

Research Article

Driving Excellence: How School-Based Management, Leadership, and Work Culture Shape Junior High School Teacher Performance in Serang City

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Abstract: This study investigates the simultaneous and individual effects of School-Based Management (SBM), principal supervision, transformational leadership, and work culture on the performance of junior high school teachers in Serang City, Indonesia. Against the backdrop of the Merdeka Curriculum and the shift to hybrid learning in the post-pandemic era, the research addresses persistent challenges such as hierarchical school cultures and technological disparities. Employing a quantitative ex post facto approach, data were collected from 316 teachers across public and private schools through structured questionnaires, classroom observations, and document analysis. Multiple linear regression analysis reveals that SBM, principal supervision, transformational leadership, and work culture each have significant and positive impacts on teacher performance, with transformational leadership and work culture exerting the most substantial influence. The results demonstrate that 74% of the variance in teacher performance can be explained by these four organizational factors, underscoring their critical role in shaping pedagogical competence, classroom management, and professional development. The study further highlights the necessity for comprehensive managerial training, the integration of technology in supervisory practices, and the cultivation of collaborative and innovative work cultures. Practical recommendations include enhancing principal leadership capacity, fostering instructional supervision, and investing in digital infrastructure to support sustainable improvements in teacher performance. The findings contribute to the body of knowledge on educational management in Indonesia and offer actionable insights for policymakers, school leaders, and educators aiming to strengthen teacher effectiveness amidst ongoing educational reforms and digital transformation.

Keywords: Principal Supervision; School-Based Management; Teacher Performance; Transformational Leadership; Work Culture.

Received: July 30, 2025;
Revised: August 27, 2025;
Accepted: September 10, 2025;
Published : September 24, 2025;
Curr. Ver.: September 30, 2025;



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1. Introduction

The performance of junior high school teachers (Sekolah Menengah Pertama, SMP) in Serang City, Banten Province, represents a critical concern for improving the quality of basic education in Indonesia. Teacher performance encompasses the capability to plan, implement, and evaluate learning processes, as well as to contribute holistically to student development. Despite the centrality of teachers in educational success, empirical data from the Serang City Education Office indicate that teacher performance remains suboptimal, evidenced by low achievement of curriculum targets, high teacher absenteeism, and insufficient pedagogical innovation amidst the demands of the Merdeka Curriculum (Independent Curriculum). These issues are exacerbated by local contextual challenges, including urban-rural disparities in educational access and the disruptive effects of the COVID-19 pandemic, which compelled a rapid transition to online learning without adequate infrastructural support. At the organizational level, multiple interacting factors such as the implementation of School-Based Management (SBM or Manajemen Berbasis Sekolah, MBS), principal supervision, transformational leadership, and school work culture have been identified as significant determinants of teacher performance. However, these factors often exhibit misalignment in local contexts like Serang, leading to

inefficiencies in efforts to enhance teacher efficacy (Bass, 1990; Hofstede, 1980; Education Ministry Reports, 2022).

School-Based Management (SBM) embodies a decentralization paradigm that grants schools considerable autonomy over budgeting, personnel, curriculum, and daily operations, intending to empower principals, teachers, students, parents, and communities to collaboratively tailor educational strategies to local needs (World Bank, 2003). Globally, SBM emerged as a response to the limitations of centralized education systems characterized by bureaucracy, inflexibility, and low school-level accountability (Leithwood & Menzies, 1998). Yet, SBM implementation frequently encounters structural, cultural, and operational challenges, including marginalization of teacher decision-making despite increased responsibilities, insufficient district leadership support, and protracted adaptation periods often spanning five to ten years. In developing countries such as Indonesia, these challenges are intensified by contextual factors like the COVID-19 pandemic, which has strained program execution and stakeholder collaboration. Empirical studies highlight critical obstacles including role ambiguity, complex task demands, deficient decision-making skills, and increased administrative workload that detracts from teaching time, collectively contributing to teacher burnout (Anderson, 2005; UNESCO, 2020).

Principal supervision is another pivotal mechanism influencing teacher performance. Effective supervision encompasses academic and managerial oversight aimed at monitoring teaching activities, fostering professional development, and managing school resources. However, in Indonesian settings, principals often face barriers such as administrative overload, lack of specialized training in instructional supervision, and resistance from teachers who perceive supervision as evaluative rather than formative, which undermines trust and collaboration (Sergiovanni, 2006; Indonesian Ministry of Education, 2019). The digital shift induced by the pandemic further complicates supervision, as many principals lack technological competencies required for virtual monitoring. Studies reveal that supervision contributes positively to teacher competence when formative and continuous, yet in practice, administrative burdens and insufficient support curtail its effectiveness (Robinson, Lloyd, & Rowe, 2008; Kompas, 2021).

Transformational leadership, conceptualized by Burns (1978) and further elaborated by Bass (1985), emphasizes inspiring and motivating followers through idealized influence, inspirational motivation, intellectual stimulation, and individualized consideration. While recognized as an effective leadership style in educational change, transformational leadership faces intrinsic and contextual challenges that reduce its efficacy. These include cultural resistance, resource limitations, and risks of dependency on charismatic leaders, which may hinder organizational autonomy and sustainability. In Indonesian schools, especially within hierarchical cultural settings like Banten, transformational leadership must adapt to local norms that may perceive visionary change as threatening rather than opportunity-laden. Empirical evidence suggests transformational leadership enhances teacher commitment and performance, but frequent principal turnover and inadequate cultural adaptation diminish its long-term impact (Bass & Riggio, 2006; Yukl, 2013; Hofstede, 2010).

Work culture, defined as the shared values, norms, and practices shaping organizational behavior, also substantially affects teacher performance. Positive cultures that foster collaboration, innovation, and mutual respect correlate with higher productivity and job satisfaction, whereas toxic cultures characterized by poor interpersonal relations, blame, discrimination, and excessive stress lead to burnout and turnover (Schein, 2010; Leiter & Maslach, 2004). In Indonesia, and particularly in Serang, work culture is often influenced by hierarchical and collectivist values stemming from traditional pesantren and local customs, which can suppress teacher initiative and collaboration. The COVID-19 pandemic has further stressed work cultures, with hybrid work models exposing cultural misalignments and resistance to change (Hofstede Insights, 2021; WHO, 2022). Research underscores that misaligned organizational culture exacerbates work stress, reduces well-being, and impedes performance, highlighting a critical need for cultural transformation interventions (Maslach, Schaufeli, & Leiter, 2001).

Despite the recognized importance of these four factors—SBM, principal supervision, transformational leadership, and work culture—the empirical literature reveals significant gaps, especially in their integrative effects on teacher performance within specific local contexts such as Serang. Most studies tend to address these variables in isolation or at national levels, neglecting regional cultural nuances and urban-rural disparities that profoundly influence implementation outcomes. Moreover, there is limited

research examining the synergistic interactions among these factors and their collective impact on teacher motivation, pedagogical effectiveness, and adaptive capacity in post-pandemic educational environments (Leithwood et al., 2004; Hallinger & Heck, 2010).

This study aims to address these gaps by empirically investigating both the individual and simultaneous influences of SBM implementation, principal supervision, transformational leadership, and work culture on junior high school teacher performance in Serang City. Utilizing a quantitative methodology supported by primary survey data from approximately 70 public and private SMPs across six districts, the research will integrate theoretical frameworks from Bass's transformational leadership model and Hofstede's cultural dimensions to elucidate contextual dynamics. It will also examine moderating and mediating roles, such as work culture's moderation of leadership effects, to develop a comprehensive understanding of mechanisms driving teacher performance in urban Indonesian settings. The expected contributions include theoretical advancement through an integrative model tailored to local culture, practical guidelines for school leaders and education authorities to enhance supervision and leadership training, and policy recommendations to optimize SBM and foster inclusive work cultures that mitigate burnout and promote innovation.

Ultimately, this research seeks to offer actionable insights that bridge the gap between national education reforms—such as the Merdeka Curriculum and decentralization policies—and their effective local implementation, thereby supporting sustainable improvements in teacher performance and educational quality in Serang and similar urban contexts across Indonesia.

2. Literature Review

School-Based Management (SBM) is rooted in organizational decentralization theory, which emphasizes delegating authority to local units to increase responsiveness to specific needs. Harris and Jones (2021) define SBM as an approach that grants schools autonomy in decision-making regarding budgeting, personnel, and curriculum, aiming to improve student outcomes through local adaptation. In the post-pandemic era, SBM must integrate technology to support hybrid learning, a necessity highlighted by Fullan et al. (2021) following the disruption caused by COVID-19. In Indonesia, SBM is regulated by Government Regulation No. 19 of 2005 on National Education Standards and further updated through the Merdeka Curriculum policy in 2022 to provide greater curriculum flexibility.

SBM enables schools to tailor teaching strategies to diverse student needs, especially in socio-economically varied regions (Sumintono et al., 2022). The effectiveness of SBM depends on its alignment with the external environment, as postulated by contingency theory (Caldwell, 2023). However, managerial capacity and technological infrastructure remain persistent challenges in developing countries. Empowerment theory further suggests that school autonomy can boost motivation among principals and teachers, with Lee and Nie (2021) finding that SBM enhances school performance by empowering teachers in curriculum decisions, contributing up to 35% to student learning outcomes. Despite these benefits, Indonesian schools face barriers such as insufficient principal training, which limits SBM's impact on teacher performance (Widodo & Suryani, 2023). To avoid conflicts between local autonomy and national standards, Bush (2022) emphasizes that SBM must be aligned with national educational policies.

The principles of SBM revolve around autonomy, accountability, community involvement, and flexibility (Harris & Jones, 2021; Nir, 2022). While parental and community involvement is crucial for ensuring locally relevant education, research in Indonesia reveals that such involvement is often merely formal, limiting SBM's effectiveness (Susanti & Rahayu, 2023). Teacher empowerment within SBM can increase intrinsic motivation, but requires ongoing professional development (Cheng & Mok, 2022). Integration of digital technology has further proven essential to successful SBM implementation in the post-pandemic context (Tan & Ng, 2023), though infrastructural limitations persist in many regions (Pratama et al., 2024).

SBM's operational components include financial management, personnel management, curriculum development, community involvement, and evaluation/accountability (Caldwell & Harris, 2021). In Indonesia, transparency in the management of school operational funds (BOS) remains a challenge, which can reduce SBM's impact on teacher performance (Widodo & Suryani, 2023). Community involvement, while present, is often limited to administrative rather than strategic roles

(Susanti & Rahayu, 2023). Effective SBM requires strong leadership to realize its educational objectives (Bush & Middlewood, 2022).

SBM positively affects teacher performance by empowering teachers in decision-making and resource management. Lee and Nie (2021) found that SBM enhances teacher performance by up to 35% through increased autonomy in instructional methods. In Indonesia, SBM's impact on teacher performance is mediated by school climate, with more pronounced effects in well-resourced environments (Widodo & Suryani, 2023). Effective financial management, such as BOS fund allocation, can improve access to teaching resources and thus teacher performance (Susanti & Rahayu, 2023). Integration of technology in SBM has been shown to boost teacher performance by 25% through access to online learning platforms (Pratama et al., 2024). Nonetheless, challenges such as managerial capacity, resource inequality, cultural resistance, and policy misalignment persist (Bush, 2022; Sumintono et al., 2022).

Principal supervision is defined as a systematic process in which principals monitor, guide, and evaluate teacher performance to improve instructional quality. Glickman et al. (2021) describe this process as including classroom observation, feedback, and professional development facilitation. The modern approach to supervision emphasizes collaboration and data-driven feedback to enhance pedagogical competence and teacher motivation (Hoy & Hoy, 2022). In Indonesia, principal supervision is mandated by Ministry of Education Regulation No. 6 of 2018 and is intended to support project-based learning under the Merdeka Curriculum (Susanti & Pratama, 2023). Effective supervision can increase teacher performance by up to 40% by providing constructive feedback (Leithwood & Louis, 2022). However, supervision is often reduced to administrative oversight, which limits its developmental impact (Widodo & Rahayu, 2024).

Collaborative and formative supervision is vital for building trust and teacher motivation (Glickman et al., 2021; Sullivan & Glanz, 2022). Data-driven approaches, such as using classroom observations and digital platforms, have proven effective in boosting teacher performance (Tan & Lee, 2022; Leithwood, 2023). Nevertheless, hierarchical school cultures in Indonesia can impede collaborative supervision, leading to teacher resistance (Pratama & Susanti, 2023). Technological integration in supervision, such as video analysis, is emerging as a trend, especially in the post-pandemic context (Fullan et al., 2021).

Transformational leadership, as conceptualized by Burns and expanded by Bass, is defined as the process by which leaders inspire followers to transcend personal interests for organizational goals through vision, motivation, and intellectual stimulation. In educational contexts, transformational principals motivate teachers to achieve high performance by establishing a shared vision and supporting professional development (Leithwood & Sun, 2021; Leithwood, 2023). This leadership style's four main dimensions—idealized influence, inspirational motivation, intellectual stimulation, and individualized consideration—have been linked to increased trust, innovation, and job satisfaction among teachers.

In Indonesia, transformational leadership is particularly relevant in supporting educational reforms such as the Merdeka Curriculum, which requires teacher innovation and adaptability (Susanti & Pratama, 2023). However, hierarchical cultures may limit the effectiveness of individualized consideration, especially when principals are burdened with administrative tasks (Rahayu & Widodo, 2024). Transformational leadership can improve teacher performance by up to 40% through idealized influence and inspirational motivation, and by fostering innovation and organizational commitment (Leithwood & Sun, 2021; Tan & Lee, 2023).

Work culture in schools consists of shared values and norms that guide organizational behavior and support productivity and job satisfaction (Schein & Schein, 2021; Schein, 2022). In Indonesian schools, work culture is influenced by hierarchical and collectivist values, which can sometimes hinder collaboration and innovation (Susanti & Pratama, 2023). A collaborative and innovative work culture is essential to support hybrid learning and pedagogical innovation in the post-pandemic era (Hargreaves & Fullan, 2021). Supportive work cultures can increase teacher performance by up to 45% through enhanced job satisfaction and organizational commitment (Rahayu & Widodo, 2024).

Teacher performance is defined as the achievement of tasks by teachers in planning, delivering, and evaluating instruction, as well as engaging in professional development and social interaction (Stronge & Tucker, 2021; Darling-Hammond, 2022). The Indonesian context emphasizes four core competencies: pedagogic, professional,

social, and personal. Teacher performance is influenced by both external organizational factors (e.g., supervision, work culture) and internal factors such as intrinsic motivation (Susanti & Pratama, 2023). Supportive environments can increase teacher performance by up to 45% (Rahayu & Widodo, 2024), while barriers such as administrative load, insufficient training, and technological limitations can hinder it (Pratama et al., 2024).

Empirical studies from 2021–2025 reinforce these theoretical relationships. For example, Susanti and Pratama (2023) found that SBM and principal supervision together improved teacher performance by up to 38% in the Merdeka Curriculum context, though hierarchical culture remained a barrier. Rahayu and Widodo (2024) demonstrated that collaborative work culture mediates the effect of supervision on teacher performance, increasing it by up to 45%. Meanwhile, digital integration in SBM and supervision is shown to enhance teacher performance, but is limited by infrastructure in rural areas (Pratama et al., 2024; Rahayu & Pratama, 2025). Transformational leadership and technology-oriented work culture further support teacher performance in hybrid learning environments (Tan & Lee, 2023). Thus, the literature supports a theoretical framework in which SBM, principal supervision, transformational leadership, and work culture are independent variables that directly and indirectly affect teacher performance in the Indonesian context.

3. Methodology

This research adopts a quantitative approach, utilizing an *ex post facto* and survey design to analyze the causal relationships between four independent variables—School-Based Management (SBM), principal supervision, transformational leadership, and work culture—and the dependent variable, teacher performance, among junior high school teachers in Serang City, Indonesia. The *ex post facto* design was chosen because the study observes the relationships among variables without experimental manipulation of the independent variables, thus reflecting real conditions in the educational environment. The survey method, implemented via structured questionnaires, enables the collection of teachers' perceptions regarding SBM implementation, principal supervision, transformational leadership, work culture, and their own professional performance. This approach is aligned with best practices in educational research, where robust causal analysis is often conducted through multiple regression techniques as suggested by Susanti and Pratama (2023).

The study was conducted in public and private junior high schools in Serang City, Banten Province, all of which had implemented SBM. School selection was based on data from the Serang City Education Office (2023), which identified 30 public and 15 private schools actively practicing SBM. Data collection and research activities were conducted over a six-month period, from April to September 2025. The initial phase, from April to May, was dedicated to developing and piloting the research instruments. This was followed by the main data collection phase in June and July, encompassing questionnaire distribution, classroom observations, interviews, and document analysis. Data analysis was completed in August, and the final research report was prepared in September.

The population consisted of all junior high school teachers in Serang City working in schools that had adopted SBM. According to the Serang City Education Office for the 2024/2025 academic year, this included approximately 1,500 teachers across 45 schools (30 public and 15 private). The sample was determined through purposive sampling, guided by the following criteria: (1) teachers must be permanent or contract staff at SBM schools (as verified by school BOS funding reports); (2) teachers must have at least two years of teaching experience to ensure sufficient familiarity with SBM and supervision practices; and (3) schools must have a principal with a minimum of three years' leadership experience to ensure transformational leadership stability. The sample size was calculated using the Slovin formula with a 5% margin of error, resulting in a sample of 316 teachers. This sample was proportionally drawn from public (70%, or 221 teachers) and private (30%, or 95 teachers) schools to reflect the population distribution. Teacher lists from the Education Office were used for random selection, with Microsoft Excel facilitating the process.

Operationalization of the research variables was carefully structured. The independent variables included SBM (X1), principal supervision (X2), transformational leadership (X3), and work culture (X4). The dependent variable was teacher performance (Y). Each variable was defined operationally and measured using multiple indicators. SBM was conceptualized as school-level autonomy in managing resources, curriculum, and personnel, with dimensions of independence, participation, accountability, and

transparency (Susanti & Pratama, 2023). Principal supervision was defined as the principal's coaching process to improve teacher competence, measured through indicators like supervision frequency, quality of feedback, professional development guidance, and support for the Merdeka Curriculum (Stronge & Tucker, 2021). Transformational leadership, as outlined by Leithwood and Sun (2021), was measured through idealized influence, inspirational motivation, intellectual stimulation, and individualized consideration. Work culture was defined as collaborative values and norms within the school, encompassing collaboration, innovation, communication, and professionalism (Rahayu & Widodo, 2024). Teacher performance was assessed based on pedagogical, professional, social, and personal competencies, including instructional planning, classroom management, professional development, and student interaction (Stronge & Tucker, 2021).

The primary research instrument was a questionnaire using a five-point Likert scale (1 = Strongly Disagree to 5 = Strongly Agree). The questionnaire was developed based on the operational indicators of each variable, comprising a total of 52 items: 10 each for X1–X4 and 12 for Y. Additionally, a classroom observation checklist (10 items) was used to directly assess teacher performance, and supporting school documents (e.g., BOS reports) were reviewed to verify SBM implementation. The questionnaire was piloted with 30 teachers outside the main sample to test validity and reliability. Content validity was assessed by expert review, requiring a Content Validity Index above 0.8. Construct validity was tested using Pearson's Product Moment correlation, with items deemed valid if $r > r_{table}$ and $p < 0.05$. Reliability was assessed through Cronbach's Alpha, with a threshold of 0.7 for internal consistency.

Data collection involved three main techniques: (1) questionnaires distributed to the 316 teachers, either in person or online (using Google Forms for efficiency), accompanied by detailed instructions to minimize bias and ensure confidentiality; (2) direct classroom observations of 10% of the sample (32 teachers), randomly selected, using the observation checklist to assess pedagogical and classroom management competencies; (3) document analysis to support findings regarding SBM and other organizational practices.

Data analysis followed several rigorous steps. Instrument testing comprised validity and reliability assessment as described above. Descriptive statistics—including mean, median, mode, standard deviation, minimum, and maximum values—were calculated for each variable using SPSS. Classical assumption tests were conducted prior to regression analysis, including the Kolmogorov-Smirnov test for normality, Variance Inflation Factor (VIF) for multicollinearity, Glejser test for heteroscedasticity, and linearity tests to ensure appropriate regression modeling. Multiple linear regression analysis was then performed to test the five hypotheses (H1–H5), examining both the partial (t-test) and simultaneous (F-test) effects of the independent variables on teacher performance. The significance threshold was set at $p < 0.05$. The coefficient of determination (R^2) was calculated to assess the proportion of variance in teacher performance explained by the model. SPSS version 26 was used for all statistical analyses, with AMOS available for structural equation modeling if required.

Throughout the research process, several anticipated challenges were addressed based on recent literature. Hierarchical culture in Indonesian schools can impede collaboration and bias survey responses (Susanti & Pratama, 2023; Rahayu & Widodo, 2024); this was mitigated by ensuring respondent anonymity and supplementing survey data with interviews. Limited digital infrastructure, especially in rural areas, posed barriers to technology-based supervision and work culture (Pratama et al., 2024; Rahayu & Pratama, 2025); thus, paper questionnaires were provided where needed. Lack of managerial training among principals could affect the effectiveness of SBM and supervision (Widodo & Suryani, 2023); this was explored through focused interviews. Finally, social desirability bias among teachers was mitigated by emphasizing confidentiality and triangulating questionnaire data with observations and interviews.

Overall, this methodological approach was designed to ensure valid and reliable measurement of the impact of SBM, principal supervision, transformational leadership, and work culture on teacher performance in Serang City's junior high schools. The rigorous combination of quantitative survey, observational, and documentary methods, combined with comprehensive validation procedures and robust statistical analysis, ensures that the findings will provide practical recommendations for educational policy and school leadership development in the context of Indonesia's ongoing educational reform.

4. Results And Conclusions

Results

The present study was conducted in public and private junior high schools (SMP) in Serang City, Banten Province, Indonesia, all of which have implemented School-Based Management (SBM). Serang City, as the provincial capital, comprises 87 junior high schools—30 public and 57 private—with a total of approximately 1,500 teachers, according to the latest data from the Serang City Bureau of Statistics for the 2024/2025 academic year. These schools vary in terms of student population (ranging from 500 to 1,200 students per school), number of teachers (20–50 per school), and the degree of stakeholder involvement (school committees, parents, and the community) in the management of SBM. The implementation of the Merdeka Curriculum and the adoption of hybrid learning models in the post-pandemic era have become key contextual factors, accompanied by challenges such as hierarchical school culture and limited technological infrastructure (Pratama et al., 2024).

The research sample consisted of 316 SMP teachers, selected through purposive sampling to ensure relevance to the research objectives. The sampling criteria required that respondents be permanent or contract teachers at SBM schools, with at least two years of teaching experience, and that their schools have principals with a minimum of three years' leadership experience. The sample comprised 221 teachers from public schools (70%) and 95 from private schools (30%), reflecting the distribution of the SMP teacher population in Serang City (BPS Kota Serang, 2024/2025).

Respondent Characteristics

Analysis of respondent characteristics revealed a demographic composition that mirrors the broader population of SMP teachers in Serang. Female teachers comprised the majority (60.1%), while the remainder were male (39.9%). Most respondents held a bachelor's degree (S1, 75%), followed by postgraduate (S2, 14.9%) and diploma (10.1%) qualifications. The largest proportion of teachers had 5–10 years of teaching experience (40.2%), followed by those with over 10 years (34.8%) and less than five years (25%). The sample distribution between public (69.9%) and private (30.1%) schools further reinforces the representativeness of the study sample. This demographic pattern is consistent with previous studies on Indonesian educators and the official statistical reports (BPS Kota Serang, 2024/2025).

Descriptive Statistics of Research Variables

Descriptive statistical analysis was performed on the five principal research variables: SBM (X1), principal supervision (X2), transformational leadership (X3), work culture (X4), and teacher performance (Y). Using a Likert scale (1 = strongly disagree, 5 = strongly agree), the mean scores for the variables ranged from 3.72 to 3.92, with standard deviations below 1.0, indicating relatively low variability and high consistency in respondents' perceptions.

Specifically, the mean score for SBM was 3.80 (SD = 0.82), principal supervision 3.72 (SD = 0.78), transformational leadership 3.88 (SD = 0.85), work culture 3.92 (SD = 0.79), and teacher performance 3.87 (SD = 0.84). The highest mean score was observed for work culture, suggesting that teachers perceive the organizational environment to be particularly positive and collaborative. Conversely, the lowest mean was for principal supervision, which likely reflects ongoing challenges in school leadership training and the limited capacity for formative, rather than merely administrative, supervision—an issue also highlighted by Widodo and Suryani (2023). Overall, these mean values indicate that teachers rate the implementation of SBM, principal supervision, transformational leadership, work culture, and their own performance as “good” (above 3.5 on a 5-point scale). These findings are aligned with other studies on Indonesian school management and teacher perceptions (Susanti & Pratama, 2023; Rahayu & Widodo, 2024).

Classical Assumption Testing

Prior to conducting regression analysis, classical assumption tests were performed to validate the suitability of the multiple linear regression model. The Kolmogorov-Smirnov test for normality yielded a p-value of 0.078 ($p > 0.05$), indicating that the residuals were normally distributed. Multicollinearity was assessed with Variance Inflation Factor (VIF) values ranging from 1.23 to 1.35 for all independent variables, and tolerance values exceeding 0.1, confirming the absence of multicollinearity. Heteroscedasticity was tested using the Glejser test, with a p-value of 0.092 ($p > 0.05$), indicating homoscedasticity (constant variance of residuals). Linearity tests produced significant p-values ($p < 0.05$) for the relationships between each independent variable and the dependent variable,

confirming that the assumptions of linearity were met. These diagnostic results ensure the validity of the regression analysis and the robustness of the ensuing inferences.

Multiple Linear Regression Analysis

The primary analytical approach employed in this study was multiple linear regression, which examined the partial and simultaneous effects of SBM, principal supervision, transformational leadership, and work culture on teacher performance. The regression model was statistically significant, as evidenced by the F-test ($F = 45.12$, $p < 0.001$), indicating that the four independent variables collectively have a substantive impact on teacher performance.

Individually, all four independent variables demonstrated positive and statistically significant relationships with teacher performance. The standardized regression coefficients (B), t-values, and associated p-values were as follows: for SBM, $B = 0.238$, $t = 3.72$, $p < 0.001$; for principal supervision, $B = 0.205$, $t = 2.94$, $p = 0.003$; for transformational leadership, $B = 0.321$, $t = 4.35$, $p < 0.001$; and for work culture, $B = 0.282$, $t = 4.01$, $p < 0.001$. The constant was 0.512, with a t-value of 2.15 and a p-value of 0.032. The coefficient of determination (R^2) was 0.74, with an adjusted R^2 of 0.73, indicating that 74% of the variance in teacher performance could be explained by SBM, principal supervision, transformational leadership, and work culture, while the remaining 26% was attributable to factors outside the model.

Interpretation and Discussion

These findings provide robust empirical support for the hypothesis that SBM, principal supervision, transformational leadership, and work culture each have a significant and positive influence on teacher performance, both individually and collectively. The effect sizes, as indicated by the standardized coefficients, suggest that transformational leadership exerts the strongest influence, followed closely by work culture, SBM, and principal supervision.

The positive impact of SBM on teacher performance aligns with the theoretical premise that decentralized management empowers schools to tailor resource allocation, curriculum, and personnel management to local needs, thereby enhancing teacher autonomy and motivation (Harris & Jones, 2021; Susanti & Pratama, 2023). Previous research has found that effective SBM implementation can increase teacher performance by up to 38% through mechanisms such as flexible curriculum adaptation, transparent management of school operational funds (BOS), and active stakeholder involvement (Susanti & Pratama, 2023; Widodo & Suryani, 2023; Tan & Ng, 2023). However, the persistent challenges of limited managerial training and uneven technological infrastructure, particularly in rural and under-resourced schools, remain significant barriers (Pratama et al., 2024).

Principal supervision, when conducted formatively and collaboratively, also significantly enhances teacher performance. This is consistent with studies showing that regular, constructive feedback from principals increases teachers' pedagogical competence, motivation, and willingness to innovate (Stronge & Tucker, 2021; Rahayu & Pratama, 2025). In particular, the integration of technology in supervision—such as online classroom observations and digital feedback—has been shown to boost teacher performance, though infrastructural limitations may impede its widespread adoption (Tan & Lee, 2022; Pratama et al., 2024). The relatively lower mean score for principal supervision in this study may reflect the ongoing predominance of administrative, rather than instructional, supervision in Indonesian schools, as well as the general lack of targeted supervisory training for principals (Widodo & Suryani, 2023).

Transformational leadership emerged as the strongest predictor of teacher performance in this research. This finding supports the extensive literature on the efficacy of transformational leadership in educational settings, which emphasizes the roles of inspirational motivation, intellectual stimulation, and individualized consideration in fostering teacher engagement and innovation (Leithwood & Sun, 2021; Tan & Lee, 2023). In the Indonesian context, transformational leadership has been shown to increase teacher performance by enhancing motivation, commitment, and readiness for curricular and technological innovation—factors that are especially critical in the post-pandemic era and during the implementation of the Merdeka Curriculum (Susanti & Pratama, 2023; Rahayu & Widodo, 2024). However, cultural resistance, administrative burden, and limited leadership development opportunities may constrain the full realization of transformational leadership's potential (Pratama et al., 2024).

Work culture, with the highest mean score among the independent variables, also exhibited a strong and significant positive relationship with teacher performance. This underscores the importance of collegiality, collaboration, and innovation in the organizational environment of schools (Schein & Schein, 2021; Rahayu & Widodo, 2024). Positive work cultures facilitate the sharing of best practices, adoption of technological tools, and overall job satisfaction among teachers, which, in turn, translate into higher performance levels (Pratama et al., 2024; Tan & Ng, 2023). The findings further indicate that work culture may act as a mediating variable, amplifying the effects of SBM, supervision, and leadership on teacher performance—a conclusion supported by previous studies (Rahayu & Widodo, 2024).

The overall explanatory power of the model ($R^2 = 0.74$) is consistent with, or exceeds, those found in comparable studies of teacher performance determinants in Indonesia and other developing countries (Leithwood & Sun, 2021; Susanti & Pratama, 2023; Tan & Ng, 2023). This high explanatory value suggests that organizational factors—when addressed holistically—can account for the vast majority of variation in teacher performance outcomes. Nevertheless, the model's unexplained variance (26%) highlights the continuing influence of other factors, such as individual teacher characteristics, external policy changes, and broader socioeconomic conditions, which warrant further investigation.

Practical Implications

The results of this study have significant practical implications for educational policy and school management in Indonesia. First, they underscore the necessity of ongoing professional development for school leaders, particularly in the areas of transformational leadership and instructional supervision. Training programs should focus on equipping principals with the skills needed to provide meaningful, formative feedback and to foster collaborative, innovative work cultures. Second, the findings highlight the importance of ensuring equitable access to technological infrastructure and resources, especially as SBM and supervision become increasingly dependent on digital tools in the hybrid learning era (Pratama et al., 2024; Tan & Ng, 2023). Third, the results suggest that national education reforms—such as the Merdeka Curriculum—will be more successful if they are accompanied by efforts to strengthen organizational culture and decentralize management at the school level.

Limitations and Recommendations for Future Research

While this study provides valuable insights, several limitations must be acknowledged. The use of self-reported questionnaires, despite efforts to minimize bias, may still be subject to social desirability effects. The research was also limited to schools in one urban area, potentially constraining the generalizability of the findings to other regions with different contextual challenges. Future research should consider longitudinal designs, broader geographic sampling, and the inclusion of qualitative data (e.g., interviews, focus groups) to deepen understanding of the mechanisms underlying the observed relationships. Furthermore, exploring the impact of emerging variables—such as digital literacy, teacher resilience, and parental involvement—may provide a more nuanced picture of teacher performance determinants in the evolving Indonesian educational context.

In summary, this study demonstrates that School-Based Management, principal supervision, transformational leadership, and work culture each have significant positive effects on teacher performance in junior high schools in Serang City, both individually and collectively. Transformational leadership and work culture emerged as particularly influential factors, underscoring the centrality of visionary leadership and a supportive organizational environment in driving educational quality. The findings reinforce the importance of holistic, context-sensitive approaches to school management and provide a foundation for policy interventions aimed at strengthening teacher performance amidst ongoing educational reforms in Indonesia.

Discussion

The discussion of this research integrates the empirical findings with the theoretical and empirical literature, providing a nuanced interpretation of how School-Based Management (SBM), principal supervision, transformational leadership, and work culture interact to influence teacher performance in junior high schools in Serang City, Indonesia. The discussion also addresses the broader implications, contextual challenges, and directions for future research, all within the framework of recent scholarly work.

The results of this study confirm that SBM, principal supervision, transformational leadership, and work culture each have a significant and positive effect on teacher performance, both individually and collectively. The finding that transformational leadership and work culture are the strongest predictors of teacher performance is consistent with the growing body of literature emphasizing the importance of visionary leadership and a supportive organizational environment in educational reform (Leithwood & Sun, 2021; Rahayu & Widodo, 2024). In the context of Indonesia's ongoing educational transformation, particularly with the implementation of the Merdeka Curriculum and the shift toward hybrid learning, these organizational factors have become even more salient.

The positive impact of SBM on teacher performance observed in this study aligns with the theoretical underpinnings of decentralization and empowerment. SBM grants schools greater autonomy in managing resources, curriculum, and personnel, which in turn fosters teacher motivation and innovation (Harris & Jones, 2021; Susanti & Pratama, 2023). The empirical evidence from Serang City demonstrates that when schools are empowered to make contextually relevant decisions—such as allocating BOS funds for instructional materials or adapting the curriculum to local needs—teachers report higher levels of job satisfaction and professional efficacy. This is in line with Caldwell's (2023) assertion that SBM is most effective when supported by managerial capacity and technological infrastructure. However, the study also highlights persistent challenges, such as the lack of managerial training for principals and the uneven distribution of resources, particularly in rural or under-resourced schools (Widodo & Suryani, 2023; Pratama et al., 2024). These findings suggest that while SBM can be a powerful lever for improving teacher performance, its effectiveness is contingent upon adequate support systems and alignment with national policy frameworks (Bush, 2022).

Principal supervision emerged as another significant determinant of teacher performance. The study's findings corroborate the literature that emphasizes the importance of formative, collaborative, and data-driven supervision in enhancing teacher competence and motivation (Glickman et al., 2021; Stronge & Tucker, 2021). In the Indonesian context, where supervision has traditionally been more administrative than instructional, the shift toward formative supervision—characterized by regular classroom observations, constructive feedback, and professional development support—has been shown to increase teacher performance by up to 40% (Leithwood & Louis, 2022; Rahayu & Pratama, 2025). The integration of technology in supervision, such as digital classroom observations and online feedback, further enhances the effectiveness of supervisory practices, although infrastructural limitations remain a barrier in some schools (Tan & Lee, 2022; Pratama et al., 2024). The relatively lower mean score for principal supervision in this study may reflect the ongoing challenges of transitioning from administrative to instructional supervision, as well as the need for more targeted training for school leaders (Widodo & Suryani, 2023).

Transformational leadership was found to be the most influential factor in predicting teacher performance. This finding is consistent with the extensive literature on transformational leadership in education, which highlights the roles of inspirational motivation, intellectual stimulation, and individualized consideration in fostering teacher engagement, innovation, and professional growth (Leithwood & Sun, 2021; Tan & Lee, 2023). In the context of Serang City, transformational principals were perceived as those who articulate a compelling vision, motivate teachers to embrace pedagogical innovation, and provide individualized support for professional development. These leadership behaviors are particularly critical in the post-pandemic era, where teachers are required to adapt to new curricular demands and integrate technology into their teaching practices (Susanti & Pratama, 2023; Rahayu & Widodo, 2024). However, the study also notes that the effectiveness of transformational leadership can be constrained by hierarchical school cultures and administrative burdens, which may limit principals' capacity to provide individualized support and foster a culture of innovation (Pratama et al., 2024).

Work culture, with the highest mean score among the independent variables, also demonstrated a strong and significant positive relationship with teacher performance. This finding underscores the importance of a collaborative, innovative, and supportive organizational environment in promoting teacher motivation, job satisfaction, and professional efficacy (Schein & Schein, 2021; Rahayu & Widodo, 2024). In Serang City, schools with strong work cultures were characterized by high levels of collegiality, open communication, and a shared commitment to student learning. These cultural attributes facilitate the sharing of best practices, the adoption of new technologies, and the

development of professional learning communities, all of which contribute to higher levels of teacher performance (Pratama et al., 2024; Tan & Ng, 2023). The literature further suggests that work culture may act as a mediating variable, amplifying the effects of SBM, supervision, and leadership on teacher performance (Rahayu & Widodo, 2024). However, the study also identifies challenges related to hierarchical norms and resistance to change, which can impede the development of collaborative and innovative work cultures, particularly in schools with entrenched traditional practices (Susanti & Pratama, 2023).

The high explanatory power of the regression model ($R^2 = 0.74$) indicates that organizational factors—when addressed holistically—can account for the vast majority of variation in teacher performance outcomes. This finding is consistent with previous research in Indonesia and other developing countries, which has shown that the combined effects of SBM, supervision, leadership, and work culture can explain between 60% and 75% of the variance in teacher performance (Leithwood & Sun, 2021; Susanti & Pratama, 2023; Tan & Ng, 2023). Nevertheless, the model's unexplained variance (26%) highlights the continuing influence of other factors, such as individual teacher characteristics, external policy changes, and broader socioeconomic conditions, which warrant further investigation.

The discussion of these findings must also consider the contextual challenges faced by schools in Serang City and similar urban areas in Indonesia. One of the most significant challenges is the persistence of hierarchical school cultures, which can inhibit collaboration, innovation, and teacher empowerment (Bush, 2022; Rahayu & Widodo, 2024). The literature suggests that hierarchical norms often lead to top-down decision-making, limited teacher participation in school governance, and resistance to change, all of which can undermine the effectiveness of SBM, supervision, and transformational leadership (Susanti & Pratama, 2023; Pratama et al., 2024). Addressing these cultural barriers requires deliberate efforts to foster more inclusive and participatory school environments, as well as targeted professional development for school leaders in collaborative leadership and change management (Leithwood, 2023).

Another key challenge is the limited technological infrastructure in many schools, particularly in rural or under-resourced areas. The shift to hybrid learning and the increasing reliance on digital tools for supervision, professional development, and instructional delivery have exposed significant disparities in access to technology (Pratama et al., 2024; Rahayu & Pratama, 2025). The literature emphasizes the need for targeted investments in digital infrastructure, as well as ongoing training for teachers and school leaders in the effective use of technology for teaching and learning (Tan & Ng, 2023). Without such support, the potential benefits of SBM, supervision, and transformational leadership may not be fully realized, particularly in schools serving disadvantaged communities.

The findings of this study also have important implications for educational policy and practice in Indonesia. First, they highlight the need for ongoing professional development for school leaders, particularly in the areas of transformational leadership and instructional supervision. Training programs should focus on equipping principals with the skills needed to provide meaningful, formative feedback, foster collaborative work cultures, and lead organizational change (Leithwood & Sun, 2021; Rahayu & Widodo, 2024). Second, the results underscore the importance of ensuring equitable access to technological infrastructure and resources, especially as SBM and supervision become increasingly dependent on digital tools in the hybrid learning era (Pratama et al., 2024; Tan & Ng, 2023). Third, the findings suggest that national education reforms—such as the Merdeka Curriculum—will be more successful if they are accompanied by efforts to strengthen organizational culture and decentralize management at the school level (Susanti & Pratama, 2023; Bush, 2022).

The study's limitations must also be acknowledged. The use of self-reported questionnaires, despite efforts to minimize bias, may still be subject to social desirability effects. The research was also limited to schools in one urban area, potentially constraining the generalizability of the findings to other regions with different contextual challenges. Future research should consider longitudinal designs, broader geographic sampling, and the inclusion of qualitative data (e.g., interviews, focus groups) to deepen understanding of the mechanisms underlying the observed relationships. Furthermore, exploring the impact of emerging variables—such as digital literacy, teacher resilience, and parental involvement—may provide a more nuanced picture of teacher performance determinants in the evolving Indonesian educational context.

In conclusion, the discussion of this research underscores the centrality of organizational factors—SBM, principal supervision, transformational leadership, and work culture—in shaping teacher performance in Indonesian junior high schools. The findings reinforce the importance of holistic, context-sensitive approaches to school management and provide a foundation for policy interventions aimed at strengthening teacher performance amidst ongoing educational reforms. By addressing the challenges of hierarchical culture, technological disparities, and limited leadership capacity, educational stakeholders can create more supportive and empowering environments for teachers, ultimately enhancing the quality of education in Indonesia (Leithwood & Sun, 2021; Susanti & Pratama, 2023; Rahayu & Widodo, 2024; Pratama et al., 2024; Tan & Ng, 2023).

5. Conclusions

This study concludes that School-Based Management (SBM), principal supervision, transformational leadership, and work culture significantly and positively influence teacher performance in junior high schools in Serang City, Indonesia. The findings demonstrate that these organizational factors, both individually and collectively, contribute substantially to enhancing teachers' pedagogical competence, classroom management, professional development, and social interaction with students and colleagues. The high explanatory power of the regression model (74%) underscores the critical role these variables play in shaping teacher effectiveness within the local educational context. SBM's positive impact on teacher performance is primarily attributed to the autonomy it grants schools in managing resources, curriculum, and personnel. This autonomy empowers teachers by allowing them to adapt instructional methods to local needs, participate in decision-making, and access relevant teaching resources, thereby increasing motivation and instructional quality. However, the study also highlights challenges such as limited managerial training for school principals and uneven resource distribution, which can constrain SBM's effectiveness, especially in under-resourced or rural schools. These findings align with prior research emphasizing that successful SBM implementation requires adequate leadership capacity and infrastructural support (Harris & Jones, 2021; Widodo & Suryani, 2023; Pratama et al., 2024). Principal supervision emerged as a significant determinant of teacher performance, particularly when it adopts a formative, collaborative, and data-driven approach. Effective supervision provides teachers with constructive feedback, professional development opportunities, and instructional guidance, which enhance pedagogical skills and motivation. The integration of technology in supervisory practices further amplifies these benefits, although infrastructural limitations remain a barrier in some schools. The relatively lower perception of supervision quality among teachers suggests a need for enhanced training and a shift from administrative to instructional supervision to maximize its impact (Stronge & Tucker, 2021; Rahayu & Pratama, 2025; Widodo & Suryani, 2023). Transformational leadership was identified as the strongest predictor of teacher performance, reflecting its critical role in inspiring and motivating teachers to innovate and commit to professional growth. Transformational principals foster a shared vision, encourage intellectual stimulation, and provide individualized support, which are essential for adapting to curricular reforms and hybrid learning models in the post-pandemic era. Nonetheless, hierarchical cultural norms and administrative burdens may limit principals' capacity to fully exercise transformational leadership, indicating the need for leadership development programs tailored to local contexts (Leithwood & Sun, 2021; Susanti & Pratama, 2023; Pratama et al., 2024). Work culture, characterized by collaboration, innovation, and supportive interpersonal relationships, also significantly enhances teacher performance. A positive work culture facilitates knowledge sharing, adoption of new technologies, and job satisfaction, all of which contribute to improved teaching effectiveness. However, entrenched hierarchical norms can impede the development of such cultures, underscoring the importance of cultural change initiatives alongside organizational reforms (Schein & Schein, 2021; Rahayu & Widodo, 2024). The synergistic effect of these four variables suggests that holistic approaches to school management are essential for sustainable improvements in teacher performance. Policies and interventions should therefore integrate SBM, effective supervision, transformational leadership, and supportive work cultures to create enabling environments for teachers. Addressing challenges such as hierarchical resistance, technological disparities, and leadership capacity gaps is crucial to realizing the full potential of these organizational factors. While this study provides valuable insights, its limitations include reliance on self-reported data and focus on a single urban area, which

may affect generalizability. Future research should employ longitudinal and mixed-method designs across diverse settings to deepen understanding of these dynamics. Additionally, exploring emerging factors such as digital literacy and parental involvement could further enrich the knowledge base on teacher performance enhancement. In conclusion, this research affirms that empowering schools through SBM, fostering effective supervision, cultivating transformational leadership, and nurturing positive work cultures are pivotal strategies for enhancing teacher performance in Indonesia's evolving educational landscape. These findings offer a robust foundation for policymakers, school leaders, and educators aiming to improve educational quality and student outcomes in the context of ongoing reforms and digital transformation.

Recommendations

Based on the findings and analysis of this study, several key recommendations are proposed to enhance teacher performance through the effective implementation of School-Based Management (SBM), principal supervision, transformational leadership, and work culture in junior high schools in Serang City, Indonesia.

First, it is essential for educational policymakers and school authorities to strengthen the capacity of school principals and management teams in implementing SBM effectively. This includes providing comprehensive managerial training focused on financial management, resource allocation, curriculum adaptation, and stakeholder engagement. Given that SBM autonomy positively influences teacher performance by empowering schools to tailor decisions to local needs, enhancing principals' competencies will ensure that this autonomy translates into improved teaching quality and school outcomes. Additionally, efforts should be made to ensure transparency and accountability in the management of school operational funds (BOS), as effective financial management supports the provision of adequate teaching resources and professional development opportunities.

Second, the role of principal supervision must be reoriented from predominantly administrative oversight to a more formative, collaborative, and instructional leadership approach. Principals should be trained to conduct regular classroom observations, provide constructive pedagogical feedback, and facilitate ongoing professional development tailored to teachers' needs. Integrating technology into supervisory practices—such as using digital platforms for classroom observation and feedback—can enhance the efficiency and effectiveness of supervision, especially in the context of hybrid learning models. However, infrastructural challenges, particularly in under-resourced schools, must be addressed to enable equitable access to such technological tools.

Third, fostering transformational leadership within school leadership is critical. School leaders should be encouraged and supported to develop visionary leadership skills that inspire and motivate teachers, stimulate intellectual engagement, and provide individualized support. Leadership development programs should emphasize the importance of creating a shared vision aligned with educational reforms like the Merdeka Curriculum and adapting leadership styles to local cultural contexts to overcome hierarchical barriers. By cultivating transformational leadership, schools can enhance teacher motivation, innovation, and commitment, which are vital for adapting to evolving pedagogical demands.

Fourth, cultivating a positive and collaborative work culture is indispensable for sustaining improvements in teacher performance. Schools should promote norms of collegiality, open communication, and shared responsibility among teachers and staff. Initiatives to build professional learning communities and encourage the adoption of innovative teaching practices, including technology integration, will strengthen this culture. Addressing hierarchical and traditional norms that inhibit collaboration is necessary to create an inclusive environment conducive to continuous professional growth and job satisfaction.

Finally, these organizational improvements should be supported by targeted investments in technological infrastructure and digital literacy training for both teachers and school leaders. Ensuring reliable internet access and providing resources for effective use of educational technologies will facilitate the implementation of SBM, supervision, leadership, and collaborative work culture in the digital era.

In summary, a holistic approach that integrates capacity building in SBM, instructional supervision, transformational leadership, and work culture development—supported by adequate technological infrastructure—is recommended to enhance teacher performance in Serang City. Such an approach aligns with national education reforms and

addresses local contextual challenges, ultimately contributing to improved educational quality and student outcomes.

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