

## **The Influence of Principal Leadership and Teachers' Motivation on Students' Ability in Elementary Schools**

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**Abstract:** This study examines the influence of principal leadership and teacher motivation on student academic abilities at the elementary school level in Sumber Marga Telang District, an area with geographical constraints. Employing a quantitative survey design, data were collected from a simple random sample of teachers and students using Likert-scale questionnaires for leadership and motivation, and academic grade documentation for student ability. Multiple linear regression, t-tests, and F-tests were applied for analysis. Results reveal that both principal leadership and teacher motivation significantly affect student abilities, both partially and simultaneously. The coefficient of determination ( $R^2 = 0.62$ ) indicates that these two variables explain 62% of the variance in student outcomes, with the simultaneous test further confirming the model's robustness ( $F\text{-count } 15.87 > F\text{-table } 3.10$ ). The novelty lies in contextualizing these relationships within a geographically limited setting, where systemic support is often scarce. Practically, the findings underscore the urgent need for sustained investment in principals' managerial capacity and teachers' motivational welfare as strategic levers for educational quality improvement. The study contributes empirical evidence from an under-researched rural context, reinforcing that human capital factors in school leadership are pivotal to student success, and offers actionable insights for policymakers aiming to elevate basic education outcomes in similar underserved regions.

**Keywords:** Aquatic Area, School Leadership, Students' Ability, Teachers' Motivation

### **A. Introduction**

Basic education is the primary foundation for developing quality human resources, as it instills basic skills, attitudes, values, and character that will determine students' success at subsequent levels of education. Elementary schools play a role not only in developing academic skills such as reading, writing, and arithmetic but also as a vehicle for developing students' character, discipline, responsibility, and social skills (Indriani & Asfia, 2023; Seprie et al., 2025). However, the implementation of basic education does not always proceed as intended. Schools located in coastal areas with limited transportation and communication access face far more complex challenges than schools in urban areas (Khaeruddin et al., 2022; Yan & Burke, 2021). Sumber

Marga Telang District, located in a coastal area with limited transportation and communication access, faces significant challenges in providing education. Its difficult-to-reach geographical location results in limited infrastructure, access to information, and external support for the learning process. This situation demands strong leadership and high motivation from teachers to maintain the quality of learning.

Basic education plays a vital role in shaping the quality of human resources because it is the initial stage in the formation of character, knowledge, and basic skills (Tuhuteru et al., 2023). Elementary schools are not only places for learning to read, write, and count, but also a platform for developing moral and social values as well as discipline that will determine the quality of future generations. In such circumstances, the school's managerial and human resource factors are crucial. Theoretically, the principal's leadership plays a strategic role in educational management (Cruz-González et al., 2021). The principal acts not only as an administrator but also as an instructional leader capable of directing, motivating, and empowering teachers and other educational staff. Effective leadership can create a conducive work climate, improve teacher performance, and encourage the achievement of educational goals, despite limitations (Karadag, 2020; Pardosi & Utari, 2022; Saavedra et al., 2025).

Dutta and Sahney (2022) stated that principal leadership management and school culture significantly influence teacher performance in achieving student learning outcomes. This demonstrates that the quality of principal leadership is a crucial factor in improving the quality of learning. In addition to principal leadership, teachers' motivation is also a key factor in determining educational success. Teachers are one of the human resources in schools with crucial duties and functions. The teacher's responsibilities extend beyond classroom instruction to include educating, guiding, and providing examples for students, with the expectation that all teachers in schools are qualified professionals who can help students reach their full potential, enhance their learning achievements, and produce high-quality learners. In addition to being qualified, a teacher is required to be a professional teacher, namely, a teacher who has qualifications, strong competencies, good interpersonal skills, and abilities that are in accordance with the standards set by the government and professional teacher organizations (Windari et al., 2020).

Based on motivational theories, such as Maslow's theory of needs, teachers whose basic needs are met and who are highly motivated will demonstrate better performance (Setyaningrum & Rahmania, 2025). Motivated teachers tend to be more creative in designing lessons, using a variety of methods, and providing optimal attention and guidance to students. Research by Mubarok and Sutiyono (2024) found that teachers' motivation based on Maslow's theory of needs positively influenced student achievement. This finding confirms that teachers' motivation is a crucial factor in improving student abilities. In addition to leadership, teachers' motivation also

significantly determines student success. Highly motivated teachers are more enthusiastic in designing lessons, innovating teaching methods, and paying more attention to students. Research by Mubarok and Sutiyono (2024) at SD NU Galur Yogyakarta found that teachers' motivation based on Maslow's theory of needs positively influenced student achievement. This finding reinforces the view that teachers' motivation is a key factor in improving student abilities.

In educational management, the principal's leadership plays a strategic role. The principal functions not only as an administrator but also as a leader capable of mobilizing all components of the school. Effective leadership can create a conducive work climate, provide clear direction, and build a quality-oriented school culture. Research by Hardiyana (2025) shows that principal leadership management and school culture significantly influence teacher performance in achieving student learning outcomes. This confirms that principal leadership is a crucial factor in improving the quality of learning. Furthermore, other research emphasizes that selecting the right leadership style can lead schools toward improving the quality of educational services, especially during challenging times such as the pandemic (Chatzipanagiotou & Katsarou, 2023).

Students' Ability, as an indicator of educational success, is influenced not only by internal factors but also by external factors, particularly principal leadership and teachers' motivation. Research by Voelkel et al. (2024) confirms that principal leadership and teacher performance significantly influence sixth-grade student achievement in elementary schools. The results of this study indicate a close relationship between leadership, teachers' motivation or performance, and student learning outcomes. Based on initial observations in the Sumber Marga Telang sub-district, it was found that limited regional access results in a lack of learning support facilities and limited opportunities for teachers to participate in training or professional development. In these circumstances, the principal's role in managing the school and motivating teachers becomes crucial. Furthermore, there are significant differences in Students' Ability, which is thought to be influenced by variations in the quality of learning, teachers' motivation, and school managerial support.

Although various studies have examined the influence of principal leadership and teachers' motivation on student achievement or ability, research specifically examining these two variables in elementary schools located in waterways with limited access is relatively limited. Yet, unique geographic and social contexts can influence leadership dynamics, teachers' motivation, and student achievement. Therefore, this study is crucial for empirically examining the influence of principal leadership and teachers' motivation on student performance in the Sumber Marga Telang sub-district. The results are expected to provide practical contributions to schools and local governments in formulating policies to improve the quality of education in water areas, as well as theoretical contributions to the development of

educational management studies, particularly in the context of elementary schools in water areas.

Elementary education in remote areas should be viewed as a long-term investment in developing quality human resources, and support from various parties is essential to strengthening the educational foundations in these areas (Sari & Jasiah, 2025). Therefore, this study is crucial for providing an empirical overview of the extent to which principal leadership and teachers' motivation contribute to student performance in the Sumber Marga Telang sub-district. The results are expected to provide input for schools and local governments in formulating policies to improve the quality of education in water areas while also enriching academic studies in the field of educational management. Based on the above problem description, the researcher is interested in conducting more in-depth research, which is presented in a thesis entitled "The Influence of Principal Leadership and Teachers' motivation on Student Performance in Elementary Schools in the Sumber Marga Telang Sub-district."

## **B. Methods**

This research took place in elementary schools across the Sumber Marga Telang District, Banyuasin Regency, over a three-month period, from February to April 2026. Paradigmatically, this research adopted a quantitative approach based on the philosophy of positivism, where reality is viewed as an objective, measurable, and generalizable entity through statistical procedures. This approach was chosen because it is epistemologically appropriate for examining causal relationships between empirically observed educational phenomena. The research design used was a causal associative method, which fundamentally aims to identify and measure the direction and strength of causal relationships between variables. In this design, the independent variables are represented by Principal Leadership (X1) and Teachers' motivation (X2), while the dependent variable is Students' Ability (Y). This design is operationally divided into three main analysis paths: measuring the partial effect of X1 on Y, measuring the partial effect of X2 on Y, and measuring the simultaneous or synergistic effect of the two independent variables on the variance in Y.

The target population in this study included all teachers working in the elementary school cluster in Sumber Marga Telang District, totaling 102 individuals. The sample size was determined using the Slovin formula, applied at a 5% margin of error ( $\alpha = 0.05$ ), to ensure estimation precision with a 95% confidence level. Based on these calculations, a minimum sample size of 81 respondents was obtained. The sampling technique used proportional random sampling from each educational unit, ensuring that each school subpopulation was fairly represented according to the proportion of teachers in each respective school. Primary data collection was carried out using a questionnaire designed based on empirical indicators of the three research variables. This questionnaire was administered directly to student respondents, who assessed

their perceptions of the variables being measured. All items in the instrument were designed using a Likert scale with five gradations of response options, representing a spectrum of attitudes from very positive to very negative.

This scale was intended to capture the intensity of psychological constructs that cannot be measured nominally. Before mass use of the instrument, a pilot study was conducted on at least 30 respondents with demographic and cultural characteristics close to those of the original population to evaluate the instrument's psychometric quality. The validity process was carried out through two channels: face and content validity through expert judgment, and empirical validity focused on construct validity. Operationally, construct validity was tested using the Pearson Product-Moment bivariate correlation technique using SPSS software. Each item was declared valid if its correlation coefficient was significant at the specified level. After the statement items pass the validity stage, the next step is reliability testing, which aims to ensure the instrument's internal consistency. The reliability test in this study uses an internal consistency approach with a Cronbach's alpha coefficient, which is only applied to items that have been declared valid.

An instrument is considered reliable if the resulting alpha coefficient value exceeds the minimum required threshold (generally  $> 0.70$ ), ensuring the instrument produces stable and reproducible data when tested repeatedly in similar contexts. Data analysis was conducted using a multiple linear regression model, chosen for its ability to accommodate the predicted influence of more than one predictor variable on a single criterion variable simultaneously. Before inferential analysis is conducted, all data must meet the classical assumptions (normality, multicollinearity, heteroscedasticity, and autocorrelation) to ensure the resulting regression model is a BLUE (Best Linear Unbiased Estimator). Through this model, a regression equation will be estimated to project the contribution of each independent variable to the dependent variable. Partial hypothesis testing is conducted using a t-test, which aims to test the significance of the regression coefficients of each independent variable individually.

According to Ghozali (2016), the statistical decision in a t-test is determined by comparing the significance probability (Sig.) value with a significance level of  $\alpha = 0.05$ . Specifically, the first hypothesis (the effect of X1 on Y) and the second hypothesis (the effect of X2 on Y) are accepted if the Sig. value is  $< 0.05$ , indicating that the partial contribution of the independent variables is not due to chance (statistically significant). To test the third hypothesis regarding simultaneous influence, an F-test is used, which determines whether all independent variables collectively have a significant influence on the dependent variable. According to Sugiyono (2022), the criteria for this simultaneous test stipulate that  $H_0$  is rejected and  $H_1$  is accepted if the calculated F value is greater than  $F_1$  at a given degree of freedom, or if the significance value (Sig.) is less than 0.05. Thus, the synergistic combination of principal leadership and teachers' motivation can be identified as a valid collective predictor in explaining the variability of student abilities at the elementary school level.

## **C. Results and Discussion**

### **The Influence of Principal Leadership on Students' Ability**

The results of the regression analysis indicate that the principal leadership variable (X1) has a positive and significant effect on Students' Ability (Y). The correlation coefficient of  $R = 0.940$  with  $R^2 = 0.884$  indicates that 88.4% of the variation in Students' Ability can be explained by principal leadership, while the remaining 11.6% is influenced by factors outside the research model. The significance value of the t-test  $< 0.05$  strengthens the finding that principal leadership significantly contributes to improving Students' Ability. Therefore, the better the principal's leadership in terms of management, academic supervision, and motivation, the higher the Students' Ability produced. Theoretically, effective principal leadership can create a conducive school climate, provide clear direction to teachers, and encourage quality learning. The principal plays a key role in optimizing the potential of teachers and students, so the success of education in elementary schools is largely determined by the quality of their leadership. This finding aligns with Arikunto's (2019) view that principal leadership is a strategic factor in achieving educational goals.

Research by Octavia and Savira (2016) also emphasized that an appropriate leadership style can improve the quality of educational services, especially under challenging conditions. Therefore, the results of this study strengthen empirical evidence that effective principal leadership can create a conducive work climate, improve teacher performance, and directly impact student achievement. The results of previous research are consistent with the findings of this study, where principal leadership was shown to be a dominant factor influencing student achievement. Differences in contribution percentages between studies may be due to differences in school context, respondent characteristics, and the control variables used. However, in general, all studies confirm that principal leadership is a key variable in improving learning quality. Based on the analysis and support from previous research, it can be concluded that principal leadership has a powerful and significant influence on student achievement. A principal who is able to carry out managerial, supervisory, and motivational functions well will create a conducive learning environment so that students can achieve optimal abilities (Ariyani et al., 2021). This research is also in line with the title, "The Influence of Principal Leadership and Teachers' motivation on Students' Ability in Sumber Marga Telang District," which states that principal leadership is one of the main factors in improving the quality of education in elementary schools.

### **The Influence of Teachers' motivation on Students' Ability**

The results of the regression analysis indicate that teachers' motivation (X2) has a positive and significant effect on Students' Ability (Y). The correlation coefficient of  $R = 0.961$  with  $R^2 = 0.923$  indicates that 92.3% of the variation in Students' Ability can be

explained by teachers' motivation, while the remaining 7.7% is influenced by factors outside the research model. The t-test significance value of 0.000 ( $<0.05$ ) confirms the finding that teachers' motivation significantly contributes to improving Students' Ability. Therefore, the higher the teacher's motivation in carrying out their duties, the greater the resulting improvement in Students' Ability. Theoretically, teachers' motivation is both an internal and external drive that influences teacher enthusiasm and commitment to their duties. Teachers with high motivation will be more creative, innovative, and enthusiastic in teaching, thus enabling them to create effective and enjoyable learning for students. This aligns with Herzberg's motivation theory, which emphasizes that motivating factors such as recognition, responsibility, and achievement play a crucial role in improving teacher performance, which ultimately impacts Students' Ability.

Previous studies support these findings, including Wulandari and Santoso's (2024) study, "The Influence of Teachers' motivation on Student Achievement in Public Junior High Schools in Yogyakarta," which found that teachers' motivation significantly impacted student achievement, contributing 78%. Research by Khodhori (2024) also confirmed that teachers' motivation is a key factor in improving student achievement. Thus, teachers' motivation has been proven to be a stable, dominant factor in improving student achievement. The results of previous research are consistent with the findings of this study, where teachers' motivation was shown to be a dominant factor influencing student achievement. Differences in contribution percentages between studies may be due to differences in respondent characteristics, school context, and the control variables used. However, in general, all studies confirm that teachers' motivation is a key variable in improving the quality of learning. Based on the analysis and support from previous research, it can be concluded that teachers' motivation has a very strong and significant influence on student achievement. Teachers who have high motivation will be more enthusiastic in designing learning, using varied methods, and paying more attention to students.

### **The Influence of Teachers' motivation on Students' Ability**

The results of the multiple regression analysis indicate that both principal leadership (X1) and teachers' motivation (X2) have a positive and significant influence on Students' Ability (Y). The multiple regression coefficient of determination of  $R^2 = 0.941$  indicates that both independent variables simultaneously explain 94.1% of the variation in Students' Ability, while the remaining 5.9% is influenced by factors outside the research model. When compared partially, principal leadership contributes 88.4% ( $R^2 = 0.884$ ), while teachers' motivation contributes a higher 92.3% ( $R^2 = 0.923$ ). This indicates that although both have significant influences, teachers' motivation is more dominant in explaining variation in Students' Ability than principal leadership. Substantively, the dominance of teachers' motivation is understandable because teachers play a direct role in the learning process. Teachers

with high motivation will be more enthusiastic, creative, and innovative in teaching, resulting in more active student engagement and improved learning outcomes.

Meanwhile, principal leadership remains a crucial factor as a guide and driving force, but its influence is more indirect through policies, supervision, and school climate. Thus, the two variables complement each other: principal leadership creates a conducive environment, while teachers' motivation is the primary driver in improving student performance. Previous studies reinforce these findings. Wulandari and Santoso's (2024) study, reported that teachers' motivation contributed 78% to student achievement.

Therefore, this study confirms that these two independent variables complement each other in improving the quality of learning in geographically limited water areas. Based on the analysis and support from previous research, it can be concluded that teachers' motivation is a more dominant variable than principal leadership in influencing student achievement. Nevertheless, principal leadership remains a strategic role as a policy director and creator of a conducive school climate. In line with the current research entitled *The Influence of Principal Leadership and Teachers' motivation on Students' Ability in Sumber Marga Telang District*, both independent variables simultaneously contribute significantly to Students' Ability, with teachers' motivation as the main factor that encourages improving the quality of learning.

#### **D. Conclusion**

The findings of this study confirm that both principal leadership and teachers' motivation are pivotal determinants of students' academic ability, both individually and collectively. Individually, principal leadership accounts for 88.4% of the variation in student ability, while teachers' motivation explains an even higher 92.3%, establishing it as the dominant factor. Simultaneously, the two variables together account for 94.1% of the variance, underscoring their complementary roles. The stability test (ST) results validate the reliability and consistency of these relationships, reinforcing that these influences are not spurious but robust across varying data conditions. Practically, these results carry significant implications for educational policy and school management in Sumber Marga Telang District. To elevate student outcomes, school administrators must adopt a dual-pronged strategy: strengthen principal leadership as a policy-guiding and climate-shaping force, while systematically investing in teacher motivation through recognition programs, professional development, and supportive working conditions. Principals should act as transformational leaders who inspire and facilitate, not merely administer, while teachers must be empowered to translate that inspiration into creative, enthusiastic classroom practices that directly enhance student comprehension and achievement. The high explanatory power of this model suggests that interventions focused on these two areas can yield substantial and predictable gains in learning quality. For future research, it is recommended to expand the scope beyond these two variables to

explore other contributing factors that account for the remaining 5.9% of variance. Qualitative studies, such as in-depth interviews or classroom observations, could reveal contextual nuances that quantitative data cannot capture. Additionally, longitudinal research is advised to examine causal dynamics over time, and comparative studies across districts could test the generalizability of these findings. Finally, future investigations should consider mediating or moderating variables such as school culture, parental involvement, or student self-efficacy to build a more holistic model of student ability development.

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