongly influence culture by nurturing collaboration and collegial relations. Schools characterized by trust, openness, and learning orientation are more successful in implementing peer-based professional development. Hargreaves and Fullan (2020) provide similar evidence, and studies in Indonesia confirm the relevance of cultural mechanisms. Widodo et al. (2024) find that principal leadership affects teacher performance through mediating effects of organizational culture and governance.

Despite its promise, collegial supervision faces cultural barriers in Indonesia. Fitria and Puspita (2021) observe that harmony-oriented and conflict-avoidant norms limit teachers' willingness to engage in open critique and transparent professional dialogue. Research by Nehez and Blossing (2022) also shows that organizational culture mediates the relationship between leadership and change, and that transformational leadership fosters adaptive environments conducive to collaboration. These findings suggest that strong organizational culture is as essential as the supervision structure.

Several research gaps remain. Much Indonesian research on collegial supervision relies on regression methods that cannot adequately address latent constructs, measurement error, or mediating processes. Wiyono et al. (2021) employ models assuming linear relationships and negligible measurement error, while Demir and Uşak (2025) highlight the advantages of PLS-SEM for evaluating validity, reliability, and structural linkages simultaneously. Furthermore, collegial supervision models developed in Western contexts have not been psychometrically validated in Indonesia, an issue highlighted by Hollins (2015) who argues that educational models require cultural validation. Empirical studies in Southeast Asia also remain limited. UNESCO Institute for Statistics (2024) notes that research on structured collegial supervision is still scarce in the region. Although studies such as Menda and Dwikurnaningsih (2024) illustrate growing methodological rigor, collegial supervision remains underexplored and existing findings show inconsistent effect sizes. These inconsistencies likely reflect variations in cultural context, implementation quality, and organizational conditions. More nuanced research is therefore needed to identify the conditions under which collegial supervision produces optimal outcomes in Indonesian schools.

Theoretical Framework and Hypotheses

This research is grounded in three interrelated theoretical frameworks that shape the conceptual model and research hypotheses. First, social learning theory (Bandura, 1977) posits that learning occurs through observation, modeling, and social interaction, providing the foundational justification for collegial supervision as an intervention. In collegial supervision contexts, teachers simultaneously function as models demonstrating teaching practices and as learners observing colleagues' approaches, creating reciprocal learning opportunities. Second, Schein's organizational culture theory (Schein & Schein, 2021) establishes that shared assumptions, values, and norms fundamentally shape individual and collective behavior within organizational contexts. From this theoretical perspective, organizational culture operates as a contextual factor that either facilitates or constrains the effectiveness of collegial supervision through establishing norms, expectations, and psychological safety. Third, communities of practice frameworks (Wenger, 1998) illuminate how collegial supervision creates shared spaces where teachers develop common understanding, negotiate shared meanings about effective teaching, and develop joint repertoires of practices refined through collaborative reflection.

These theoretical frameworks integrate into a conceptual model proposing that: (Hypothesis 1) Collegial supervision exerts a direct positive effect on teacher performance, with teachers engaged in structured peer observation, feedback, and reflection developing enhanced instructional practices; and (Hypothesis 2) School organizational culture exerts a direct positive effect on teacher performance, with schools characterized by collaborative norms, trust, and learning orientation enabling teachers to implement more effective practices. The model further proposes that organizational culture functions as an enabling condition shaping the conditions under which collegial supervision produces optimal effects, with positive cultures facilitating implementation while negative cultures constrain effectiveness.

Therefore, this study aims to address these critical gaps by analyzing the direct and combined effects of collegial supervision and school organizational culture on teacher performance in public elementary schools using the SEM-PLS approach. Specifically, the research pursues four objectives: (1) to validate collegial supervision and organizational culture measurement instruments in Indonesian elementary school contexts to establish measurement reliability and validity; (2) to examine direct effects of collegial supervision and school organizational culture on teacher performance; (3) to assess the relative importance and effect sizes of each predictor variable; and (4) to provide evidence-based recommendations for supervision policy and practice

grounded in Indonesian educational realities and cultural contexts. The study's findings will contribute to filling critical gaps in both international and Indonesian literature regarding how collegial supervision operates within specific cultural and organizational contexts.

2. METHOD

This study used a quantitative approach with a Structural Equation Modeling–Partial Least Squares design to examine the effects of collegial supervision and school organizational culture on teacher performance. An explanatory survey method was employed to investigate causal relationships among variables. The SEM-PLS approach was selected for its ability to handle complex models with multiple indicators, its robustness to non-normal data, and its capacity to simultaneously evaluate measurement and structural models. Hair et al. (2022) recommend PLS-SEM for prediction-oriented studies and for contexts where data normality cannot be assumed.

The population consisted of 2,658 public elementary school teachers in Purwakarta Regency across 381 schools in 17 sub-districts. Sampling used proportional cluster stratified random sampling based on urban, central, and border area classifications. Using the Yamane formula with a five percent error level, the minimum required sample was 286 teachers; adding ten percent for potential non-response produced a final sample of 300 teachers from 51 schools. This exceeds the minimum recommended PLS-SEM sample size, which according to Hair et al. (2022) should be at least ten times the largest number of structural paths directed at any construct.

Data were collected using structured questionnaires with four-point Likert scales comprising three validated instruments. The Collegial Supervision Instrument, adapted from Hashim et al. (2020) and Hoque et al. (2020), consisted of nine indicators representing professional collaboration, structured observation, constructive feedback, shared reflection, collaborative planning, collaborative problem solving, best practice sharing, peer mentoring, and collaborative evaluation. The School Organizational Culture Instrument, adapted from Schein and Schein (2017) and Plaku and Leka (2025), also contained nine indicators capturing collaborative orientation, inter-teacher trust, open communication, leadership support, innovation, flexibility, result orientation, teamwork, and learning culture. The Teacher Performance Instrument was developed from Indonesian teacher competency standards and International Society for Technology in Education (2020) standards and contained nine indicators measuring lesson planning, instructional strategy use, classroom management, media use, authentic assessment, instructional reflection, differentiated learning, technology integration, and continuous professional development. Instrument validation was conducted prior to data collection. Expert judgment from three professors ensured content validity, clarity, and cultural appropriateness. A pilot test with 30 teachers assessed reliability through Cronbach's Alpha and identified items requiring refinement. Main data collection occurred from March to May 2024 through direct questionnaire distribution in 51 schools, facilitated by trained research assistants who clarified items, verified completion, and ensured adherence to data collection protocols.

Several procedures minimized response bias and encouraged honest participation. Respondents were assured of full confidentiality, informed that no answers were right or wrong, reminded that participation was voluntary, and allowed to withdraw at any time. Data collection occurred during school hours in neutral locations, and all participants provided informed consent after receiving explanations regarding research objectives and data use. Data analysis followed the two-stage procedure recommended by Hair et al. (2022) and Demir and Uşak (2025). The first stage evaluated the measurement model. Convergent validity was assessed using outer loadings greater than 0.7 and Average Variance Extracted values above 0.5. Discriminant validity was examined using the Fornell–Larcker criterion, cross-loadings, and Heterotrait–Monotrait ratios below 0.9. Reliability was assessed through Cronbach's Alpha, Composite Reliability, and rho_A, each requiring values above 0.7. Variance Inflation Factors below 5 confirmed the absence of multicollinearity.

The second stage evaluated the structural model. Path coefficients were tested using bootstrapping with 5,000 subsamples at a significance level of 0.05. R-squared values assessed explained variance in teacher performance, and effect sizes (f-squared) followed Cohen's (1988) thresholds of small, medium, and large. Predictive relevance was evaluated using Q-squared values obtained through blindfolding, and model fit was assessed using SRMR values below 0.08 and NFI values above 0.80. Together, these criteria provided comprehensive evidence of measurement quality, structural relationships, predictive accuracy, and overall model performance. Figure 1 depicts the conceptual research model with collegial supervision (nine indicators), school organizational culture (nine indicators), and teacher performance (nine indicators) with directional paths from both predictors to the outcome variable.

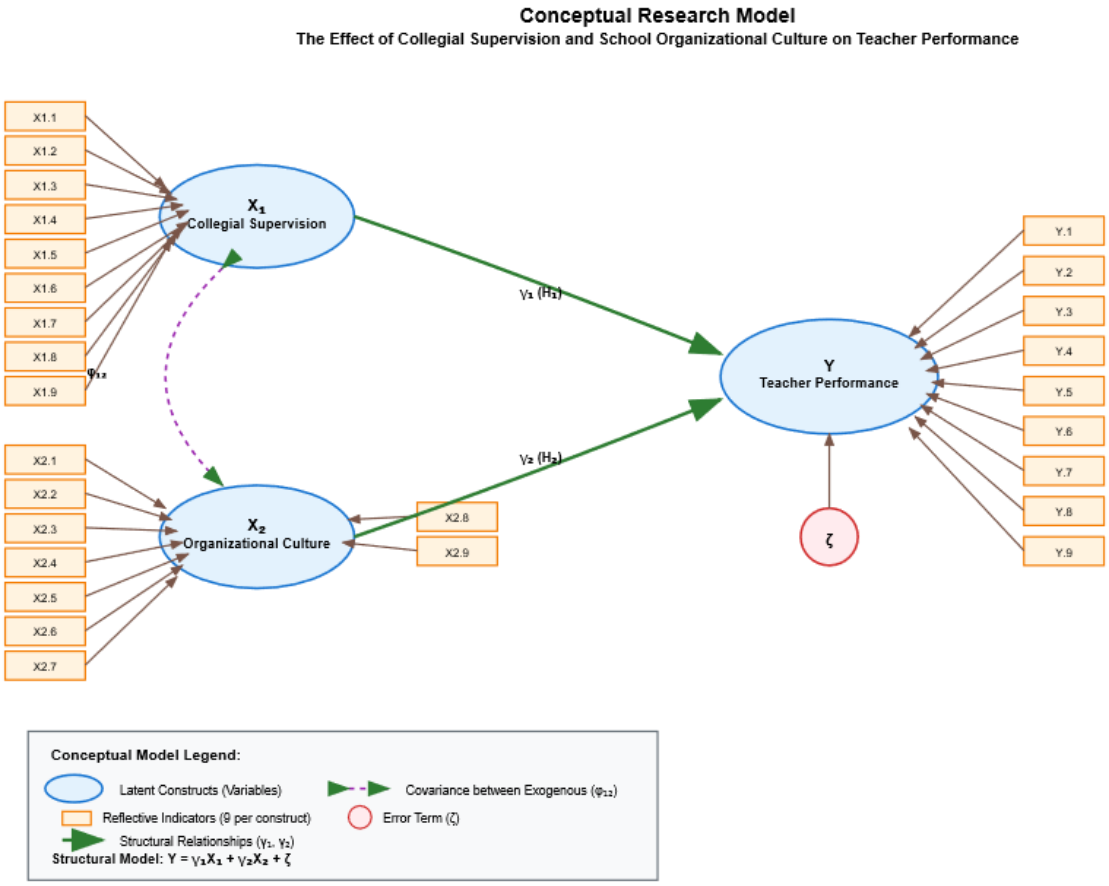

Figure 1. Conceptual Research Model

Conceptual Research Model showing X_1 (Collegial Supervision with 9 indicators: CS.1-CS.9), X_2 (School Organizational Culture with 9 indicators: OC.1-OC.9), and Y (Teacher Performance with 9 indicators: TP.1-TP.9) with directional paths from X_1 and X_2 to Y.

Figure 2. Research Procedure Flowchart:

3. RESULTS AND DISCUSSION

3.1. Results

Research respondents consisted of 300 public elementary school teachers in Purwakarta Regency with geographic distribution reflecting the sampling strategy: urban areas 33.0% (n = 99), central areas 39.0% (n = 117), and border areas 28.0% (n = 84). Demographic characteristics of respondents demonstrated expected patterns for Indonesian elementary schools: majority female 74.7%, primarily in the 31-45 years age group 52.7%, held undergraduate degrees (S1) as required by recent policy mandates 86.0%, and possessed substantial teaching experience with 11-20 years 45.3%. These demographic patterns ensure that respondents possessed adequate experience and professional qualifications to assess supervision and organizational culture dimensions accurately.

Table 1. Respondent Demographic Characteristics (n=300)

Demographic Variable	**Category**	**Frequency**	**Percentage**
Location	Urban	99	33.0%
	Central	117	39.0%
	Border	84	28.0%
Gender	Female	224	74.7%
	Male	76	25.3%
Age	26-30 years	41	13.7%
	31-40 years	87	29.0%
	41-45 years	81	27.0%
	46-50 years	63	21.0%
	51-55 years	28	9.3%
Educational Level	Undergraduate (S1)	258	86.0%
	Master's (S2)	42	14.0%
Teaching Experience	6-10 years	64	21.3%
	11-15 years	82	27.3%
	16-20 years	74	24.7%
	21+ years	80	26.7%

Descriptive analysis of collegial supervision implementation levels revealed overall good implementation with a mean of 3.17 on the four-point scale and a percentage score of 79.25%, indicating that teachers generally experience and engage in collegial supervision practices at acceptable levels. However, analysis of specific dimensions revealed important variation: professional collaboration showed the highest implementation with a score of 84.67%, indicating that teachers actively engage in joint professional activities and collaborative problem-solving. In contrast, structured classroom observation showed markedly lower implementation at 72.55%, suggesting this component faces particular implementation challenges. This discrepancy reflects theoretical propositions that teachers may be more comfortable with general collaboration while feeling vulnerable to structured peer observation, particularly in contexts emphasizing harmony and face-saving.

Table 2. Descriptive Statistics: Collegial Supervision, Organizational Culture, and Teacher Performance

Variable & Dimension	**Mean**	**SD**	**Score %**	**Category**
Collegial Supervision (Overall)	3.17	0.51	79.25	Good
CS.1: Professional Collaboration	3.39	0.45	84.67	Very Good
CS.2: Structured Classroom Observation	2.90	0.58	72.55	Good
CS.3: Constructive Feedback	3.18	0.52	79.48	Good
CS.4: Shared Reflection	3.15	0.49	78.75	Good
CS.5: Collaborative Lesson Planning	3.21	0.50	80.28	Good
CS.6: Collaborative Problem-solving	3.19	0.51	79.73	Good
CS.7: Best Practice Sharing	3.13	0.53	78.28	Good
CS.8: Peer Mentoring	3.12	0.54	78.03	Good
CS.9: Collaborative Evaluation	3.16	0.50	78.98	Good
School Organizational Culture (Overall)	3.07	0.48	76.84	Good
OC.1: Collaborative Orientation	3.29	0.44	82.15	Very Good
OC.2: Inter-teacher Trust	2.94	0.56	73.42	Good
OC.3: Open Communication	3.08	0.49	77.03	Good
OC.4: Leadership Support	3.09	0.47	77.28	Good
OC.5: Learning Innovation	3.06	0.48	76.53	Good
OC.6: Organizational Flexibility	3.04	0.49	76.03	Good
OC.7: Result Orientation	3.08	0.47	77.03	Good
OC.8: Teamwork Practices	3.07	0.48	76.73	Good
OC.9: Learning Culture	3.08	0.49	77.03	Good

Variable & Dimension	Mean	SD	Score %	Category
Teacher Performance (Overall)	3.53	0.36	87.84	Very Good
TP.1: Effective Lesson Planning	3.57	0.34	89.24	Very Good
TP.2: Learning Strategy Implementation	3.54	0.35	88.48	Very Good
TP.3: Classroom Management	3.53	0.36	88.24	Very Good
TP.4: Learning Media Use	3.52	0.36	87.99	Very Good
TP.5: Authentic Assessment	3.47	0.37	86.74	Very Good
TP.6: Learning Reflection	3.53	0.35	88.24	Very Good
TP.7: Differentiated Learning	3.53	0.36	88.24	Very Good
TP.8: Learning Technology Integration	3.52	0.35	87.99	Very Good
TP.9: Professional Development Engagement	3.54	0.35	88.48	Very Good

School organizational culture demonstrated a mean of 3.07 and a percentage score of 76.84%, suggesting moderately positive school cultures supportive of collegial practices. Dimensional analysis revealed that collaborative orientation showed the highest score at 82.15%, indicating that teachers perceive schools as valuing collaborative approaches and collective problem-solving. However, inter-teacher trust showed notably lower implementation at 73.42%, a finding of substantial importance because trust serves as the relational foundation enabling other collegial practices. This lower trust score suggests potential vulnerabilities in the relational infrastructure necessary for sustained, effective peer learning and supervision.

Teacher performance demonstrated very good overall implementation with a mean of 3.53 and a percentage score of 87.84%, indicating that surveyed teachers generally implement professional teaching practices at high levels. Lesson planning showed the highest implementation at 89.24%, reflecting increasing emphasis on lesson planning requirements in Indonesian policy and teacher preparation. Authentic assessment implementation showed the lowest score at 86.74%, suggesting possible continued development is needed in implementing performance-based and authentic assessment approaches.

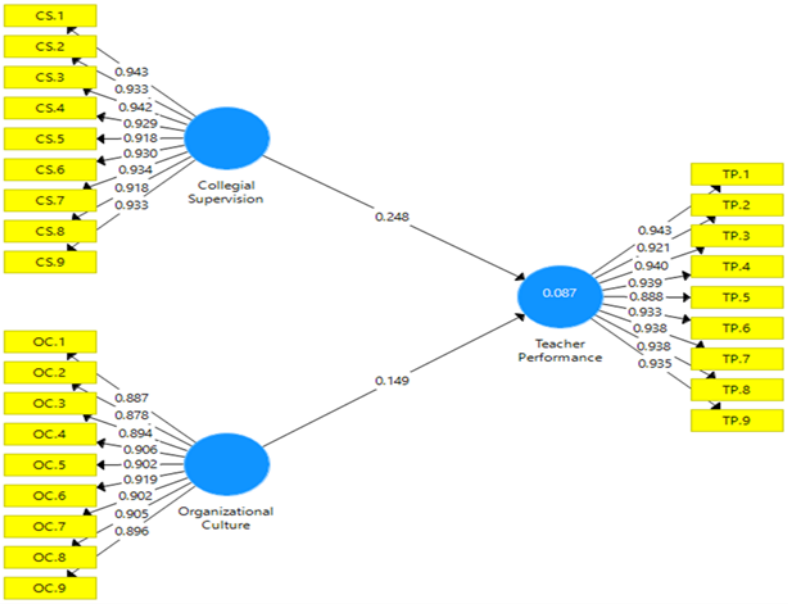

Figure 2. SEM-PLS Outer Model

Measurement model evaluation demonstrated that all constructs met established validity and reliability criteria, providing strong assurance regarding instrument quality in Indonesian contexts. Convergent validity assessment through outer loadings showed that all indicators exceeded the 0.7 threshold, indicating strong relationships between observed indicators and their intended latent constructs. Loading values ranged from 0.878 to 0.943 overall: for collegial supervision, loadings ranged from 0.918 to 0.943; for school organizational culture, loadings ranged from 0.878 to 0.919; for teacher performance, loadings ranged from 0.888 to 0.943. Average Variance Extracted (AVE) values—indicating the proportion of variance in indicators explained by their constructs—for all constructs exceeded the 0.5 threshold. Collegial supervision showed an AVE of 0.867, school organizational culture showed an AVE of 0.808, and teacher performance showed an AVE of 0.866. These results confirm strong convergent validity consistent with the criteria established by Hair et al. (2022).

Table 3. Measurement Model Results: Convergent and Discriminant Validity

Construct	Outer Loading Range	AVE	Cronbach's α	Composite Reliability	Rho_A
Collegial Supervision	0.918–0.943	0.867	0.981	0.983	0.982
School Organizational Culture	0.878–0.919	0.808	0.970	0.974	0.971
Teacher Performance	0.888–0.943	0.866	0.981	0.983	0.982

Discriminant Validity Assessment:
Fornell-Larcker Criterion:

- Collegial Supervision: √AVE = 0.931
- School Organizational Culture: √AVE = 0.899
- Teacher Performance: √AVE = 0.931

All square roots of AVE exceeded inter-construct correlations (CS-OC: 0.722; CS-TP: 0.268; OC-TP: 0.239), confirming discriminant validity.

HTMT Ratios:

- Collegial Supervision ↔ School Organizational Culture: 0.722 (<0.9) ✓
- Collegial Supervision ↔ Teacher Performance: 0.268 (<0.9) ✓
- School Organizational Culture ↔ Teacher Performance: 0.239 (<0.9) ✓

All HTMT ratios below 0.9 threshold, confirming discriminant validity.

Collinearity Assessment (VIF):

- Collegial Supervision: 1.882 (<5) ✓
- School Organizational Culture: 1.882 (<5) ✓

Discriminant validity was confirmed through three independent criteria, providing robust evidence that constructs measure distinct phenomena. The Fornell-Larcker criterion showed that the square root of AVE for each construct exceeded its correlations with other constructs: collegial supervision square root AVE was 0.931, school organizational culture square root AVE was 0.899, and teacher performance square root AVE was 0.931. HTMT values were all below the critical threshold of 0.9: the correlation between collegial supervision and school organizational culture was 0.722, between collegial supervision and teacher performance was 0.268, and between school organizational culture and teacher performance was 0.239. These HTMT ratios below 0.9 provide strong evidence of discriminant validity. Cross-loading analysis (detailed results available upon request) confirmed that all indicators loaded most strongly on their intended constructs.

Reliability assessment demonstrated excellent psychometric properties. Cronbach's Alpha values were exceptionally high: 0.981 for collegial supervision, 0.970 for school organizational culture, and 0.981 for teacher performance, all substantially exceeding the 0.7 threshold. Composite Reliability values were similarly excellent: 0.983, 0.974, and 0.983, respectively. Rho_A values were 0.982, 0.971, and 0.982. These high reliability coefficients across multiple measures provide strong assurance that instruments consistently measure intended constructs. Collinearity assessment showed both predictor variables had a VIF of 1.882, well below the threshold of 5, indicating no multicollinearity concerns that might affect structural model estimation.

Structural Model Results

Structural model evaluation revealed that both collegial supervision and school organizational culture exerted statistically significant positive effects on teacher performance, though with notable differences in effect magnitudes. Collegial supervision had a positive and significant effect on teacher performance with a path coefficient of 0.248 (representing an approximately 0.25 unit increase in teacher performance for each unit increase in collegial supervision on the standardized scale), a standard error of 0.054, a t-statistic of 4.598, and a p-value less than 0.001 ($p < 0.001$). School organizational culture also had a positive and significant effect with a path coefficient of 0.149, a standard error of 0.047, a t-statistic of 3.191, and a p-value of 0.002 ($p = 0.002$). Both t-statistics substantially exceeded the critical value of 1.96, confirming statistical significance at an alpha level of 0.05 and demonstrating that these effects represent genuine relationships rather than random variation.

Table 4. Structural Model Results: Direct Effects of Collegial Supervision and School Organizational Culture on Teacher Performance

Hypothesis	Path	Path Coefficient	Standard Error	T-Statistic	P-Value	Significance	Effect Interpretation
H1	Collegial Supervision → Teacher Performance	0.248	0.054	4.598	<0.001	*** (p<0.001)	Positive & Significant
H2	School Organizational Culture → Teacher Performance	0.149	0.047	3.191	0.002	** (p<0.01)	Positive & Significant

Model Fit and Explanatory Power:

Index	Value	Criterion	Status
R-squared (R^2)	0.087	Explanatory power	Explains 8.7% variance
Adjusted R^2	0.081	Adjusted explanatory power	Accounts for model complexity
Q-squared (Q^2)	0.073	Predictive relevance	Positive = satisfactory
f-squared (Collegial Supervision)	0.067	Effect size	Small effect
f-squared (Organizational Culture)	0.024	Effect size	Very small effect
SRMR	0.068	Model fit	<0.08 criterion met ✓
NFI	0.892	Model fit	>0.80 criterion met ✓

The coefficient of determination (R-squared) for teacher performance was 0.087, indicating that collegial supervision and school organizational culture jointly explain 8.7 percent of the variance in teacher performance, with the remaining 91.3 percent explained by factors beyond the scope of this model. Adjusted R-squared was 0.081. According to Cohen's (1988) guidelines for effect size interpretation in social science research, this represents a small effect in terms of explained variance. Effect size analysis using f-squared provided insight into the relative importance of each predictor: collegial supervision had an f-squared of 0.067, classified as a small effect according to Cohen's criteria, while school organizational culture had an f-squared of 0.024, classified as a very small effect, using Cohen's guidelines where f-squared of 0.02 indicates small, 0.15 indicates medium, and 0.35 indicates large effects.

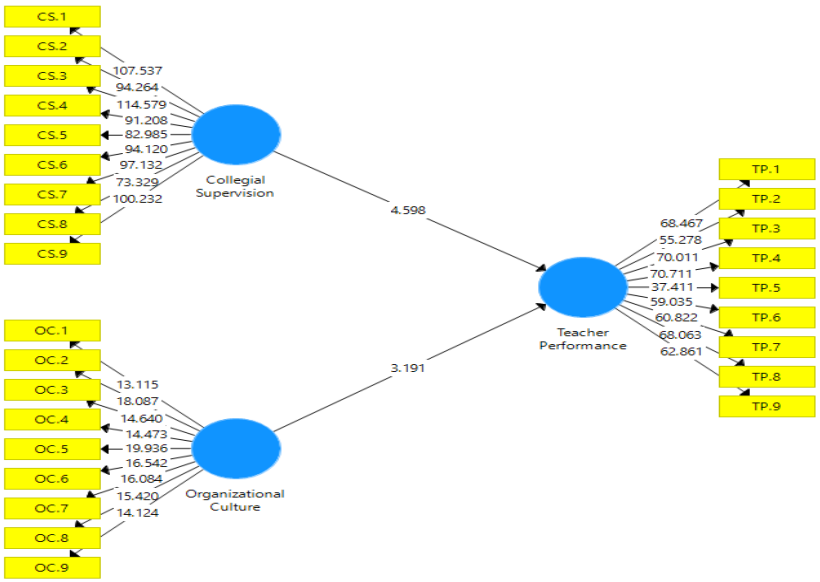

Figure 3. SEM-PLS Inner Model
SEM-PLS Inner Model showing structural model with path coefficients, t-statistics, and R-square values

Predictive relevance assessment using Q-squared showed a value of 0.073 ($Q^2 = 0.073$), confirming the model has satisfactory predictive relevance according to the Stone-Geisser criterion, where positive values indicate the model's predictions exceed baseline models. Model fit assessment demonstrated adequate fit: SRMR of 0.068 was below the critical threshold of 0.08, and NFI of 0.892 exceeded the threshold of 0.80, indicating good model fit. These results align with the fit criteria recommended by Hair et al. (2022) for PLS-SEM analysis and provide assurance that the estimated model adequately represents the sample data.

3.2. Discussion

Collegial Supervision Effects on Teacher Performance: Theory and Evidence

This study confirms collegial supervision has a statistically significant positive effect on teacher performance with a path coefficient of 0.248, t-statistic of 4.598, and p-value less than 0.001, supporting similar findings in international research demonstrating the effectiveness of peer-based professional development. Anderson & Pounder (2019) found that teacher coaching programs produced meaningful effect sizes in improving instructional quality. Menda & Dwikurnaningsih (2024) demonstrated that peer coaching meaningfully impacts teacher self-efficacy and instructional skills in teacher education contexts. The current study's findings contribute substantially to this evidence base by empirically demonstrating that collegial supervision effects are observable and significant in Indonesian elementary school contexts despite important cultural differences from Western settings where most prior research has been conducted. This finding addresses a critical gap regarding the generalizability of collegial supervision effectiveness across diverse cultural contexts.

Hoque et al. (2020) reviewed the peer coaching literature comprehensively and identified key components necessary for effective peer coaching, including structured observation protocols that specify what to observe, reciprocal feedback mechanisms emphasizing developmental rather than evaluative purposes, and collaborative goal-setting processes where both parties participate in determining learning objectives. All these components are incorporated in the current study's collegial supervision framework. The empirical confirmation that these components produce positive effects in Indonesian contexts validates their fundamental importance regardless of cultural context, suggesting that fidelity to these core principles is essential for implementation success.

From a learning theory perspective, the observed effects of collegial supervision align with well-established theories of professional learning through observation, modeling, and social interaction. In collegial supervision contexts, teachers serve simultaneously as models demonstrating teaching practices and as observers learning from colleagues' teaching approaches, engaging in reciprocal learning processes that activate both roles. This reciprocal engagement differs fundamentally from hierarchical supervision in which one party observes and evaluates while the other is passively observed. Social learning theory (Bandura, 1977) posits that learning through observation of models, particularly when accompanied by guided practice and feedback, produces substantial improvements in observer competence. Communities of practice frameworks

further illuminate how collegial supervision creates shared spaces where teachers develop common understanding, negotiate shared meanings about effective teaching, and develop joint repertoires of teaching practices refined through collaborative reflection. Wenger (1998) emphasizes that learning in communities of practice occurs through mutual engagement in shared enterprises, development of a shared repertoire of resources, and reciprocal relationships among members.

The relatively high implementation of professional collaboration at a score of 84.67 percent is particularly significant from a cultural perspective, suggesting that Indonesian teachers value collaborative activities and collective problem-solving approaches. This finding suggests that collegial supervision aligns well with broader Indonesian cultural values of gotong royong (cooperation and assistance), which emphasize collective responsibility and shared work. This cultural alignment represents a substantial advantage for collegial supervision implementation because the supervision model reinforces rather than contradicts cultural values, increasing the likelihood of sustainability and voluntary engagement. Rather than importing foreign supervision models that conflict with local culture, Indonesian educators can build upon existing cultural strengths.

However, the notably lower implementation of structured classroom observation at 72.55 percent reveals critical implementation challenges that warrant careful attention and targeted intervention. This discrepancy between collaborative activities generally and classroom observation specifically reflects research showing Indonesian culture scores high on power distance and collectivism dimensions, characteristics that profoundly shape interpersonal interactions and professional relationships. Hofstede (2001) found Indonesia scores 78 on power distance, indicating strong hierarchical orientations, and 48 on uncertainty avoidance, suggesting discomfort with ambiguous interpersonal situations. In high power distance cultures, individuals experience significant discomfort when peers assume evaluative roles, even when those evaluations are developmental rather than summative. Cultural emphasis on maintaining harmony, avoiding confrontation, and preserving face can inhibit frank professional discourse necessary for effective peer observation and honest feedback provision. Fitria & Puspita (2021) observed that Indonesian school cultures reflect broader societal values of face-saving and conflict avoidance. These cultural factors do not invalidate collegial supervision as an approach; rather, they indicate that successful implementation in Indonesian contexts requires careful cultural adaptation and sustained investment in building psychological safety and trust. Practical strategies might include beginning with less threatening collaboration forms, such as joint lesson planning before formal classroom observation, establishing explicit norms distinguishing collegial supervision from administrative evaluation, providing extensive training on culturally appropriate feedback, including constructive criticism, and creating protected time signaling institutional commitment.

Teacher performance is a multidimensional construct influenced by numerous factors extending well beyond supervision approaches. The path coefficient of 0.248, while statistically significant, represents a modest practical effect size reflected in the f-squared of 0.067. This modest effect indicates collegial supervision contributes meaningfully but not overwhelmingly to teacher performance variance. This finding is entirely consistent with research showing that professional development initiatives work best when integrated with other supportive conditions rather than functioning as standalone interventions operating in isolation. In alignment with this finding, research by Andarin et al. (2025) on transformational leadership demonstrates that principal leadership, characterized by the leader's ability to inspire subordinates to place collective needs above their own, often through motivating them with a shared vision and recognizing their contributions, creates enabling conditions for collegial supervision effectiveness. This suggests that collegial supervision is most effective when integrated with visionary principal leadership that actively supports peer collaboration.

Recent research by Frawley & Campbell (2025) examining teachers using PLS-SEM methodology found that professional learning communities play significant mediating roles in translating professional development opportunities into improved teaching practices and learning outcomes, suggesting that contextual and mediating factors substantially influence professional development effectiveness. This finding suggests that the relationship between collegial supervision and teacher performance may be mediated through variables such as professional learning community participation, teacher self-efficacy, and collective efficacy beliefs. The R-squared of 0.087 indicates that approximately 91.3 percent of teacher performance variance is explained by factors beyond collegial supervision and organizational culture, suggesting the importance of comprehensive, multifaceted approaches addressing numerous factors simultaneously rather than relying on single interventions. From a systems perspective, teacher performance results from complex interactions between individual factors (motivation, knowledge, experience), school factors (leadership, culture, resources), classroom factors (student characteristics, materials), and external factors (policy, community support).

School Organizational Culture Effects: Mechanisms and Cultural Context

School organizational culture demonstrates a statistically significant positive effect on teacher performance with a path coefficient of 0.149, t-statistic of 3.191, and p-value of 0.002. This result confirms theoretical arguments by Schein & Schein (2021) that organizational culture shapes employee behavior through

establishing shared assumptions, values, and norms that guide action and decision-making. Plaku & Leka (2025) recently demonstrated through empirical research that principals play a decisive role in shaping school culture, finding that schools with positive cultures characterized by professional collaboration and affiliative collegiality differ significantly from those with negative, hierarchical cultures. The current study's finding that collaborative orientation received the highest score at 82.15 percent suggests Purwakarta elementary schools possess important cultural foundations for supporting collegial supervision. However, the relatively lower score for inter-teacher trust at 73.42 percent indicates potential vulnerabilities in relational infrastructure necessary for effective peer learning and collegial supervision.

Trust represents a critical mediating mechanism through which organizational culture influences teacher performance and collegial supervision effectiveness, deserving particular attention. Trust consists of respect, personal regard, competence, and integrity—dimensions that build over time through consistent, supportive interactions. High-trust environments enable teachers to be vulnerable about professional challenges, engage in open dialogue about practice difficulties, and collaborate authentically without fear of judgment or retaliation. Conversely, low-trust environments constrain professional learning by encouraging teachers to hide difficulties, resist feedback, and maintain defensive practices. Meyer et al. (2025) found that trust significantly mediates relationships between principal leadership and teacher collaboration, suggesting that building trust should be a strategic priority in school improvement initiatives. Recent research by J. Nehez et al. (2022) examining school principals' leadership styles and their effects on school culture and organizational change found significant relationships between principal leadership, school culture, and organizational change capacity, with transformational leadership fostering more collaborative and change-oriented cultures.

The small effect size of organizational culture on teacher performance, with an f-squared of 0.024, warrants careful interpretation regarding its practical significance. While statistically significant, the modest direct effect suggests that organizational culture may operate primarily as an enabling condition or moderating variable shaping how other factors influence teacher performance rather than exerting strong direct causal effects. Silalahi et al. (2021) found that organizational culture mediates relationships between principal leadership and teacher task performance, confirming that culture functions as a mediating mechanism through which other influences operate. This interpretation suggests organizational culture may have important indirect effects mediated through variables such as collegial supervision, teacher motivation, and self-efficacy, warranting investigation in future longitudinal research. The theoretical distinction between direct and indirect effects has important practical implications for intervention design and sequencing; if culture primarily facilitates rather than directly produces performance improvements, interventions should target culture as a foundational element enabling other initiatives rather than as a standalone intervention.

Integrated Model, Practical Significance, and Context

The combination of collegial supervision and organizational culture explains 8.7 percent of teacher performance variance, which, while modest in statistical terms, represents a meaningful contribution given the complexity of factors influencing teaching effectiveness. Comparing this to other educational research provides important context for interpretation: Grissom et al. (2021) found that coaching programs produce effect sizes translating to meaningful percentages of explained variance in teaching practices and student outcomes. Meyer et al. (2025) examined school contextual factors and found that school-level variables typically explain meaningful portions of teacher effectiveness variance, suggesting the current study's findings are consistent with international patterns and not anomalous. Recent research by Demir & Uşak (2025) using SEM-PLS to measure teacher competency found that multiple teaching and assessment constructs positively contributed to overall teacher competency, demonstrating the value of SEM-PLS in capturing complex relationships in teacher competency research.

Practical significance should be evaluated not solely through statistical effect sizes but through consideration of implementation costs, scalability, and sustainability within realistic resource-constrained educational systems. Collegial supervision offers significant practical advantages compared to alternative professional development approaches that require substantial financial investment. Unlike external training programs importing consultants or requiring attendance at distant workshops with associated travel costs, collegial supervision leverages existing human capital within schools to create embedded professional learning opportunities that develop local expertise. The decentralized nature enables personalized, context-responsive development aligned with teachers' specific classroom needs and circumstances. Additionally, collegial supervision contributes to building sustainable professional learning cultures where continuous improvement becomes normative and self-sustaining rather than dependent on external initiatives. Hoque et al. (2020) emphasize that peer coaching provides opportunities for reciprocal benefits where both coaches and those being coached develop their professional skills through collaborative engagement, creating a multiplier effect where investment benefits numerous teachers simultaneously.

The study's methodological contribution lies in employing SEM-PLS analysis to provide a comprehensive evaluation of validity, reliability, and structural relationships in an integrated analytical framework suited to Indonesian educational research contexts. Demir & Uşak (2025) emphasize that PLS-SEM analysis in educational research enables simultaneous evaluation of measurement model quality and structural relationships while accommodating non-normal data distributions common in social science contexts where strict normality assumptions are frequently violated. The validation of collegial supervision and organizational culture instruments in Indonesian elementary school contexts represents an important methodological contribution with significant practical implications for future research. The high outer loadings ranging from 0.878 to 0.943, AVE values exceeding 0.8, Composite Reliability exceeding 0.97, and HTMT ratios below 0.72 provide strong evidence of measurement quality following criteria established by Hair et al. (2022). These psychometric results suggest that adapted instruments effectively capture intended constructs in Indonesian settings and can be confidently employed in future research, longitudinal studies, and evaluations of implementation initiatives.

4. CONCLUSION

This study demonstrates that collegial supervision and school organizational culture play a significant, evidence-based role in shaping teacher performance within Indonesian elementary schools. Through robust structural equation modeling-partial least squares methodology, adapted instruments were systematically validated with strong psychometric properties (outer loadings 0.878-0.943, AVE >0.8, Composite Reliability >0.97) that meet international research standards. These results confirm that collegial supervision—emphasizing peer collaboration, shared reflection, and mutual learning—offers a practical, relevant, and sustainable model for professional development, particularly well-suited to Indonesian educational contexts. Unlike external programs requiring substantial resources, collegial supervision leverages existing human capital within schools and can be implemented sustainably using local expertise while building embedded professional learning cultures.

The study reveals that positive and collaborative school organizational culture meaningfully strengthens foundational conditions enabling collegial supervision effectiveness. For policymakers, evidence supports increased investment in collegial supervision by creating regulatory space and protected time allocation, establishing clear policy distinctions between collegial supervision and administrative evaluation, and requiring integration into school improvement plans and performance accountability systems. For school principals, recommendations include modeling collaborative practices, allocating protected time for collegial supervision activities, establishing explicit norms distinguishing supervision from evaluation, and systematically building inter-teacher trust through consistent, supportive leadership. For education practitioners and teachers, actions include volunteering for collegial supervision training, beginning with less-threatening collaboration forms such as joint lesson planning before formal classroom observation, and progressively building trust through positive collaborative experiences. These integrated interventions address both supervision practices and organizational culture development, recognizing that structures and cultures are mutually reinforcing.

Future research should investigate mediating mechanisms through psychological constructs such as self-efficacy and professional commitment to explain the modest direct effects observed. Longitudinal studies tracking teachers and schools over multiple years would enable assessment of sustained effects and optimal implementation sequences. Comparative studies across diverse regions, school types, and cultural contexts would advance understanding of generalizability and contextual variations. Qualitative case studies examining implementation processes in schools with contrasting outcomes would illuminate barriers to effectiveness. Investigation of professional learning communities as mediating structures, cost-benefit analysis comparing collegial supervision with alternative professional development approaches, and international comparative research across Asian countries would identify which components are culturally universal versus context-specific, advancing understanding of implementation adaptation across diverse educational systems.

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REFERENCES

Andarin, M., Hariri, H., & Sari, S. R. (2025). *Principal Transformational Leadership Style on Teacher Performance*. *10*(2), 219–231.

Anderson, M. D., & Pounder, D. G. (2019). Broad-Based, Collegial Supervision has Strong Positive Effects on both Teaching and Learning. *Journal of Educational Supervision*, *6*(1), 1–28.

Bandura, A. (1977). Social Learning Theory. *Englewood Cliffs*.

Cohen, J. (1988). *Statistical power analysis for the behavioral sciences*.

Demir, S., & Uşak, M. (2025). Analyzing the implementation of PLS-SEM in educational technology research: A review of the past 10 years. *SAGE Open*, *15*(1), 1–18. https://doi.org/10.1177/21582440251345950

Enright, K., & Wieczorek, D. (2021). Collegial Supervision Transforms Clinical Practice. *Journal of Educational Supervision*, *4*(1), 1–22.

Fitria, H., & Puspita, P. (2021). The influence of principal leadership and school work culture on teacher professionalism. *Journal of Education and Learning*, *15*(2), 187–199.

Frawley, C., & Campbell, L. O. (2025). Factors that predict teachers' intentions to utilize emerging technologies: An investigation using PLS-SEM. *Education and Information Technologies*, *30*, 1589–1606. https://doi.org/10.1007/s10639-024-12796-8

Grissom, J. A., Egalite, A. J., & Lindsay, C. A. (2021). *How Principals Affect Students and Schools: A Systematic Synthesis of Two Decades of Research*. https://wallacefoundation.org/report/how-principals-affect-students-and-schools-systematic-synthesis-two-decades-research

Hair, J. F., Hult, G. T. M., Ringle, C. M., & Sarstedt, M. (2022). *A primer on partial least squares structural equation modeling (PLS-SEM)* (3rd ed.). Sage Publications.

Hargreaves, A., & Fullan, M. (2020). *Professional capital: Transforming teaching in every school*. Teachers College Press.

Hashim, A., Tahir, L., & Musa, M. (2020). Collegial Supervisory Practice in Malaysian Public Schools: Evidence from Secondary School Teachers. *International Journal of Psychosocial Rehabilitation*, *24*(5), 1–12. https://doi.org/10.37200/ijpr/v24i5/pr201942

Hofstede, G. (2001). Culture's Consequences: Comparing Values, Behaviors, Institutions and Organizations Across Nations. In *Behaviour Research and Therapy - BEHAV RES THER* (Vol. 41). https://doi.org/10.1016/S0005-7967(02)00184-5

Hollins, E. R. (2015). *Rethinking field experiences in preservice teacher preparation*. Routledge.

Hoque, K. E., Banu, H. B. K., Subramaniam, M. V. D., Islam, R., & Annamalai, S. (2020). Relationships between supervision and teachers' performance and attitude in secondary schools in Malaysia. *SAGE Open*, *10*(3), 1–11. https://doi.org/10.1177/2158244020925501

International Society for Technology in Education. (2020). *ISTE standards for educators*. ISTE Publications.

Menda, F. E., & Dwikurnaningsih, Y. (2024). A development of collegial supervision model through gallery walk and virtual community to improve teacher's ability. *Journal of Educational Supervision*, *7*(2), 112–134. https://doi.org/10.1177/08920206241269397

Meyer, A., Yada, T., Yada, A., Kempert, S., & Richter, D. (2025). Principal leadership practices for supporting teacher collaboration and collective teacher efficacy: A random intercept cross-lagged panel model. *Educational Administration Quarterly*, *61*(1), 1–28. https://doi.org/10.1177/17411432251383096

Nehez, E., & Blossing, U. (2022). School cultures and their influence on principals' improvement efforts. *School Effectiveness and School Improvement*, *33*(1), 1–18. https://doi.org/10.1080/09243453.2021.1979457

Nehez, J., Blossing, U., Gyllander Torkildsen, L., Lander, R., & Olin, A. (2022). Middle leaders translating knowledge about improvement: Making change in the school and preschool organisation. *Journal of Educational Change*, *23*(3), 315–341. https://doi.org/10.1007/s10833-021-09418-2

Plaku, A. K., & Leka, K. (2025). The role of leaders in shaping school culture. *Frontiers in Education*, *10*, 1–12. https://doi.org/10.3389/feduc.2025.1541525

Schein, E. H., & Schein, P. (2017). *Organizational culture and leadership* (5th ed.). Jossey-Bass.

Schein, E. H., & Schein, P. A. (2021). *Organizational culture and leadership* (6th ed.). Wiley.

Silalahi, M., Simatupang, S., Romy, E., Candra, V., & Sudirman, A. (2021). Analysis of teacher performance assessed from the aspects of organizational culture, motivation, and competence. *Journal of Education Research and Evaluation*, *5*(3), 406–413. https://doi.org/10.23887/jere.v5i3.33617

UNESCO Institute for Statistics. (2024). *Teacher indicators: Global framework for monitoring progress towards SDG 4*. UNESCO.

Wenger, E. (1998). *Communities of Practice: Learning, Meaning, and Identity*. Cambridge University Press.

Widodo, W., Soetjipto, B. E., & Suhanadji, S. (2024). How cultural intelligence-based principal leadership affects teacher task performance: The mediating role of organizational culture and school governance. *Journal of Intercultural Communication*, *24*(2), 88–104.

Wiyono, B. B., Rasyad, A., & Maisyaroh. (2021). The Effect of Collaborative Supervision Approaches and Collegial Supervision Techniques on Teacher Intensity Using Performance-Based Learning. *SAGE Open*, *11*(2). https://doi.org/10.1177/21582440211013779

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