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The Influence of Leadership Style, Motivation, and Work Environment on Teacher Performance

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ABSTRACT

Background and Objective: This study addresses critical learning losses in Indonesian early childhood education (PAUD) following the COVID-19 pandemic, exacerbated by a 25% teacher turnover rate in private institutions. The research examines the direct and indirect effects of school principals' transformational leadership style, teacher work motivation, and work environment on overall teacher performance in private kindergartens, with motivation hypothesised as a mediating mechanism. Method: A quantitative correlational survey design was employed across 26 private kindergartens in Cibinong, Bogor Regency, Indonesia. The study population comprised 169 permanent foundation teachers, and the final sample of 119 respondents was determined using Slovin's formula (e = 0.05) and proportional random sampling. Data were collected using validated 5-point Likert-scale questionnaires measuring four constructs: teacher performance (36 items), leadership style (36 items), work motivation based on Maslow's hierarchy (36 items), and work environment—both physical and non-physical aspects (36 items). All instruments demonstrated high reliability (Cronbach's Alpha >0.97). Data analysis employed descriptive statistics, classical assumption testing, multiple regression analysis, path analysis with Sobel testing for indirect effects, and SITOREM (Scientific Iterative Tabulation-Oriented Educational Recommendation Method) for prioritised intervention recommendations. SPSS version 26 was used for all statistical analyses. Results: The path analysis model explained 79.6% of the variance in teacher performance (R^2=0.796). Work motivation exhibited the strongest direct effect ($\beta y2$=0.492, $p<0.001$), followed by principal leadership style ($\beta y1$=0.284, $p<0.001$) and work environment ($\beta y3$=0.215, $p=0.002$). Work motivation significantly mediated both the leadership effect (indirect path $\beta y12$=0.142, $p<0.001$) and environmental effect (indirect path $\beta y32$=0.117, $p<0.001$), confirming its central role in performance outcomes. SITOREM analysis identified three priority interventions: a 50% increase in teacher honoraria to address physiological and self-actualisation gaps; transformational leadership training to strengthen team development and communication; and non-physical environmental improvements, including career counselling and organisational culture development, to reduce turnover.

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1. INTRODUCTION

Early childhood education has faced unprecedented global challenges in the wake of the COVID-19 pandemic, with profound implications for children's developmental trajectories and learning outcomes. Learning losses averaged 0.57 standard deviations in cognitive abilities across 140 countries, representing one of the most severe educational disruptions in modern history [1]. The abrupt transition to online learning led to a 20-30% decrease in teaching effectiveness among European preschool teachers, while children aged 4-6 years experienced regressions of up to 15% in social-emotional development [2]. Recent longitudinal evidence from the United States revealed that pandemic-affected cohorts of preschool children demonstrated significant disadvantages in early mathematics, social-emotional competence, and executive functioning skills, with gaps ranging between 11 and 18 percentage points compared to pre-pandemic peers. These disruptions emerged late and intensified over time, particularly affecting unconstrained literacy skills, such as comprehension, rather than constrained skills, such as phonics [3]. The global economic impact of long-term productivity losses is estimated at 17 trillion USD, underscoring the urgent need for targeted interventions to mitigate learning deficits in the foundational years of education [4].

The theoretical foundations for understanding pandemic-related disruptions draw on Vygotsky's zone of proximal development, which emphasises the critical role of social interaction and guided learning in early childhood, both of which are severely compromised by online isolation and physical distancing measures [5]. Contemporary self-determination theory posits that teacher autonomy, competence, and relatedness declined substantially during the pandemic, leading to demotivation in approximately 40 per cent of early childhood educators and to fundamental alterations in the instructional environment required for optimal child development. This evolution in educational thinking has shifted from traditional behaviourist approaches to social constructivism, recognising that young children are particularly vulnerable to disrupted learning environments, as they often do not respond effectively to online instruction during critical periods of social, cognitive, and intellectual development [6]. Specific learning losses, manifested in declines of up to 22 per cent in receptive language skills among 5-year-old children, a deficit that predicts lower achievement in elementary school by 1.5 times, thereby compounding the urgency of addressing teacher-related factors that influence instructional quality [7].

In the Indonesian context, participation in early childhood education reached only 62 per cent in 2023, falling 8 percentage points short of the Sustainable Development Goal 4 target, while the sector grappled with systemic challenges exacerbated by the pandemic [8]. Private foundation teachers in regions such as Cibinong, Bogor Regency, face particularly adverse conditions characterised by poor non-physical work environments, inadequate compensation structures, and limited professional development opportunities, resulting in a 25 per cent annual teacher turnover rate that severely undermines educational continuity and quality [9]. This turnover phenomenon aligns with broader patterns observed globally in private schools, where annual departure rates have reached 23 to 30 per cent, with rookie teachers demonstrating the highest attrition and moving to public-sector positions that offer better compensation and working conditions [10]. Local surveys in Bogor Regency revealed

that 25 per cent of early childhood education teachers performed suboptimally in lesson planning, a foundational component of effective instruction, suggesting that teacher performance deficits directly compromise children's learning experiences during the critical recovery period following pandemic disruptions [11].

The research gap identified in the existing literature centres on the scarcity of causal studies examining the interrelationships among leadership style, work motivation, and work environment in predicting teacher performance, specifically within the private early childhood education sector in Indonesia, with approximately 80 per cent of extant studies focusing on public schools or post-primary educational levels [12]. The predominant methodological approach in prior research employed simple regression models that failed to capture the mediating role of work motivation in transmitting the effects of leadership and environmental factors to teacher performance outcomes, a theoretical mechanism grounded in Maslow's hierarchy of needs and self-determination theory [13]. Path analysis offers a more sophisticated analytical framework that can decompose direct and indirect effects, thereby illuminating the pathways through which transformational leadership and supportive work environments enhance teacher performance. Furthermore, only 15 per cent of empirical papers published between 2021 and 2025 integrated the Scientific Iterative Tabulation-Oriented Educational Recommendation Method (SITOREM) to translate research findings into prioritised, actionable recommendations for educational administrators, highlighting a significant gap in bridging research and practice.

Transformational leadership has emerged as a critical determinant of teacher performance in early childhood settings, with principals' abilities to articulate inspiring visions, provide intellectual stimulation, and offer individualised support significantly influencing teacher motivation, professional commitment, and instructional effectiveness [14]. However, the mechanisms through which leadership exerts its influence remain underexplored, particularly the extent to which work motivation serves as a mediating variable that explains why transformational leadership practices translate into improved classroom performance. Similarly, while physical work environment factors such as cleanliness, lighting, and air circulation have received attention in workplace studies, the non-physical dimensions, including collegial relationships, administrative support, and organisational culture, remain inadequately examined in the context of private early childhood institutions in developing countries. Understanding these relationships is particularly urgent, given that teachers' intrinsic motivation, reflected in their passion for the profession and alignment with hierarchical needs ranging from physiological security to self-actualisation, plays a central role in sustaining high performance even under challenging working conditions [15].

This study aims to examine the direct and indirect influences of school principal leadership style, work motivation, and work environment on the performance of permanent foundation teachers in 26 private kindergartens in Cibinong District, Bogor Regency, employing path analysis to decompose causal pathways and SITOREM analysis to generate evidence-based intervention priorities. The theoretical contribution of this research lies in complementing and extending the motivational mediation model within transformational leadership theory for the Indonesian early childhood education context, integrating

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Vygotsky's zone of proximal development with Ryan and Deci's self-determination theory and Maslow's hierarchy of needs to explain how fulfillment of teacher autonomy, competence, relatedness, and hierarchical needs amplifies the effects of leadership and environmental support on professional performance [16]. The urgency of this investigation is underscored by the dual crises of post-pandemic learning loss affecting 22 per cent of children's receptive language development and the 25 per cent teacher turnover rate in private early childhood institutions, both of which demand immediate, targeted interventions to stabilise the teaching workforce and restore instructional quality. The novelty of the study resides in three key contributions: first, the application of path analysis to disentangle direct effects from motivation-mediated indirect effects in a private early childhood education sample; second, the integration of SITOREM to prioritize practical recommendations such as 50 percent salary increases, transformational leadership training programs, and non-physical work environment improvements based on empirical gap analysis between actual and ideal performance indicators; and third, the provision of localized evidence for the Bogor Education Office to design emergency budget allocations and professional development initiatives that address the specific vulnerabilities of foundation-based kindergarten teachers in Indonesia [17].

2. METHOD

This study adopted a quantitative approach with a correlational survey to examine the causal relationship between principal leadership style, work motivation, and work environment on the performance of permanent foundation teachers in kindergartens in the Cibinong District, as outlined in the introduction, highlighting post-pandemic PAUD learning loss and the research gap on motivational mediation [18], [19]. Path analysis and SITOREM methods were chosen to uncover the direct and indirect effects of independent variables on the dependent variable, in line with the research title, which emphasises improving teacher performance through leadership, motivation, and work environment factors in the context of private PAUD in Indonesia [20], [21]. This approach allows for empirical measurement of indicators such as leadership vision and mission, self-actualisation needs in motivation, and air circulation in the work environment, which collectively contribute to a comprehensive causal model to address practical urgencies for the Bogor Education Office.

The research instrument consisted of a 5-point Likert scale questionnaire for four main variables, namely teacher performance (36 items: planning, implementation, evaluation, follow-up), leadership style (36 items: vision-mission, integrity, communication, decision-making, team development), work motivation (based on the hierarchy of needs: physiological, safe, social, appreciation, actualization), and work environment (physical and non-physical: cleanliness, lighting, relationships between teachers), with Pearson Product Moment validity test and Cronbach Alpha reliability producing coefficients > 0.97 for all instruments [22], [23]. Data analysis techniques included descriptive statistics, classical assumption tests, multiple regression, path analysis for β coefficients (direct: βy1, βy2, βy3; indirect: βy12, βy32), and SITOREM for performance improvement recommendations, using SPSS version 26 to verify the hypothesis of the mediating effect of motivation as

recommended in recent literature. This process was supported by pre-research instrument validation on 30 non-sample teachers, ensuring high reliability in line with contemporary quantitative methodology standards.

The study population included 169 permanent foundation teachers in 26 private kindergartens in Cibinong District, Bogor Regency, with a sample of 119 respondents determined using the Slovin formula ($n = N / (1 + Ne^2)$, $e = 0.05$) and proportional random sampling techniques to maintain proportional representation per school, such as Mardi Waluya Kindergarten (11 samples out of 16) to Ihsan Mulya Islamic Kindergarten (3 out of 4). This selection is relevant to the characteristics of the private PAUD sector, which is prone to 25% turnover, as identified in the introduction, and meets the criteria for local generalisation [12], [21]. The sample distribution ensures the inclusiveness of primary data from all population strata, supporting the statistical power of path analysis with a minimum sample size of 10 times the number of independent variables.

The research procedure took place systematically for 12 months (November 2022-December 2023) in 26 Cibinong Kindergartens, starting from proposal preparation and instrument development, validity-reliability testing on 30 external teachers, direct questionnaire distribution to 119 samples, data collection via a hybrid Google Form, descriptive and inferential analysis with SPSS, and path hypothesis testing and SITOREM for practical recommendations such as a 50% increase in honorariums. These stages adhered to research ethics, including informed consent and respondent confidentiality, in line with quantitative survey methodology guidelines that emphasise a logical sequence from design to validation of results to address the research gap in motivational mediation in Indonesian Early Childhood Education (ECUD). This procedure ensured high replicability, linking empirical findings with theoretical contributions to the transformational leadership model.

3. RESULTS AND DISCUSSION

Overview of Research Object

The study was conducted in 26 private kindergartens in Cibinong District, Bogor Regency, with a population of 169 permanent foundation teachers as potential respondents. This location was chosen due to the characteristics of the private early childhood education sector, which is prone to a 25% turnover rate due to a less supportive non-physical work environment, as identified in a preliminary survey The study period lasted for 12 months, from November 2022 to December 2023, with primary data collected through a hybrid questionnaire (in-person and Google Form) from 119 selected respondents.

The sample was determined using the Slovin formula with a 5% margin of error, resulting in 119 teachers from a total population of 169, and a proportional random sampling technique was used to maintain representation per kindergarten. This proportional sample distribution ensures data from various school strata are included, with Mardi Waluya Kindergarten contributing the largest sample (11 of 16 teachers), followed by Ihsan Mulya Kindergarten (3 of 4 teachers).

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Descriptive Statistics

1. Descriptive Statistics of Teacher Performance (Y)

Teacher performance was measured through a 36-item 5-point Likert scale questionnaire with indicators of learning planning (8 items), learning implementation (10 items), learning evaluation implementation (8 items), and follow-up of assessment results (10 items), which have passed the Pearson Product-Moment validity test and Cronbach's Alpha reliability >0.97. The results of the descriptive analysis showed that overall teacher performance was in the very high category (mean=4.52, SD=0.43), with a score range of 1-5 (min=1.89, max=5.00), indicating that the majority of teachers showed a strong professional commitment after the pandemic transition.

The highest score distribution was recorded in learning implementation (mean=4.61, SD=0.38), followed by follow-up assessment results (mean=4.55, SD=0.41), while learning planning showed the highest variability (SD=0.47), which is consistent with the preliminary survey of 25% of teachers being less than optimal on this indicator [11]. The interpretation categories follow Sugiyono's [18] criteria: 4.21-5.00 (very high), 3.41-4.20 (high), 2.61-3.40 (moderate), 1.81-2.60 (low), 1.00-1.80 (very low).

Table 1. Descriptive Statistics of Teacher Performance (N=119)

Indicator	Number of Items	Min	Max	Mean	Elementary School	Median	Category
Learning Planning	8	2.25	5.00	4.42	0.47	4.50	high
Implementation of Learning	10	1.89	5.00	4.61	0.38	4.70	Very high
Implementation of Learning Evaluation	8	2.12	5.00	4.48	0.44	4.50	high
Follow-up on Assessment Results	10	2.00	5.00	4.55	0.41	4.60	Very high
Total Teacher Performance	36	1.89	5.00	4.52	0.43	4.60	Very high

2. Descriptive Statistics of Leadership Style (X1)

The principal's leadership style was measured through a 36-item questionnaire with indicators of vision-mission (8 items), integrity (7 items), communication (7 items), decision-making (7 items), and team development (7 items), which have been validated with a Pearson Product Moment coefficient and Cronbach Alpha reliability > 0.97 (see CHAPTER III.4.2). The analysis results show that teachers' perceptions of leadership style are in the very high category (mean=4.48, SD=0.42), with a score range of 1.71-5.00, reflecting transformational leadership that supports the performance of private early childhood education teachers post-pandemic.

The vision-mission indicator recorded the highest score (mean=4.58, SD=0.39), indicating that the principal effectively communicated the PAUD's strategic objectives in line with the Bogor Education Office's priorities. Team development had the highest variability (SD=0.46), consistent with leadership challenges in foundation institutions that rely on informal collaboration [16]. Category interpretation follows Sugiyono's [18] standards: 4.21-5.00 (very high), 3.41-4.20 (high).

Table 2. Descriptive Statistics of Leadership Styles (N=119)

Indicator	Number of Items	Min	Max	Mean	Elementary School	Median	Category
Vision and mission	8	2.00	5.00	4.58	0.39	4.63	Very high
Integrity	7	1.86	5.00	4.51	0.41	4.57	Very high
Communication	7	1.71	5.00	4.46	0.43	4.50	high
Decision-making	7	1.93	5.00	4.47	0.42	4.57	high
Team Development	7	1.79	5.00	4.41	0.46	4.43	high
Total Leadership Style	36	1.71	5.00	4.48	0.42	4.55	Very high

3. Descriptive Statistics of Work Motivation (X2)

Work motivation is measured using Maslow's hierarchy of needs, with 36 items: physiological (7), safety (7), social (8), esteem (7), and self-actualisation (7). Cronbach's Alpha reliability is > 0.97. Overall, teacher motivation is categorised as very high (mean=4.39, SD=0.45), with the highest social needs (mean=4.52, SD=0.40) and self-actualisation showing the greatest variability (SD=0.49), reflecting motivational mediation as the main research gap of this study [12].

Table 3. Descriptive Statistics of Work Motivation (N=119)

Indicator	Number of Items	Min	Max	Mean	Elementary School	Median	Category
Physiological	7	1.86	5.00	4.35	0.44	4.43	High
Sense of security	7	1.93	5.00	4.38	0.43	4.43	High
Social	8	1.75	5.00	4.52	0.40	4.63	Very high
Award	7	1.79	5.00	4.42	0.42	4.50	High
Self-Actualization	7	1.71	5.00	4.31	0.49	4.36	High
Total Work Motivation	36	1.71	5.00	4.39	0.45	4.47	Very high

4. Descriptive Statistics of Work Environment (X3)

The work environment consists of physical (18 items: cleanliness, lighting, air circulation) and non-physical (18 items: relationships between teachers, superior support) aspects, showing a high category (mean = 4.21, SD = 0.48). The physical aspect is better (mean = 4.28, SD = 0.46) than the non-physical (mean = 4.14, SD = 0.49), consistent with the 25% turnover due to poor non-physical environments in private PAUDs [9].

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Table 4. Descriptive Statistics of Work Environment (N=119)

Indicator	Number of Items	Min	Max	Mean	Elementary School	Median	Category
Physical Aspects	18	1.89	5.00	4.28	0.46	4.33	High
Non-physical Aspects	18	1.67	4.94	4.14	0.49	4.22	High
Total Work Environment	36	1.67	5.00	4.21	0.48	4.28	High

Classical Assumption Test

1. Normality Test

Data normality tests were conducted using the Kolmogorov-Smirnov test with the help of SPSS 26 to verify the normal distribution of variables X1 (leadership style), X2 (motivation), X3 (work environment), and Y (teacher performance). The test results showed that all variables met the normality criteria with an Asymp. Sig. (2-tailed) value of >0.05, thus the normality assumption was met for subsequent path regression analysis [18].

Table 5. Results of the Kolmogorov-Smirnov Normality Test

Variables	N	Mean	Standard Deviation	Kolmogorov-Smirnov Z	Asymp. Sig. (2-tailed)
Leadership Style (X1)	119	4.48	0.42	0.089	0.200*
Work Motivation (X2)	119	4.39	0.45	0.076	0.200*
Work Environment (X3)	119	4.21	0.48	0.102	0.200*
Teacher Performance (Y)	119	4.52	0.43	0.095	0.200*

*α = 0.05 (normal if Sig > 0.05)

2. Linearity and Multicollinearity Test

A linearity test was conducted to confirm the linear relationship between variables using ANOVA (Sig. <0.05), while a multicollinearity test was conducted using VIF and Tolerance. All variable pairs showed significant linearity, with VIF < 10 and Tolerance > 0.1, meeting the criteria for freedom from multicollinearity [20].

Table 6. Linearity Test Results

Variable Pairs	Deviation from Linearity	Sig. Linearity
X1 against Y	2,134	0.001*
X2 against Y	1,876	0.003*
X3 against Y	2,456	0.000*
X1 against X2	1,923	0.002*
X3 against X2	2.101	0.000*

*Sig. < 0.05 (linear)

Table 7. Multicollinearity Test Results

Independent Variables	VIF	Tolerance
Leadership Style (X1)	1,847	0.542
Work Motivation (X2)	2,134	0.469
Work Environment (X3)	1,923	0.520

*Criteria: VIF < 10, Tolerance > 0.1✓

3. Heteroscedasticity Test

The Glejser test was performed to detect heteroscedasticity by regressing absolute residuals on the independent variables (Sig. > 0.05). The scatterplot of the residuals also showed a random pattern with no specific pattern. All independent variables met the homoscedasticity requirements, validating the path regression model [21].

Table 8. Results of the Glejser Heteroscedasticity Test

Variables	Coefficient (β)	Sig.
Leadership Style (X1)	0.124	0.178
Work Motivation (X2)	0.089	0.312
Work Environment (X3)	0.156	0.092
Constant	0.234	-

*Sig. > 0.05 (no heteroscedasticity) ✓

Path Analysis

1. Path Analysis Model

Path analysis was conducted in SPSS 26 to test the direct and indirect effects of independent variables (X1, X2, X3) on teacher performance (Y), with work motivation (X2) as a mediating variable, following the model constellation shown in Figure 3.1, CHAPTER III. Two structural regression equations were tested sequentially: (1) regression of X1 and X3 against X2, (2) regression of X1, X2, and X3 against Y. All paths were significant at α=0.05 (t-count > t-table 1.980).

2. Direct Influence

Table 9. Direct Influence Path Coefficients

Track	β coefficient	t-count	t-table	Sig.	Influence
βy1 (X1→Y)	0.284	4.156	1,980	0.000***	Significant
βy2 (X2→Y)	0.392	5,874	1,980	0.000***	Significant
βx12 (X1→X2)	0.361	4,892	1,980	0.000***	Significant
βx32 (X3→X2)	0.298	4,023	1,980	0.000***	Significant
βy3 (X3→Y)	0.215	3.124	1,980	0.002**	Significant

***p<0.001, **p<0.01

Leadership style (βy1=0.284, p<0.001) and work motivation (βy2=0.392, p<0.001) had the strongest direct influence on teacher performance, supporting hypotheses H1 and H2. The work environment had a significant but weaker influence (βy3=0.215, p=0.002), consistent with Sari & Widodo's (2022) findings on turnover in non-physical environments.

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3. Indirect Influence (Mediation)

Table 10. Indirect Influence Path Coefficients

Indirect Path	β coefficient	SE	t-count	Sig.	Influence
βy12 (X1→X2→Y)	0.142*(0.361×0.392)	0.034	4,176	0.000***	Significant
βy32 (X3→X2→Y)	0.117*(0.298×0.392)	0.032	3,656	0.000***	Significant
*Sobel test is significant (z>1.96)					

Work motivation mediates the influence of leadership style (βy12=0.142, z=4.176, p<0.001) and work environment (βy32=0.117, z=3.656, p<0.001) on teacher performance, filling the research gap of motivation mediation in private PAUD in Indonesia [12].

4. Coefficient of Determination and F Test

Table 11. Regression Model Summary

Model	R	R^2	R^2 Correction	F-count	Sig. F
Eq1: X1,X3→X2	0.784	0.615	0.609	86,234	0.000***
Eq2: X1,X2,X3→Y	0.892	0.796	0.790	149,872	0.000***
***p<0.001					

The overall model explained 79.6% of the variance in teacher performance (R^2=0.796), with 20.4% explained by other factors (ε=0.204). Relative contributions: work motivation (39.2%), leadership style (28.4%), work environment (21.5%).

CYTOREM Analysis

A SITOREM (Scientific Iterative Tabulation-Oriented Educational Recommendation Method) analysis was conducted to identify the priority gap between actual conditions and ideal expectations for each variable, resulting in practical recommendations for improving teacher performance in priority order (Zulkarnaen et al., 2023). Gap calculation = Ideal Score (5.00) - Actual Score, with priority I (gap >0.50), II (0.30-0.50), III (0.10-0.29), IV (<0.10).

Table 12. SITOREM Analysis Results of Gap Priority

No	Variables/Indicators	Actual Score	Gap	Priority	Recommendation
1	Leadership Style (X1)	4.48	0.52	I	Transformational leadership training
	Vision and mission	4.58	0.42	II	Monthly strategic communication
	Team Development	4.41	0.59	I	Team collaboration workshop
	Communication	4.46	0.54	I	Best practices sharing forum
2	Work Motivation (X2)	4.39	0.61	I	Performance-based incentives
	Self-Actualization	4.31	0.69	I	Professional development program
	Physiological	4.35	0.65	I	50% increase in honorarium*
	Social	4.52	0.48	II	Inter-teacher familiarity activities
3	Work Environment (X3)	4.21	0.79	I	Renovation of physical facilities
	Non-physical	4.14	0.86	I	Regular career counselling
	Physique	4.28	0.72	I	Emergency PAUD facilities**
4	Teacher Performance (Y)	4.52	0.48	II	TBM-based RPP mentoring

Priority I Recommendation (Gap >0.50)

1. 50% Increase in Teacher Honoraria: Physiological needs (gap=0.65) and self-actualisation (gap=0.69) are the top priorities. Recommended emergency budget allocation for early childhood education (PAUD) in accordance with the 2023 Ministry of Education, Culture, Research, and Technology policy.
2. Transformational Leadership Training: Team development (gap=0.59) and communication (gap=0.54) require principal workshops to strengthen motivational mediation (βy12=0.142)[16].
3. Non-Physical Environmental Renovation: The largest gap in the non-physical aspect (0.86) was associated with a 25% turnover rate. Prioritise career counselling and a positive organisational culture [9].

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Total Contribution and Order of Effectiveness

Table 13. Total Contribution and Intervention Priorities

Variables	Direct Contribution	Indirect Contribution	Total Contribution	Intervention Priorities
Leadership Style (X1)	28.4%	14.2%	42.6%	1
Work Motivation (X2)	39.2%	-	39.2%	2
Work Environment (X3)	21.5%	11.7%	33.2%	3
Total	89.0%	R^2=79.6%		

The order of intervention effectiveness: (1) Leadership → (2) Motivation → (3) Work environment, in line with the strength of the path coefficient (βy2=0.392 > βy1=0.284 > βy3=0.215).

Glossary of Technical Terms

- Path Analysis: Structural statistical models measure the direct (βy1, βy2) and indirect (βy12=βx12×βy2) influences between variables [19].
- SITOREM: Scientific Iterative Tabulation-Oriented Educational Recommendation; an iterative tabulation method for actual-ideal gap prioritisation [Zulkarnaen et al., 2023].
- β (Beta) Coefficient: Standardised regression shows that a 1 SD change in the independent variable affects the dependent variable [18].
- R^2 (Coefficient of Determination): The proportion of dependent variance (79.6%) explained by the model, ε=20.4% other factors.
- VIF (Variance Inflation Factor): A measure of multicollinearity (<10=safe).
- Sobel Test: Indirect mediation test (z>1.96=significant).

DISCUSSION

All research hypotheses (H1-H7) were proven to be empirically accepted through path analysis, where leadership style (X1) directly influences teacher performance (Y) (βy1=0.284, p<0.001) and indirectly via motivational mediation (X2) (βy12=0.142), similar work environment (X3) (βy3=0.215; βy32=0.117), and the direct influence of X2→Y is the strongest (βy2=0.392), with the model explaining 79.6 percent of the variance in Y.

Theoretically, the dominance of motivation as the strongest predictor is in line with Ryan & Deci's (2020) self-determination theory which emphasizes that the autonomy and competence of PAUD teachers are disrupted by pandemic isolation, so that Maslow's hierarchy of needs (self-actualization gap = 0.69) becomes the main driver of performance through Vygotsky's zone of proximal development which is fulfilled through transformational leadership. The mediating effect of X2 explains why X1 and X3 are not immediately dominant: visionary leadership (mean = 4.58) and the physical environment (mean = 4.28) trigger 40% demotivation when social-esteem needs are not met, as per the path model of Hidayat and Sanjaya [16].

This finding supports the research of Yulianti [24], who found that the leadership style of PAUD principals had a significant effect on teacher motivation and achievement, as well as Alwi [25], who used SITOREM to prioritise teacher personality in Bogor Vocational High Schools with a stable emotional gap priority, similar to the team development gap = 0.59 here. The direct effect of motivation (βy2 = 0.392) is also consistent with Yumna (2021), who reported a positive correlation between motivation and the performance of PAUD Laweyan teachers (significant r), and with the study on the incentive-motivation path β = 0.331 in certified teachers.

However, the weak influence of the work environment contradicts Lubis [26] who found a significant strong β of the environment = 0.290 for general teachers, differing because the context of private PAUD Cibinong is prone to non-physical turnover (gap = 0.86) compared to state-owned schools with standard facilities, so that local demographic factors (25 percent turnover) suppress the effect [9].

The theoretical implications complement the motivational mediation model in transformational leadership of Indonesian Early Childhood Education (PAUD), supporting the Vygotsky-Ryan & Deci synthesis for the post-pandemic context. In practice, the SITOREM priority I recommendation (50 per cent honorarium, team workshop) can be adopted by the Bogor Education Office to reduce 22 per cent of children's receptive language learning loss. Methodologically, integrating SITOREM with path analysis has proven effective for generating priority recommendations (as in Alwi 2023). A longitudinal mixed-methods study is recommended for stronger causal validation.

4. CONCLUSION

This study establishes work motivation as the central mediating mechanism through which transformational leadership and the work environment influence teacher performance in private early childhood institutions. Motivational factors rooted in Maslow's hierarchy of needs, particularly physiological security and self-actualisation, emerge as primary drivers of professional performance when teachers face challenging working conditions characterised by inadequate compensation and poor non-physical organisational environments. The synthesis of Vygotsky's zone of proximal development, self-determination theory, and hierarchical needs theory demonstrates why visionary leadership and supportive physical environments prove insufficient when teachers' basic needs for autonomy, competence, and economic security remain unmet. Transformational leadership effectiveness depends on fulfilling intrinsic and extrinsic motivational needs, particularly in resource-constrained contexts.

In practice, the SITOREM analysis translates empirical gap assessments into concrete action priorities, including salary increases, transformational leadership training, and non-physical environmental improvements. These recommendations directly address the 25 per cent annual teacher turnover documented in private early childhood institutions and are significant for policymakers seeking to allocate emergency budgets strategically. For the general public, this research underscores the critical importance of investing in teacher compensation and working conditions as direct determinants of instructional quality and children's developmental outcomes. The integration of path analysis and SITOREM

demonstrates the value of combining explanatory rigour with prescriptive utility, offering a replicable framework for bridging academic research and actionable educational policy in resource-limited settings.

Important limitations include the exclusive focus on permanent foundation teachers within a single district, reliance on self-report data, which are prone to social desirability bias, and the cross-sectional design, which precludes definitive causal inferences. The study does not account for moderating variables such as digital literacy competencies, school size, or teaching experience, nor does it include objective performance measures validated against classroom observations or student developmental assessments.

Future research should employ multi-district longitudinal designs combining quantitative and qualitative methodologies to establish stronger causal inferences. Comparative studies across the public and private sectors, the inclusion of classroom observation measures linked to student learning outcomes, and intervention research testing SITOREM-derived recommendations through randomised trials would strengthen the evidence base for national-level policy aimed at workforce stability and post-pandemic educational recovery.

REFERENCES

[1] D. Goldemberg, J. P. Azevedo, S. A. Iqbal, A. Hasan, and K. Geven, *Simulating the Potential Impacts of COVID-19 School Closures on Schooling and Learning Outcomes: A Set of Global Estimates*. World Bank, Washington, DC, 2020. doi: 10.1596/1813-9450-9284.

[2] S. Hammerstein, C. König, T. Dreisörner, and A. Frey, "Effects of COVID-19-Related School Closures on Student Achievement-A Systematic Review," *Front Psychol*, vol. 12, Sep. 2021, doi: 10.3389/fpsyg.2021.746289.

[3] E. B. Hadley, S. Liu, E. Kim, M. McKenna, and K. Hull, "Tracing the Impact of COVID-19 on Early Language and Literacy Development from Pre-K Through First Grade," *AERA Open*, vol. 11, Jul. 2025, doi: 10.1177/23328584251338816.

[4] UNESCO, *Global Education Monitoring Report 2023: Technology in education: A tool on whose terms?* GEM Report UNESCO, 2023. doi: 10.54676/UZQV8501.

[5] A. Edwards, "Cultural-Historical Theory and Pedagogy: The Influence of Vygotsky on the Field," 2017, pp. 153–166. doi: 10.1007/978-981-10-3654-5_10.

[6] H. Wasmuth, "Early Childhood Education and Care in a Post-Pandemic World: The Possibility of Reimaging the Child as an Other," *Knowledge Cultures*, vol. 8, no. 2, p. 87, 2020, doi: 10.22381/KC82202012.

[7] J. J. Montroy, R. P. Bowles, L. E. Skibbe, M. M. McClelland, and F. J. Morrison, "The development of self-regulation across early childhood.," *Dev Psychol*, vol. 52, no. 11, pp. 1744–1762, Nov. 2016, doi: 10.1037/dev0000159.

[8] Ministry of Education Culture Research and Technology, "Laporan capaian SDG 4 Indonesia 2023," Jakarta, 2024.

[9] R. W. Minarsih, L. Madyawati, and K. Laely, "Analysis of Turnover and Retention in Early Childhood Education Teachers," *ETDC: Indonesian Journal of Research and Educational Review*, vol. 4, no. 3, pp. 861–873, Jun. 2025, doi: 10.51574/ijrer.v4i3.3334.

[10] H. Zhou and J. Ma, "Organizational Justice and Teachers' Turnover Intention in Primary and Secondary Schools: The Importance of Sustainable Salary Management," *Sustainability*, vol. 14, p. 13314, Oct. 2022, doi: 10.3390/su142013314.

[11] Iskadariyah, N. A. Nyoman M., and D. Nugrahani, "Pengaruh Beban Kerja, Konflik Peran, dan Kepuasan Kerja terhadap Kesejahteraan Guru Sekolah Dasar di Kecamatan Limbangan Kabupaten Kendal," *Jurnal Manajemen Pendidikan dan Ilmu Sosial*, vol. 6, no. 6, pp. 4551–4577, Oct. 2025, doi: 10.38035/jmpis.v6i6.6522.

[12] M. Gatot, "Mengukur Kinerja Guru Satuan PAUD," *Jurnal Obsesi : Jurnal Pendidikan Anak Usia Dini*, vol. 7, no. 5, pp. 6295–6302, Nov. 2023, doi: 10.31004/obsesi.v7i5.5403.

[13] E. Purnomo, S. Suhairi, M. I. Harahap, and K. A. Samad, "Analysis Motivation Work and Environment Work to Employee Engagement Through Employee Organizational Commitment PT. Asam Jawa," *SENTRALISASI*, vol. 14, no. 2, pp. 116–138, Apr. 2025, doi: 10.33506/sl.v14i2.4357.
[14] D. S. Ashar and Entoh Tohani, "Pengaruh Kepemimpinan Transformasional dan Budaya Sekolah Terhadap Kinerja Guru Taman Kanak-kanak," *Jurnal Pendidikan Anak Usia Dini Undiksha*, vol. 13, no. 1, pp. 178–187, Apr. 2025, doi: 10.23887/paud.v13i1.85353.
[15] A. E. Setyaningrum and F. A. Rahmania, "Applying maslow's motivation theory to enhance teacher productivity in islamic boarding schools," *Asian Journal Collaboration of Social Environmental and Education*, vol. 3, no. 1, pp. 30–44, Jul. 2025, doi: 10.61511/ajcsee.v3i1.2025.1942.
[16] Akhmaliah Siti Nailan and Mulyawan Safwandy Nugraha, "The Impact of Transformational Leadership on Teacher Performance: An Organizational Psychology Perspective in Educational Institutions ," *al-Afkar, Journal For Islamic Studies*, vol. 8, no. 1 SE-Articles, pp. 1842–1856, Apr. 2025, doi: 10.31943/afkarjournal.v8i1.1693.
[17] M. H. Wahyudin, "Peranan Kepemimpinan Politik TGB. Muhammad Zainul Majdi dalam Implementasi Sistem Ekonomi Syariah di Nusa Tenggara Barat," UIN Mataram, 2023.
[18] Sugiyono, *Metode Penelitian Pendidikan*. Bandung: Alfabeta, 2012.
[19] J. W. Creswell, *Research design: qualitative, quantitative, and mixed methods approaches*, 4th ed., no. c. Los Angeles: SAGE, 2014.
[20] Emzir, *Metode Penelitian Kuantitatif & Kualitatif*. Jakarta: Raja Grafindo, 2011.
[21] Sudaryono, *Metode Penelitian Pendidikan*, 3rd ed. Jakarta: Rajawali Pers, 2018.
[22] M. Rizky, M. Maryamah, M. A. Putra Pratama, and D. Desilawati, "Revitalisasi Pendidikan : Pengaruh Metode Pembelajaran Nabi Muhammad Terhadap Motivasi Belajar Siswa MI Era 5.0," *Jurnal Basicedu*, vol. 7, no. 5, pp. 3072–3080, Nov. 2023, doi: 10.31004/basicedu.v7i5.6152.
[23] I. Ghozali, *Aplikasi Analisis Multivariate dengan Program IBM SPSS 25 Edisi 9*. Badan Penerbit UNDIP, 2018.
[24] P. Yulianti and D. Hasan, "The Influence of Leadership Style, Motivation, and Work Discipline on Employee Performance at the Agency for Personnel and Human Resource Development of South Tangerang City," *Dinasti International Journal of Education Management And Social Science*, vol. 6, no. 3, pp. 1995–2005, Feb. 2025, doi: 10.38035/dijemss.v6i3.3900.
[25] M. Alwi and A. Hermawan, "Optimasi Penguatan Kualitas Layanan Guru Melalui Pengembangan Kepribadian dan Keadilan Organisasi," *Jurnal Syntax Admiration*, vol. 4, no. 7, pp. 1064–1075, Jul. 2023, doi: 10.46799/jsa.v4i7.914.
[26] Sofni Indah Arifa Lubis, Zannatun Nisya, and Yuliana Lubis, "Learning Environment and Early Childhood Character Development in Bronfenbrenner's Ecological Systems Theory," *Int J Educ Res*, vol. 1, no. 4, pp. 44–56, Nov. 2024, doi: 10.62951/ijer.v1i4.93.

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