

Empowering School Quality: The Impact of Principals' Managerial Skills and School Culture in Public Elementary Schools

Ambar Sekti¹, Soedjono², Aryo Andri Nugroho³

¹ Universitas PGRI Semarang, Indonesia; ambarsekti@gmail.com

² Universitas PGRI Semarang, Indonesia; soedjono@upgris.ac.id

³ Universitas PGRI Semarang, Indonesia; aryoandri@upgris.ac.id

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ABSTRACT

Improving school quality remains a critical challenge in elementary education, particularly in rural and semi-urban contexts where leadership capacity and organizational conditions vary considerably. Previous studies have highlighted the importance of principals' managerial skills and school culture; however, limited research has examined their combined influence on school quality within an integrated theoretical framework. This study employed a quantitative ex-post facto design to examine the relationships among principals' managerial skills, school culture, and school quality in public elementary schools in the Boja District, Kendal Regency. Data were collected from 103 teachers selected through proportional random sampling using a structured Likert-scale questionnaire. Descriptive statistics, simple linear regression, and multiple regression analyses were conducted to assess both individual and combined effects of the independent variables on school quality. The findings indicate that principals' managerial skills have a significant positive relationship with school quality ($R^2 = 0.535$), as does school culture ($R^2 = 0.526$). When examined simultaneously, principals' managerial skills and school culture jointly explain 70.3% of the variance in school quality, indicating a strong and complementary association between leadership capacity and organizational culture. These results suggest that principals' managerial skills contribute to school quality not only directly but also through the development of a positive school culture that supports effective teaching and learning. The study underscores the importance of integrated leadership and cultural development strategies in improving school quality, particularly in resource-limited educational contexts.

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Corresponding Author:

Ambar Sekti

Universitas PGRI Semarang, Indonesia; ambarsekti@gmail.com

1. INTRODUCTION

Improving school quality remains a persistent challenge in educational systems worldwide, particularly in developing countries where disparities in leadership capacity, organizational culture, and resource distribution continue to affect educational outcomes. In Indonesia, improving the quality of basic

education has become a national priority, as reflected in recent reforms such as the National Assessment policy, which emphasizes literacy, numeracy, and character development as core indicators of school performance (Hasanah et al., 2021). Nevertheless, many public elementary schools—especially those located in rural and semi-urban areas—still experience uneven quality, weak institutional performance, and limited instructional effectiveness.

School quality is widely conceptualized as a multidimensional construct comprising inputs, processes, and outputs. Inputs include human resources, curriculum, and infrastructure; processes involve instructional practices, leadership, and school management; while outputs are reflected in students' academic and non-academic achievements (Barrett et al., 2019; Sallis, 2005). Research increasingly emphasizes that improvements in school quality cannot be achieved solely through material inputs, but depend heavily on internal organizational factors, particularly school leadership and the institutional culture that shapes daily practices within schools (DiPaola & Hoy, 2015).

Among leadership-related factors, principals' managerial skills have been consistently identified as a key determinant of school effectiveness. Managerial skills refer to principals' abilities to plan, organize, lead, and control school resources in order to achieve educational goals (Daud, 2023). Principals who demonstrate strong managerial competence are more likely to ensure effective instructional supervision, coordinated school programs, and professional collaboration among teachers (Amanchukwu et al., 2015; Kaso et al., 2021). Empirical studies have shown that principals' managerial skills are positively associated with teacher performance, instructional quality, and overall school outcomes (Gamala & Marpa, 2022; Laela et al., 2023).

However, much of the existing literature treats principals' managerial skills as having a direct and linear effect on school quality. Such an approach tends to overlook the organizational processes through which leadership practices influence school outcomes. Contemporary leadership theories suggest that principals do not exert influence solely through formal authority or administrative control, but also by shaping the social and cultural environment of the school (Stronge, 2011; Soto-Pérez et al., 2020). This perspective highlights the importance of examining school culture as a critical organizational mechanism linking leadership practices to educational quality.

School culture refers to the shared values, norms, beliefs, and behavioral expectations that guide interactions among members of the school community (Olivier, 2001; Peterson & Deal, 2002). A positive school culture fosters trust, collaboration, discipline, and commitment to shared goals, thereby creating conditions that support effective teaching and learning (Ohlson et al., 2016; Sarmini et al., 2023). Empirical evidence suggests that schools characterized by strong and positive cultures tend to exhibit higher levels of teacher motivation, student engagement, and institutional effectiveness (Soria-García & Martínez-Lorente, 2020; Taajamo et al., 2023).

Despite the recognized importance of school culture, many studies examine it as an independent predictor of school quality rather than as an organizational context that is actively shaped by school leadership. From a theoretical standpoint, leadership and organizational culture are deeply interconnected. Organizational culture theory suggests that leaders play a central role in creating, reinforcing, and transforming cultural norms through their managerial actions, decision-making patterns, and interactions with staff (Schein, as cited in Mazur, 2015). In educational settings, principals' managerial skills may influence school quality indirectly by fostering a culture of professionalism, accountability, and continuous improvement.

This theoretical linkage is particularly relevant in rural and semi-urban educational contexts. Supervisory reports from districts such as Boja, Kendal Regency, indicate that weaknesses in principals' managerial practices are often accompanied by fragile school cultures, manifested in low work discipline, limited instructional supervision, and inconsistent adherence to school regulations. Such conditions suggest that managerial leadership and school culture function as mutually reinforcing factors in shaping school quality, rather than as isolated influences.

Despite this theoretical relevance, empirical studies that simultaneously examine principals' managerial skills, school culture, and school quality within a unified analytical framework remain limited,

particularly in elementary school settings in rural and semi-urban areas. Most existing studies focus either on leadership or culture as separate determinants of school quality, leaving a gap in understanding how these factors interact to influence educational outcomes (Anwar et al., 2023; Mustajab et al., 2023).

Accordingly, this study seeks to address this gap by examining the influence of principals' managerial skills and school culture on the quality of public elementary schools in the Boja District. By analyzing both the individual and combined effects of these variables, this research adopts an integrated perspective that recognizes leadership and organizational culture as interconnected dimensions of school effectiveness. The findings are expected to contribute theoretically by strengthening models of educational management that emphasize the interaction between leadership practices and institutional culture, and practically by informing policymakers and school leaders about the importance of developing managerial competence alongside efforts to cultivate positive school cultures.

2. METHODS

2.1 Research Design

This study employed a quantitative, non-experimental ex-post facto research design to examine the relationships among principals' managerial skills, school culture, and school quality in public elementary schools. An ex-post facto approach was considered appropriate because the variables under investigation were naturally occurring and could not be manipulated by the researcher (Hartono, 2019). This design allows for the identification of associative patterns and explanatory relationships among variables within real educational settings.

The study was grounded in an organizational and educational leadership framework that conceptualizes school quality as an outcome influenced by leadership practices and institutional context. In this framework, principals' managerial skills represent a leadership capacity variable, while school culture functions as an organizational condition through which leadership practices may shape school outcomes. Although this study does not employ a full mediation model, school culture is analytically positioned as an intervening organizational mechanism that complements the influence of managerial leadership on school quality.

2.2 Research Setting and Context

The research was conducted in the Boja District, Kendal Regency, a semi-rural area characterized by heterogeneous school conditions, varying leadership capacities, and limited educational resources. Such contextual characteristics make Boja District a relevant setting for examining how internal school factors—particularly leadership and culture—contribute to school quality. Data collection took place between September 2024 and March 2025 across public elementary schools in the district.

2.3 Population and Sample

The population of this study comprised all teachers working in public elementary schools in the Boja District, totaling 138 teachers. Using Slovin's formula with a 5% margin of error, a sample size of 103 teachers was determined. The sample was selected through proportional random sampling to ensure fair representation of teachers from different schools and grade levels.

Teachers were selected as respondents because they interact directly with principals' managerial practices and experience the school culture on a daily basis, making them well-positioned to provide informed perceptions regarding leadership, organizational climate, and school quality.

2.4 Research Variables and Operational Definitions

This study involved two independent variables and one dependent variable:

1. Principals' Managerial Skills (X_1)

Principals' managerial skills refer to the ability of school principals to plan, organize, lead, and control school resources effectively. This variable was operationalized through indicators related

to program planning, organizational coordination, instructional supervision, decision-making, and resource management.

2. School Culture (X_2)

School culture refers to the shared values, norms, beliefs, and behavioral patterns that characterize daily interactions within the school community. Indicators included discipline, collaboration among teachers, commitment to school rules, shared responsibility, and support for teaching and learning activities.

3. School Quality (Y)

School quality was conceptualized as a multidimensional construct encompassing:

- a. Input: teacher competence, curriculum readiness, and infrastructure adequacy
- b. Process: instructional implementation, academic supervision, and school program management
- c. Output: students' academic and non-academic achievements

2.5 Data Collection Instrument

Data were collected using a structured, closed-ended questionnaire based on a five-point Likert scale, ranging from strongly disagree (1) to strongly agree (5). The questionnaire was developed based on relevant literature on educational leadership, organizational culture, and school quality.

Prior to data collection, the instrument underwent validity and reliability testing. Content validity was ensured through expert judgment, while construct validity was examined using item-total correlation analysis. Reliability was assessed using Cronbach's alpha coefficient, with all variables demonstrating acceptable reliability levels ($\alpha > 0.70$), indicating internal consistency of the measurement scales.

2.6 Data Analysis Techniques

Data analysis was conducted using descriptive and inferential statistical techniques. Preliminary assumption tests—including normality, multicollinearity, heteroscedasticity, and linearity tests—were performed to ensure the suitability of the data for regression analysis.

To address the research objectives, the following analyses were conducted:

1. Simple Linear Regression Analysis

Simple regression analyses were used to examine:

- a. The effect of principals' managerial skills on school quality, and
- b. The effect of school culture on school quality.

2. Multiple Linear Regression Analysis

Multiple regression analysis was employed to examine the combined influence of principals' managerial skills and school culture on school quality. This analysis allowed for the assessment of the relative contribution of each predictor while controlling for the other.

The regression model was specified as follows:

$$Y = a + b_1X_1 + b_2$$

Where Y represents school quality, X_1 denotes principals' managerial skills, X_2 denotes school culture, a is the constant, and b_1 and b_2 are regression coefficients.

The coefficient of determination (R^2) was used to assess the proportion of variance in school quality explained by the independent variables. While causal inferences were not claimed due to the correlational nature of the design, the results were interpreted as indicative of the explanatory strength of leadership and organizational factors in relation to school quality.

2.7 Ethical Considerations

Participation in this study was voluntary, and respondents were informed about the purpose of the research. Confidentiality and anonymity were ensured by not including identifiable personal information in the questionnaire. Data were used solely for academic research purposes.

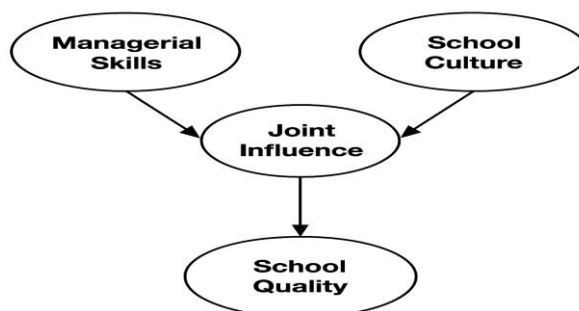


Figure 1. Relationship between the Independent Variables (Managerial Skills and School Culture) and the dependent variable (School Quality)

3. FINDINGS AND DISCUSSION

3.1. Principals’ Managerial Skills as a Foundational Leadership Capacity

Table 1. Correlation between Principals’ Managerial Skills and School Quality

		School Quality
Principals’ Managerial Skills	Pearson Correlation	.732
	Sig. (2-tailed)	.000
	N	103

The Pearson correlation coefficient of 0.732 indicates a strong and statistically significant positive relationship between principals’ managerial skills and school quality. This suggests that more effective managerial practices by school principals are associated with higher quality outcomes in schools.

Table 2. The Contribution of Principals’ Managerial Skills to School Quality

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.732 ^a	.535	.531	8.755

a. Predictors: (Constant), Principals’ managerial skills

The R Square value of 0.535 implies that 53.5% of the variance in school quality can be attributed to principals’ managerial skills, while the remaining 46.5% is influenced by other unexamined factors. This underscores the significant, though not exclusive, role of school leadership in shaping educational quality.

The findings of this study indicate that principals’ managerial skills have a strong and statistically significant association with school quality. This result reinforces the view that effective school leadership is a foundational element in determining how well educational institutions function. Principals who demonstrate strong abilities in planning, organizing, leading, and controlling school resources are better positioned to translate educational policies into coherent school programs and consistent instructional practices.

From a theoretical perspective, this finding aligns with educational leadership theories that emphasize the role of principals as organizational managers rather than merely administrative figures (Amanchukwu et al., 2015; Stronge, 2011). Managerial competence enables principals to coordinate teaching schedules, supervise instructional practices, and ensure that institutional resources are aligned with educational goals. These managerial actions contribute directly to school quality by strengthening instructional processes and improving organizational efficiency.

However, leadership theory also suggests that managerial skills alone do not fully explain variations in school quality. While managerial competence provides structural direction, its effectiveness depends on how leadership practices are internalized and sustained within the school organization. This insight points to the importance of examining organizational conditions that mediate or amplify the influence of leadership, particularly school culture.

3.2. School Culture as an Organizational Mechanism Linking Leadership to Quality

The statistical analysis results indicate that the t-count value for the school culture variable is 10.591, which exceeds the critical t-table value of 1.98373. This comparison ($10.591 > 1.98373$), combined with a significance level of 0.000, is well below the conventional threshold of 0.05. In practical terms, this finding confirms that school culture has a statistically significant and positive influence on the quality of public elementary schools in the Boja District.

Further supporting this conclusion, the results of the coefficient of determination (R Square) test reveal a value of 0.526. This means that school culture alone accounts for 52.6% of the variation in school quality, highlighting its substantial impact. The remaining 47.4% of the variation is attributed to other factors not examined within the scope of this study. These could include variables such as principal leadership, teacher competence, student socio-economic background, infrastructure, or educational policy, which may also play important roles in determining school quality.

The results further demonstrate that school culture has a significant and substantial relationship with school quality. This finding supports organizational culture theory, which posits that shared norms, values, and behavioral expectations play a crucial role in shaping organizational effectiveness (Schein, as cited in Mazur, 2015). In educational settings, a positive school culture fosters professional commitment, collaboration, discipline, and shared responsibility for student learning.

Importantly, school culture should not be understood as an isolated variable independent of leadership. Contemporary leadership scholarship emphasizes that school culture is largely shaped and reinforced by principals' leadership behaviors and managerial practices (DiPaola & Hoy, 2015; Peterson & Deal, 2002). Principals influence school culture through consistent decision-making, clear expectations, supervision practices, and the modeling of professional values. When managerial leadership is coherent and consistent, it creates conditions that encourage trust, collaboration, and accountability among teachers.

The strong association between school culture and school quality observed in this study suggests that organizational norms and shared practices function as an internal mechanism that supports or constrains instructional effectiveness. In schools where positive cultural values are well established, teachers are more likely to demonstrate professional discipline, engage in collaborative practices, and align their instructional efforts with institutional goals. These cultural characteristics, in turn, contribute to higher levels of school quality.

3.3 Leadership, Culture, and School Quality as an Integrated System

The findings of the F-test analysis reveal that the F-count value is 118.124, which is substantially greater than the F-table value of 3.09. Since $118.124 > 3.09$, and the significance level is 0.000. It can be concluded that the overall regression model is statistically significant. This indicates that the independent variables, namely the principal's managerial skills and school culture, when considered

simultaneously, have a meaningful and significant impact on the quality of public elementary schools in the Boja District.

When examined simultaneously, principals' managerial skills and school culture jointly explain a substantial proportion of variance in school quality. This finding provides empirical support for an integrated theoretical model in which leadership and culture function as interconnected dimensions of school effectiveness rather than as separate or competing influences.

From this integrated perspective, principals' managerial skills can be understood as a primary driving force that shapes the organizational environment, while school culture represents the institutionalized expression of leadership practices. Managerial leadership establishes structures, routines, and expectations, whereas school culture embeds these practices into shared norms and habitual behaviors. Over time, this interaction creates a stable organizational context that supports consistent teaching practices and continuous school improvement.

This leadership–culture–quality linkage is particularly relevant in rural and semi-urban elementary school contexts such as Boja District. In such settings, external resources may be limited, making internal organizational factors even more critical for sustaining school quality. The findings suggest that improvements in school quality are unlikely to be achieved through leadership training alone if such training does not simultaneously address the development of positive school cultures. Conversely, efforts to strengthen school culture may be ineffective without competent managerial leadership to provide direction and coherence.

3.4 Implications for Educational Leadership Theory

Theoretically, this study contributes to educational management literature by reinforcing the argument that leadership effects on school quality are partly realized through organizational culture. Rather than conceptualizing principals' managerial skills and school culture as independent predictors, this research highlights their complementary and mutually reinforcing roles. This perspective aligns with organizational and distributed leadership theories, which emphasize that leadership effectiveness is embedded within social and cultural contexts.

Although this study does not employ formal mediation analysis, the findings support a conceptual pathway in which principals' managerial skills influence school quality both directly and indirectly through their role in shaping school culture. This conceptualization offers a more nuanced understanding of leadership effectiveness in educational organizations and provides a foundation for future studies employing longitudinal or structural equation modeling approaches to test mediation mechanisms more explicitly.

3.5 Practical and Contextual Implications

From a practical standpoint, the findings underscore the need for integrated school improvement strategies that address both leadership capacity and cultural development. Professional development programs for school principals should go beyond technical management training to include components focused on cultural leadership, such as building trust, fostering collaboration, and reinforcing shared values. Similarly, school improvement initiatives should explicitly target cultural norms related to discipline, professionalism, and instructional commitment.

In the context of public elementary schools in the Boja District, strengthening principals' managerial skills while simultaneously cultivating positive school cultures may provide a sustainable pathway to improving school quality. Such an approach recognizes that school quality is not solely the result of individual leadership competence, but emerges from the interaction between leadership practices and the organizational environment in which they are enacted.

4. CONCLUSION

This study demonstrates that principals' managerial skills and school culture are significantly associated with the quality of public elementary schools in Boja District, with their combined influence

explaining a substantial proportion of variation in school quality. The findings suggest that managerial leadership provides structural direction and organizational coherence, while school culture functions as an internal mechanism that reinforces leadership practices and supports effective teaching and learning processes. Together, these results highlight the importance of viewing school quality as an outcome of the interaction between leadership capacity and institutional culture rather than as the product of isolated factors. Nevertheless, this study is limited by its cross-sectional, correlational design, which restricts causal interpretation, as well as by its reliance on self-reported teacher perceptions and its focus on a single district, which may limit generalizability. Future research is therefore encouraged to adopt longitudinal or mixed-methods designs to examine the dynamic relationships among leadership, school culture, and school quality over time, to employ mediation or structural equation modeling to test causal pathways more rigorously, and to incorporate additional variables—such as teacher competence, student socio-economic background, and parental involvement—to develop a more comprehensive model of school quality improvement.

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