

The Influence of Principal Leadership on the Satisfaction with Early Childhood Education Services Quality

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ABSTRACT

The interactions among teachers, facilities, leadership, and administrative systems influence the quality of educational services. A holistic approach is necessary to understand how morale, cooperation, professional practices, and facility management improve the effectiveness of early childhood education services. This study aims to analyze the effect of school principal leadership on the quality of Early Childhood Education services. The research used a quantitative correlational method with questionnaires administered to 35 respondents. Data were analyzed using SmartPLS through validity, reliability, and t-statistics tests to ensure the instruments' accuracy and the significance of variable relationships. The research findings revealed that school principal leadership (SPL) had a positive and significant impact on service quality (SQ), with an Original Sample of 0.791, a T-statistic of 17.960, and a P-value of 0.000. This indicates that morale, cooperation, active and professional learning, as well as the utilization and maintenance of equipment, play a significant role in creating quality administrative services and optimizing the use of school facilities. In conclusion, SPL significantly influences SQ, suggesting that morale, cooperation, professional learning, leadership, and the use of facilities are crucial in improving administrative service quality and overall school effectiveness.

Keywords: Leadership, School Principal, Service Quality, Early Childhood Education.

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A. INTRODUCTION

Various interrelated dimensions of service quality influence educational service satisfaction. The dimensions of tangibles, reliability, responsiveness, assurance, and empathy play a crucial role in evaluating service quality, which directly impacts satisfaction (Jazari et al., 2023). Efficient administrative services and support also enhance the learning experience (Putra, 2016). An effective academic information system is essential in supporting the learning process (Aldi & Ade Rahma, 2019; Leliana et al., 2025). The educational environment, including access to facilities and the availability of equipment, allows for an optimal learning experience (Dinh et al., 2021). Sports services and physical education contribute to satisfaction through healthy lifestyles and social interactions (Vakhnin et al., 2019).

The quality of teaching and support services is a critical determinant of satisfaction, acting as a key factor in ensuring both material understanding and an optimal learning experience (Lukman et al., 2020). The level of engagement and interaction with instructors, especially in online and blended learning environments, significantly impacts student satisfaction (Al-Khatib et al., 2024). Reliable technical support services are also essential for maintaining the smooth functioning of academic processes in technology-based environments (Jiménez-Bucarey et al., 2021). Cultural and emotional factors influence perceptions of service quality, making inclusive practices that respect diversity important (Matus et al., 2025). Ongoing evaluation and improvement of service quality support satisfaction, loyalty, and the creation of an adaptive, inclusive, and responsive educational environment that meets student needs (Ngo et al., 2025).

Parent satisfaction with Early Childhood Education services is heavily influenced by the interactions between teachers and children, where teacher attention and support are key factors. Parents are more satisfied when teachers can interact well, provide guidance, and meet the emotional needs of the child. Additionally, adequate Early Childhood Education facilities and a safe and comfortable learning environment are important indicators of parent satisfaction (Bassok et al., 2018). Research in Vietnam shows that the quality of facilities has the most significant impact on parent satisfaction (Hoang et al., 2022). Factors such as cost and service accessibility are also important; affordable and easily accessible services increase satisfaction (Hussin et al., 2023). Emotional support from teachers and staff, including the ability to respond to children's needs, strengthens satisfaction, while parents' educational background and income also influence perceptions of service quality (Hu et al., 2018).

In addition to internal factors within Early Childhood Education, geographic context and the child's experience in the service also affect parent satisfaction. Research in Finland shows that parent satisfaction is closely related to how much the child enjoys activities at Early Childhood Education centers (Saranko et al., 2025). In China, no significant differences were found between parent satisfaction in urban and rural areas, but there were regional variations, with parents in the eastern regions reporting higher satisfaction compared to those in central and western areas (Hong et al., 2020; Wang et al., 2023). Improvements in the quality, accessibility, and equity of Early Childhood Education services are considered important strategies for enhancing parent satisfaction, including policies that support universal and affordable services (Hong et al., 2020). Furthermore, communication skills training for Early Childhood Education educators can improve interactions with parents, increase trust, and significantly impact their satisfaction (Almendingen et al., 2022).

The leadership of the Early Childhood Education school principal has a significant influence on teacher job satisfaction and Early Childhood Education service satisfaction. Effective pedagogical leadership can enhance professional collaboration, reduce work-related stress, and support teacher well-being, thereby increasing job satisfaction (Chen & Fan, 2025; Markowitz et al., 2026; Xia et al., 2023). Leadership that builds good relationships and provides emotional support allows teachers to act more independently, contributing to teacher retention and a healthy work environment (Ciuciu, 2024; Downey et al., 2024). Moreover, Early Childhood Education service satisfaction is influenced by the quality of educators, facilities, cost, and institutional reputation, although reputation does not always guarantee it.

parent satisfaction (Chung & Choi, 2018). Good partnerships between schools and parents, as well as parental confidence in child-rearing practices, also improve service satisfaction (Hu et al., 2021). Thus, effective school principal leadership directly and indirectly enhances service quality and stakeholder satisfaction in Early Childhood Education.

This research stems from the gap in previous studies, most of which have focused on the influence of school principal leadership on teacher job satisfaction and Early Childhood Education services, while few have holistically assessed how morale, cooperation, active and professional learning, as well as the utilization and maintenance of school facilities, affect the quality of administrative services and facility usage. The novelty of this study lies in its holistic approach, integrating ethical aspects, collaboration, learning practices, and facility management simultaneously, providing a new perspective on internal school factors that enhance service effectiveness. The aim is to analyze the impact of these factors on the quality of administrative services and the utilization of facilities. The research results are expected to serve as practical guidance for schools to improve services, optimize facilities, and support learning success through the strengthening of morale, cooperation, professional practices, and effective equipment maintenance.

B. RESEARCH METHOD

This study was conducted using a quantitative correlational method at Kuncup Ceria Early Childhood Education in Mojokerto. Data collection was carried out through the distribution of questionnaires to 35 respondents, including 3 teachers, 1 school principal, and 21 parents who were directly involved in the learning activities. Data processing was performed using SmartPLS software version 4.1.1.4, through three main tests. The validity test showed that all items in the questionnaire had good validity, as the loading factor values were greater than 0.7. The reliability test indicated that the research instrument had high consistency, with Cronbach's Alpha and Composite Reliability values above 0.7, which demonstrates reliable reliability. Furthermore, the t-statistic test showed significant results, with t-values greater than 1.96 for all relationships between the variables being tested, indicating that the relationships between the variables can be considered statistically significant. The research questionnaire is outlined as follows:

Table 1. Research Questionnaire

Variable	Indicator	Research Statement
School Principal Leadership (X)	Morale	The principal sets an example of honest and responsible behavior. The principal values ethical principles in their work.
	Collaboration in Tasks	The principal supports collaboration among teachers, staff, and parents.
	Active and Professional Learning	The principal provides guidance to improve teachers' teaching skills. The principal supports the development of teacher performance for improvement.
	Utilization and Maintenance of School Equipment	The principal emphasizes shared responsibility for school facilities. The principal monitors the maintenance of learning tools and facilities.
	Service Quality (Y)	The principal provides clear administrative service information to parents. The principal responds quickly and appropriately to administrative complaints.



School Facilities and Infrastructure	The principal emphasizes the importance of maintaining classrooms and play equipment.
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C. RESULTS AND DISCUSSION

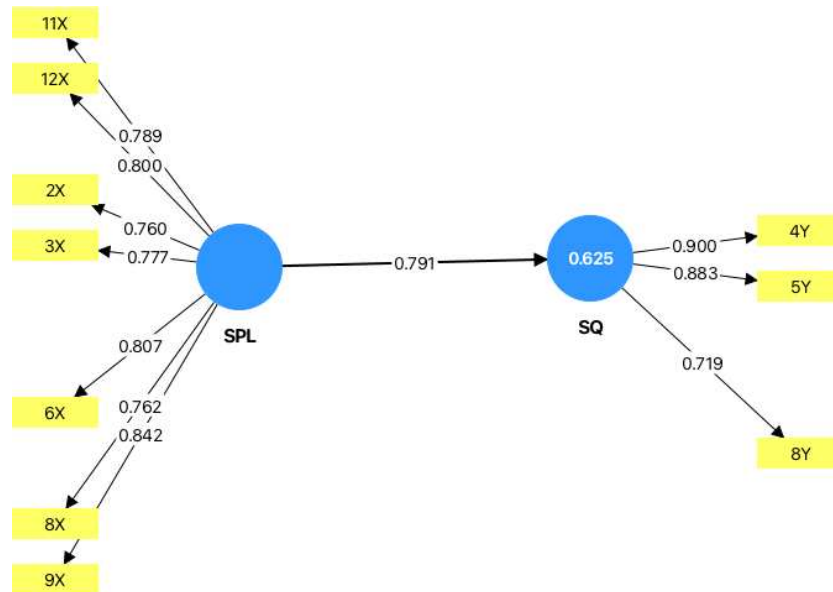


Figure 1. Data Validity Stage 2

1. Descriptive Statistics

Table 2. Descriptive Statistics Results

Name	Mean	Median	Scale min	Scale max	Standard deviation	Excess kurtosis	Skewness
2X	4.400	4.000	4.000	5.000	0.490	-1.932	0.427
3X	4.400	4.000	4.000	5.000	0.490	-1.932	0.427
6X	4.314	4.000	3.000	5.000	0.666	-0.697	-0.479
8X	3.543	4.000	2.000	5.000	0.873	-0.554	-0.272
9X	4.429	5.000	2.000	5.000	0.728	2.077	-1.363
11X	4.229	4.000	2.000	5.000	0.759	0.583	-0.836
12X	3.971	4.000	2.000	5.000	0.878	-0.515	-0.472
4Y	4.286	4.000	2.000	5.000	0.658	2.651	-1.028
5Y	4.086	4.000	2.000	5.000	0.874	-0.149	-0.711
8Y	3.800	4.000	2.000	5.000	1.009	-0.848	-0.447

Table 2 presents the results of the descriptive statistics for several variables coded as 2X, 3X, 6X, 8X, 9X, 11X, 12X, 4Y, 5Y, and 8Y. The table shows the mean, median, scale range, standard deviation, skewness, and kurtosis for each variable. Overall, the mean values range from 3.543 to 4.429, while the median is mostly 4, indicating that the data distribution is generally centred around the midpoint of the scale. The standard deviation varies from 0.490 to 1.009, reflecting different levels of data variation. Skewness and kurtosis suggest that most data distributions are approximately normal, although some variables exhibit more extreme skewness and kurtosis. This analysis helps understand the pattern and distribution of the data.

2. Data Validity

a. Outer loading

Table 3. Outer Loading Results

SPL	SQ
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2X	0.760	
3X	0.777	
6X	0.807	
8X	0.762	
9X	0.842	
11X	0.789	
12X	0.800	
4Y		0.900
5Y		0.883
8Y		0.719

Table 3 presents the results of the outer loading for the indicators of the two constructs, SPL (School Principal Leadership) and SQ (Service Quality). The outer loading indicates how strongly each indicator represents the construct it is measuring. For the SPL construct, the outer loading values range from 0.760 to 0.842, with the 9X indicator showing the highest loading (0.842), indicating the strongest contribution to the SPL construct. For the SQ construct, the outer loading values range from 0.719 to 0.900, with the 4Y indicator showing the highest contribution (0.900). These high outer loading values indicate that all indicators significantly load on their respective constructs and are suitable for further analysis.

b. Average Variance Extracted (AVE)

Tabel 4. AVE Results

Average variance extracted (AVE)	
SPL	0.626
SQ	0.702

Table 4 shows the results of the Average Variance Extracted (AVE) for two constructs, SPL (School Principal Leadership) and SQ (Service Quality). AVE measures the proportion of the variance in the indicators that can be explained by the construct being measured, with a value of ≥ 0.5 considered adequate for convergent validity. In the table, the AVE for SPL is 0.626 and for SQ is 0.702, both of which are greater than 0.5. This indicates that the indicators used sufficiently capture the variance of their respective constructs, meaning that both SPL and SQ have good convergent validity and can be trusted for model analysis. This validity is essential to ensure the strength of the construct measurements in the study.

c. Cros Loading

Table 5. Cross-Loading Results

	SPL	SQ
2X	0.760	0.605
3X	0.777	0.613
6X	0.807	0.693
8X	0.762	0.744
9X	0.842	0.477
11X	0.789	0.580
12X	0.800	0.582
4Y	0.744	0.900
5Y	0.759	0.883
8Y	0.388	0.719

Table 5 presents the cross-loading results for the indicators of the two

constructs, SPL and SQ, used to evaluate discriminant validity. Cross-loading indicates how much an indicator loads on its intended construct compared to other constructs. Ideally, each indicator should have the highest loading on its own construct. From the table, the SPL indicators (2X, 3X, 6X, 8X, 9X, 11X, 12X) have the highest loadings on SPL compared to SQ, while the SQ indicators (4Y, 5Y, 8Y) have the highest loadings on SQ compared to SPL. This shows that the indicators more strongly represent their respective constructs, thus maintaining the discriminant validity of the SPL and SQ constructs.

3. Reliability Data (Cronbach's Alpha and Composite Reliability)

Table 6. Reliability Data Results

	Cronbach's alpha	Composite reliability (rho_a)	Composite reliability (rho_c)
SPL	0.901	0.904	0.921
SQ	0.794	0.857	0.875

Table 6 presents the reliability data results for the SPL and SQ constructs using three measures: Cronbach's alpha, Composite reliability (rho_a), and Composite reliability (rho_c). SPL shows a Cronbach's alpha of 0.901, rho_a of 0.904, and rho_c of 0.921. All of these values are above 0.7, indicating that the SPL construct has high reliability and that its indicators consistently measure the same construct. SQ has a Cronbach's alpha of 0.794, a rho_a of 0.857, and a rho_c of 0.875, all of which exceed the 0.7 threshold, indicating good reliability. Overall, both constructs demonstrate strong internal consistency, ensuring that the measurement results are trustworthy and stable for further analysis.

4. T-Test

Table 7. Significance Test Results

	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics ((O/STDEV))	P values
SPL -> SQ	0.791	0.815	0.044	17.960	0.000

Table 7 presents the results of the path analysis significance test between the SPL → SQ constructs. The Original Sample (O) value of 0.791 indicates the magnitude of the direct effect of SPL on SQ. The standard deviation (0.044) is used to calculate the T-statistics, which results in a value of 17.960. The P value of 0.000 indicates that this relationship is statistically significant at the 0.05 level. In other words, SPL has a positive and significant effect on SQ. Morale, task collaboration, active and professional learning, and the utilization and maintenance of school equipment all have significant impacts on the quality of administrative services and the use of school facilities. Good morale creates an ethical and disciplined environment, while student and staff cooperation ensures tasks are completed effectively. Active and professional learning fosters student participation and effective teaching management by educators, optimizing the teaching and learning process. The maintenance and utilization of school equipment ensure the smooth operation of academic and administrative activities.

Research on the impact of school principal leadership on school service satisfaction shows that positive leadership directly increases teacher job satisfaction, where positive views of the principal correlate with improved job satisfaction and staff retention (Jerrim, 2025). Distributed leadership, which shares leadership responsibilities among staff, has also

been shown to improve teacher job satisfaction by reducing stress, though it may increase administrative burdens if poorly managed (Li et al., 2024). Support from leadership has a small to moderate positive effect on teacher satisfaction (Eryilmaz & Strietholt, 2025). Furthermore, transformational and transactional leadership increases student satisfaction through motivation, rewards, and behaviour management (Pedraja-Rejas et al., 2016). The effectiveness of public school services is also influenced by leadership, especially in countries with high school autonomy (Leininger & Kuhn, 2021). Thus, school principal leadership plays a direct and indirect role in improving service quality, teacher satisfaction, and student satisfaction.

School principal leadership plays a strategic role in determining the direction and quality of education services. Principals are responsible for formulating a clear educational mission and objectives, ensuring alignment between the school's mission and the learning goals to be achieved (Xhomara, 2021). They also manage the educational process through curriculum supervision and teaching practices to meet educational standards, while creating a supportive, collaborative, and conducive academic climate for both teachers and students (Hassan et al., 2019). Teacher professional development becomes a central focus, as teacher competence directly affects student achievement (González, 2024). Principals also require strategic management skills and systemic thinking to implement and promote educational initiatives effectively (Qablan et al., 2023), while balancing their pedagogical role with complex managerial responsibilities (McMahon & Torrance, 2023). Adaptability and the ability to respond to changes in the educational environment are key to success, enabling principals to face external pressures and the evolving dynamics of education (DeMatthews & Kruse, 2024).

The influence of school leadership on student achievement is highly significant. Principals who emphasize teacher accountability and professional development tend to improve academic performance and student well-being (Amatullah et al., 2025; Bellibaş et al., 2025). Additionally, leadership influences teacher readiness and commitment to implementing educational changes, which are important factors for the success of school initiatives (Abdul Aziz et al., 2022). Leadership practices that involve parents, curriculum reforms, and strengthening school culture impact the overall improvement of school quality (Abouelanein & Hossni, 2023; Owen & Won, 2021). However, principals face challenges in balancing their instructional and administrative roles (Noor & Nawab, 2022) and integrating accountability systems without creating excessive bureaucracy (Paletta, 2019). The implementation of distributed leadership, with clear division of responsibilities, can support school improvement, provided that communication and coordination among stakeholders are effective (Nadeem, 2024).

Principal leadership affects the school climate and teacher well-being, which in turn impacts school service satisfaction. Research highlights the importance of leadership strategies, communication, and moral support in improving the quality of education and the satisfaction of all school stakeholders (Marjuki et al., 2025). A visionary leadership style can enhance educational quality through strategic planning, teacher motivation, and school resource management. Studies show that this leadership style directly influences school service satisfaction and creates a conducive learning climate for both students and teachers (Anas et al., 2025). The principal's leadership style and teacher work motivation influence

teacher performance. The results show that effective leadership enhances teacher productivity and school service satisfaction, creating a more conducive learning environment (Zebua et al., 2025). The principal's role in applying school performance to improve educational quality is critical. Strategic leadership and sound management have a direct impact on the quality of school services, teacher satisfaction, and student academic achievement (Amelia & Siahaan, 2025). Principals maximize the use of education funds to support school services. Effective leadership in planning and budget management increases teacher and student satisfaction and supports overall educational quality (Situmeang et al., 2025). Human resource development programs in schools and their impact on staff productivity are also crucial. Principals design and oversee such programs, which have implications for service satisfaction and a better learning climate (Aditya et al., 2025).

D. CONCLUSION

SPL (School Principal Leadership) has a positive and significant impact on SQ (Service Quality), underscoring the role of internal school factors in enhancing administrative service quality and facility utilization. Good morale fosters an ethical, disciplined school culture, encouraging all school members to act responsibly and to respect rules. Collaboration among teachers, staff, and students ensures that both academic and administrative tasks are completed effectively, minimizing errors and improving operational efficiency. Active and professional learning fosters maximal student engagement and supports teachers in managing the teaching and learning process, thereby ensuring optimal achievement of learning objectives. The utilization and maintenance of school equipment ensure smooth academic and administrative activities and guarantee sustainable use of facilities. Furthermore, the school principal's leadership contributes significantly to school service satisfaction. Positive leadership enhances teacher motivation, commitment, and staff retention, while distributed leadership encourages collaboration and reduces work stress. Support from the principal, both emotional and professional, strengthens teacher job satisfaction. Transformational and transactional leadership styles increase student satisfaction by motivating students, offering rewards, and managing behaviour. The effectiveness of school public services is higher in environments with adequate autonomy, meaning that school principal leadership, both directly and indirectly, strengthens service quality, teacher satisfaction, and student satisfaction. These findings highlight the importance of integrating ethics, collaboration, professional learning, and facility management in create an effective, high-quality school.

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I want to express my deepest gratitude to all parties who have supported and contributed to this research. The results of the study indicate that SPL (Service Management System) has a positive and significant effect on the service quality (SQ) in schools. This emphasizes that internal school factors, such as morale, ethical culture, and discipline, play a crucial role in improving administrative quality and the utilization of facilities. Collaboration among teachers, staff, and students is essential in ensuring that academic and administrative tasks are carried out effectively. Additionally, the leadership of the school principal, in both transformational and transactional forms, has been shown to enhance teacher motivation, job satisfaction, and student satisfaction. This research also underscores the importance of collaboration, professional learning, and

sustainable facility management in creating an effective, high-quality school. Thank you for the opportunity and support provided in completing this research.

AUTHOR CONTRIBUTIONS

- Author 1 : Developed and validated the service quality (SQ) measurement instrument through a questionnaire, ensuring its reliability and validity in the school context.
- Author 2 : Tested the instrument in the field, provided feedback on the measurements, and adjusted the instrument to make it more relevant to the educational context.
- Author 3 : Applied advanced statistical analysis methods, such as SEM (Structural Equation Modelling), to examine relationships between variables and ensure accurate and accountable data.
- Author 4 : Conducted in-depth interviews to explore perceptions of morality, culture, and social dynamics at the school, providing rich contextual insights.
- Author 5 : Applied participatory observation to understand social and cultural interactions at the school and their contributions to service quality and satisfaction.

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