The Role of Madrasah Principal Leadership and Work Environment as Determinants of Teacher Performance

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Info Artikel	Abstract
Keywords: principal's leadership; teacher performance; work environment	Teachers' performance at Madrasah Ibtidaiyah Negeri (MIN) in Aceh Barat Daya remains suboptimal, as shown by low discipline, monotonous teaching practices, limited use of technology, inadequate facilities, and an unconducive work environment. This condition is suspected to be influenced by ineffective principal leadership and a less supportive work environment. Previous studies on similar topics have yielded varied results. However, little attention has been given to madrasahs in Aceh Barat Daya, where institutional culture and working conditions differ significantly from those in other educational settings. This study aims to analyse the influence of the principal's leadership and the work environment on teachers' performance, both partially and simultaneously. A quantitative explanatory approach was employed, with 103 teachers from five MINs selected using random sampling. Data were collected through questionnaires and documentation, and then analyzed using Partial Least Squares–Structural Equation Modeling (PLS-SEM) with SmartPLS version 4. The results revealed that the principal's leadership had a positive and significant effect on teachers' performance, with a path coefficient of 0.313. The work environment also had a positive and significant effect, with a path coefficient of 0.560. Simultaneously, the two variables contributed 64.1% to the improvement of teachers' performance, while other factors outside the scope of this study influenced the remaining percentage. These findings emphasise that participatory leadership and a supportive work environment are crucial to enhancing teachers' professionalism, creativity, and productivity in madrasahs, particularly within the underexplored context of Aceh Barat Daya.
Kata Kunci: Kepemimpinan kepala madrasah; lingkungan kerja; kinerja guru	**Abstrak** Kinerja guru pada Madrasah Ibtidaiyah Negeri (MIN) di Aceh Barat Daya masih tergolong belum optimal yang ditunjukkan dengan rendahnya disiplin, metode pembelajaran yang monoton, keterbatasan penggunaan teknologi, sarana yang kurang memadai, serta lingkungan kerja yang kurang kondusif. Kondisi ini diduga dipengaruhi oleh kepemimpinan kepala madrasah yang kurang efektif serta lingkungan kerja yang kurang mendukung. Penelitian sebelumnya mengenai topik serupa menunjukkan hasil yang beragam, namun masih sedikit penelitian yang mengulas madrasah di Aceh Barat Daya, dimana budaya kelembagaan dan kondisi kerja berbeda dengan satuan pendidikan lainnya. Penelitian ini bertujuan untuk menganalisis pengaruh kepemimpinan kepala madrasah dan lingkungan kerja terhadap kinerja guru, baik secara parsial maupun simultan. Pendekatan kuantitatif dengan metode eksplanatori digunakan, dengan sampel sebanyak 103 guru dari lima MIN yang dipilih melalui teknik random sampling. Data dikumpulkan melalui kuesioner dan dokumentasi, kemudian dianalisis menggunakan metode Partial Least Squares–Structural Equation Modeling (PLS-SEM) dengan bantuan perangkat lunak SmartPLS versi 4. Hasil penelitian menunjukkan bahwa kepemimpinan kepala madrasah berpengaruh positif dan signifikan terhadap kinerja guru dengan koefisien jalur sebesar 0,313. Lingkungan kerja juga berpengaruh positif dan signifikan dengan koefisien jalur sebesar 0,560. Secara

simultan, kedua variabel tersebut berkontribusi sebesar 64,1% terhadap peningkatan kinerja guru, sedangkan persentase sisanya dipengaruhi oleh faktor lain di luar penelitian ini. Temuan ini menekankan bahwa kepemimpinan partisipatif serta lingkungan kerja yang mendukung sangat penting untuk meningkatkan profesionalisme, kreativitas, dan produktivitas guru di madrasah, khususnya pada konteks Aceh Barat Daya yang masih jarang diteliti.

INTRODUCTION

Education is the foundation of national development because it plays an important role in shaping character and developing individual potential. Education is defined as a process of behavioural change through teaching and training (Kartiko & Rohmania, 2025; Mujaeni, 2021). The quality of human resources is a key factor in a nation's competitiveness. (Sanga, Laurensius Dihe, 2023). The legal basis for education in Indonesia is regulated in Article 31 of the 1945 Constitution and Law No. 20 of 2003 on the National Education System, which guarantees every citizen's right to access education fairly and equally. In the madrasahs, teacher performance becomes the core of educational quality, where leadership and the work environment play decisive roles. (Yanayirtika, 2021; Shulhan, 2018). However, at Madrasah Ibtidaiyah Negeri (MIN) Aceh Barat Daya, teacher performance remains suboptimal, marked by low discipline, monotonous learning methods, limited technological competence, and an unconducive work environment.

In madrasahs, the leadership of the headmaster has a significant influence on teacher performance. Several studies confirm the positive correlation between leadership style and teacher performance (Kibtiyah, 2022, Nazib et al., 2023). Empirical evidence by (Yanayirtika, 2021) Shows that headmaster leadership in Madrasah Ibtidaiyah in Mertoyudan was rated very good (85%), with teacher performance in the very high category 52%. Moreover, leadership has been proven to have a significant effect on teacher performance, influencing both work motivation and work culture. Similarly, (Maswar,Muhammad Jufri, 2020) Found that work motivation ($t = 2.859$, $p = 0.007$) and work environment ($t = 3.122$, $p = 0.004$) significantly influenced employee performance, with both variables simultaneously contributing to performance improvement ($F = 20.209$, $p = 0.000$). These findings strengthen the argument that leadership and the work environment play a critical role in shaping teacher performance, particularly in aspects of planning, implementation, and evaluation, as mandated in Law No. 14 of 2005 (Raberi et al., 2020)

Previous research generally supports the positive effects of leadership and work environment on teacher performance. (Khoirudin, 2024; Mukti et al., 2022; Voenli, Syarwani Ahmad, 2021; Yulita Elly, 2020). Nevertheless, other findings suggest that leadership does not always have a significant impact. (Jumarpati & Dewi, 2023), highlighting that institutional context strongly affects these relationships. Therefore, examining the conditions at MIN Aceh Barat Daya is important to provide more specific empirical insights. Educational administration itself is an integration of planning, coordination, motivation, supervision, and evaluation aimed at achieving efficiency and excellence. (Fatimah Meti , Ahmad Yasir Al Amin, 2025; Nur Sapridah, 2020). Leadership is thus essential to support administrative success and maintain education quality (Heriyono et al., 2021; Winarsih, 2022).

Headmaster leadership is a crucial determinant of learning quality and teacher performance. An effective principal not only acts as a manager but also as a role model of integrity and morality, in line with findings that spirituality-based systems, such as tahfidzul Qur'an, foster integrity through internalised values (Erga & Rasyid). Leadership involves influencing others to achieve shared goals (Julaiha, 2019; Hamdi & Zulkarnaen, 2021; Mega et al., 2023). Headmasters

bear responsibility for realising institutional vision and uniting stakeholders (Murniati, 2021), with main tasks including planning, administration, supervision, and maintenance of facilities (M. Sari, 2021; Vernando & Kaharudin, 2020; Dawam, Adolf Bastian, 2022). They should demonstrate exemplary conduct, openness, and inspiration (Pratiwi et al., 2021; Yunus et al., 2021), as teacher performance is strongly tied to leadership (Murni, 2022).

Beyond their managerial duties, headmasters play a crucial role in building a positive culture, fostering strong relationships, and implementing innovative solutions. (Muhammad Kristiawan, Irmi Suryanti, 2018; Azwan & Siregar, 2023; Umam, 2023). Their leadership style, autocratic, paternalistic, charismatic, laissez-faire, democratic, or transformational, shapes teacher commitment. (Ibnu Abas, Saiful Bahri, 2024; Nana Triapnita Nainggolan & Gandasari, Dyah, 2021; Abra, 2022; Musdalifah et al., 2020). Effective leadership is assessed through managerial ability, character, style, and supervision. (Junaris, 2023). Parallel to this, the work environment, both physical (lighting, safety, cleanliness) and non-physical (relationships, communication, culture), has a substantial impact on productivity (Nasihin, 2022; P. I. Sari, 2018; K. Sari et al., 2025). Research confirms that conducive conditions promote comfort, security, and teacher enthusiasm. (K. Sari et al., 2025).

Based on this framework, the present study aims to analyse the influence of headmaster leadership and work environment on teacher performance at MIN Aceh Barat Daya. Previous studies have generally reported that leadership and the work environment have a positive impact on teacher performance (Khoirudin, 2024; Mukti et al., 2022; Voenli, Syarwani Ahmad, 2021; Yulita Elly, 2020). However, some findings suggest that leadership does not always have a significant impact (Jumarpati & Dewi, 2023), shows that the relationship between leadership, work environment, and performance may vary depending on the institution. This inconsistency highlights the need to investigate the case of MIN Aceh Barat Daya, where specific leadership and environmental challenges are evident. The hypotheses are: (a) headmaster leadership significantly and positively influences teacher performance; (b) the work environment significantly and positively influences teacher performance; and (c) both leadership and work environment together significantly and positively influence teacher performance.

METHOD

This study employed a quantitative approach within the post-positivist paradigm to investigate causal relationships between variables using empirical and statistical data. (Rustamana et al., 2024). Employing an explanatory research design, it examined the influence of principal's leadership (X^1) and work environment (X^2) on teacher performance (Y) (M. Sari et al., 2023). Statistical modelling was utilised to test hypotheses and determine the extent to which leadership and work environment affect teacher performance. The population consisted of 137 teachers and education staff from five Madrasah Ibtidaiyah Negeri (MIN) in Aceh Barat Daya. A sample of 103 respondents was selected using probability sampling with the stratified random sampling technique to ensure proportional representation, minimize bias, and strengthen the validity of generalizations. (Waruwu, 2023).

Referring to (Arikunto, 2016) and Krejcie and Morgan's statistical guidelines (Sugiyono, 2013)This study selected a representative sample of 103 teachers from five Madrasah Ibtidaiyah Negeri (MIN) schools in Aceh Barat Daya, with a 5% margin of error, to ensure validity and efficiency (Waruwu, 2023). Sampling justification followed methodological recommendations to enhance replicability and minimise bias (Creswell, 2018). Data were collected through structured

questionnaires and documentation, with variables measured using a four-point Likert scale. The instrument's validity and reliability were tested using SmartPLS 4.0 (Iman Ghozali, 2020).

Table 1. Distribution of Respondents

School	Male	Female	Total
Madrasah Ibtidaiyah Negeri 2	7	16	23
Madrasah Ibtidaiyah Negeri 5	4	18	22
Madrasah Ibtidaiyah Negeri 7	3	16	19
Madrasah Ibtidaiyah Negeri 12	4	14	18
Madrasah Ibtidaiyah Negeri 15	2	19	21
Total	20	83	103

Source: Data Collection, 2025

Data were analysed using Partial Least Squares Structural Equation Modelling (PLS-SEM) with a reflective measurement model. (Iman Ghozali, 2020). The analysis assessed validity, reliability, and causal relationships through tests such as multicollinearity (VIF < 5), coefficient of determination (R^2), model fit (SRMR ≤ 0.08), and predictive relevance ($Q^2 > 0$). Effect sizes (f^2) and hypothesis testing were conducted using bootstrapping with significance levels of $p < 0.05$ and $p < 0.01$ (Hair et al., 2017). PLS-SEM was chosen for its suitability in handling moderately complex models and small sample sizes while ensuring robust parameter estimation. The distribution of respondents is presented in Table 1.

RESULTS AND DISCUSSION
Results
Convergent Validity

Convergent validity was assessed based on the correlation between each indicator and its construct, as reflected in the standardised loading factor. Indicators are considered valid when the loading factor exceeds 0.70, although values between 0.50 and 0.60 may still be acceptable. The analysis results showed that all indicators for the variables of principal's leadership, work environment, and teachers' performance had loading factors greater than 0.70, confirming their validity.

In addition to loading factors, convergent validity was also evaluated using the Average Variance Extracted (AVE). The results displayed in Table 2 show that all variables achieved AVE values above 0.50.

Table 2. Convergent Validity Results (AVE)

Variable	Cronbach's Alpha	Composite Reliability (ϱa)	Composite Reliability (ϱc)	AVE
Principal's Leadership (X1)	0.902	0.909	0.928	0.720
Teachers' Performance (Y)	0.917	0.918	0.932	0.634
Work Environment (X2)	0.952	0.955	0.958	0.618

Source: Data Processed Using Smart PLS 4

Discriminant Validity

According to the Fornell-Larcker criterion, the square root of the AVE of each construct must be higher than its correlation with other constructs. As shown in Table 3, the square root of AVE for each construct exceeded its correlations with other constructs.

Table 3. Fornell–Larcker Criterion

Variable	Principal's Leadership (X^1)	Teachers' Performance (Y)	Work Environment (X^2)
Principal's Leadership (X^1)	0.848		
Teachers' Performance (Y)	0.680	0.796	
Work Environment (X^2)	0.655	0.765	0.786

Source: Data Processed using SmartPLS 4

According to HTMT, values below 0.90 show discriminant validity. As shown in Table 4, all constructs met this criterion.

Table 4 Heterotrait-Monotrait Ratio (HTMT)

Variable	Principal's Leadership (X^1)	Teachers' Performance (Y)	Work Environment (X^2)
Principal's Leadership (X^1)			
Teachers' Performance (Y)	0.741		
Work Environment (X^2)	0.696	0.810	

Source: Data Processed using SmartPLS 4

Reliability Test

As shown in Table 5, all constructs had Cronbach's Alpha and Composite Reliability above 0.70, which shows strong internal consistency.

Table 5. Reliability Test

Variable	Cronbach's Alpha	Composite Reliability (ϱa)	Composite Reliability (ϱc)	AVE
Principal's Leadership (X^1)	0.902	0.909	0.928	0.720
Teachers' Performance (Y)	0.917	0.918	0.932	0.634
Work Environment (X^2)	0.952	0.955	0.958	0.618

Source: Data Processed using SmartPLS 4

Multicollinearity Test

Table 6 shows a VIF value of 1.753, which is well below the threshold, indicating no multicollinearity and allowing for an accurate interpretation of the model.

Table 6. Multicollinearity Test

Variable	Principal's Leadership (X^1)	Teachers' Performance (Y)	Work Environment (X^2)
Principal's Leadership (X^1)		1.753	
Teachers' Performance (Y)			
Work Environment (X^2)		1.753	

Source: Data Processed using SmartPLS 4

SMR Test

The results of the SmartPLS analysis, presented in Table 7, indicate that the SRMR values for both the saturated model and the estimated model are 0.082. Since SRMR < 0.10, the model meets the criteria for a good fit.

Table 7. SRMR Test

Fit Measure	Saturated Model	Estimated Model
SRMR	0.082	0.082
dULS	2.542	2.542
dG	1.877	1.877
Chi-square	907.912	907.912
NFI	0.675	0.675

Source: Data Processed Using SmartPLS 4

6. F-Square Test

Table 8 shows that Principal's Leadership has a medium effect ($f^2 = 0.155$), while Work Environment has a significant effect ($f^2 = 0.498$), showing the latter exerts a more substantial influence on Teacher Performance.

Table 8. Effect Size

Variable	Principal's Leadership (X1)	Teachers' Performance (Y)	Work Environment (X2)
Principal's Leadership (X1)		0.155	
Teachers' Performance (Y)			
Work Environment (X2)		0.498	

Source: Data Processed using SmartPLS 4

7. GoF Test

According to Iman (Iman Ghozali, 2020)A GoF index of 0.36 or higher indicates a high level of model fit. The NFI value in Table 9 is 0.675, placing the model in the high category. This confirms that the empirical data strongly support both the measurement and structural models.

Table 9 Goodness of Fit Test

Fit Measure	Saturated Model	Estimated Model
SRMR	0.082	0.082
dULS	2.542	2.542
dG	1.877	1.877
Chi-square	907.912	907.912
NFI	0.675	0.675

Source: Data processed using SmartPLS 4

8. Q² Test

After that, the Q² test evaluates predictive relevance. As shown in Table 10, Principal's Leadership (X^1) and Work Environment (X^2) have Q² values of 0.000, indicating no predictive relevance for other variables. This result occurs because both constructs function as exogenous

variables, which serve primarily as predictors rather than being predicted by other constructs. Consequently, their Q² values are not expected to demonstrate predictive relevance. In contrast, Teachers' Performance (Y) has a Q^2 value of 0.395, categorised as high. This indicates that the model is effective in predicting teachers' performance, while the absence of predictive relevance for X^1 and X^2 confirms their role as independent variables in the structural model.

Table 10. Q² Predictive Relevance Test

Variable	SSO	SSE	Q² (=1-SSE/SSO)
Principal's Leadership (X^1)	515.000	515.000	0.000
Teachers' Performance (Y)	824.000	498.623	0.395
Work Environment (X^2)	1442.000	1442.000	0.000

Source: Data processed using SmartPLS 4

9. Hypothesis Test

Hypothesis testing utilized t-tests and p-values, where $p < 0.05$ and t > the t-table value indicate a significant effect. In contrast, higher p-values and lower t-statistics indicate no effect.

Figure 1. Hipotesis Result
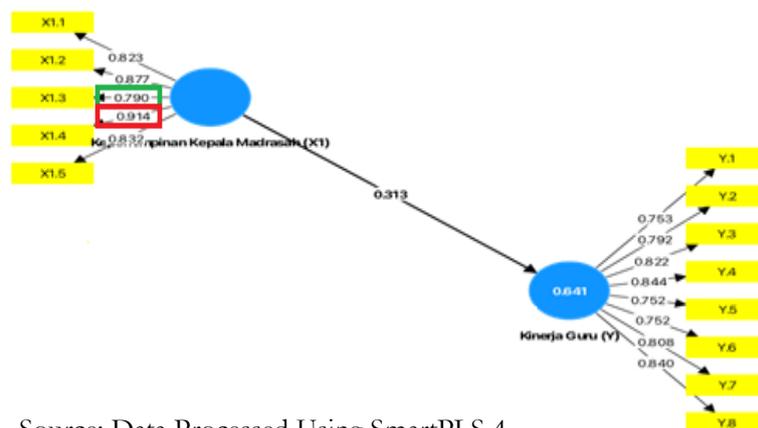
Source: Data Processed Using SmartPLS 4

Table 11 Hypothesis Test

Path	Coefficient	t	p
Principal Leadership (X^1) on Teacher Performance (Y)	0.313	2.033	0.042

Source: Data processed using SmartPLS 4

Based on the structural model in Table 11, Principal's Leadership (X^1) has a positive and significant effect on Teachers' Performance (Y). The path coefficient is 0.313, indicating that improvements in leadership are followed by improvements in teacher performance. The t-statistic value of 2.033 and p-value of 0.042 (< 0.05) confirm statistical significance. Thus, better principal leadership is empirically proven to enhance teacher performance.
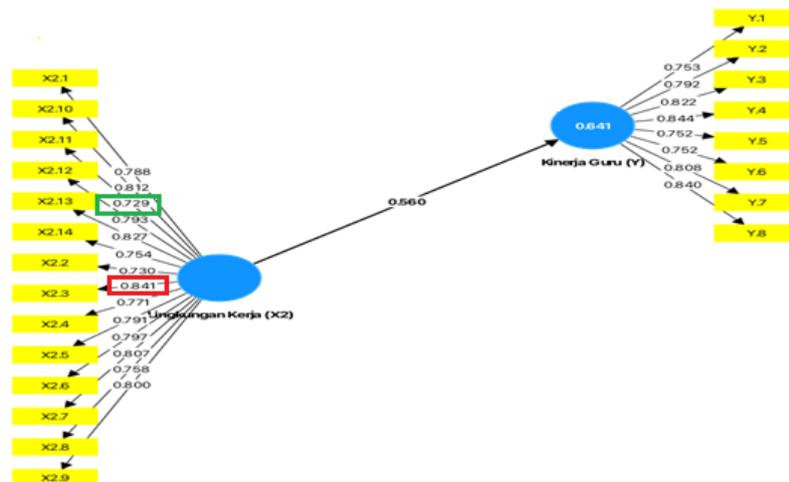
Figure 2. Hipotesis Result

Table 12 Hypothesis Test

Path	Coefficient	t	p
Work Environment (X²) on Teacher Performance (Y)	0.560	3.652	0.000

Source: Data processed using SmartPLS 4

Table 12 shows that the work environment significantly affects Teacher Performance (β = 0.560, t = 3.652, p = 0.000), thus supporting the hypothesis.
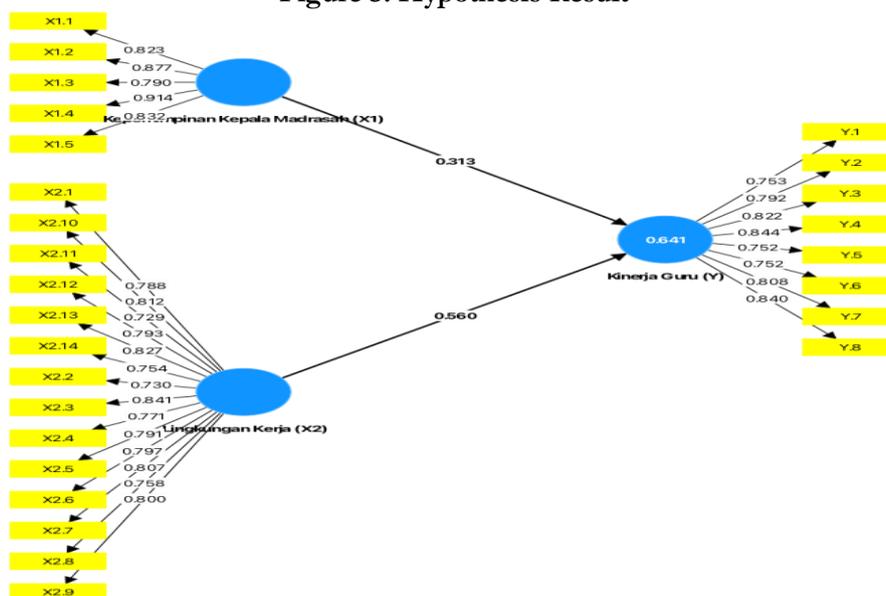
10. R-Square Test

Table 13 shows an R^2 of 0.641, indicating that 64.1% of Teacher Performance is explained by Leadership and Work Environment, which demonstrates moderate predictive power.

Table 13 R-Square (R²) Test

Variable	R-square	R-square Adjusted
Teachers' Performance (Y)	0.641	0.634

Source: Data processed using SmartPLS 4

Figure 3. Hypothesis Result

Source: Data processed using SmartPLS 4

DISCUSSION

The Influence of Madrasah Principals' Leadership on Teachers' Performance at MI Negeri Aceh Barat Daya

The leadership of madrasah principals plays an important role in shaping teacher performance at MI Negeri Aceh Barat Daya. The findings indicate that leadership has a positive and statistically significant effect on teacher performance, as evidenced by a path coefficient value of 0.313, a t-value of 2.033, and a p-value of 0.042. This result indicates that leadership practices within the institution significantly contribute to teachers' professional outcomes and instructional quality (Mukti et al., 2022). The effect size, categorized as medium (f-square = 0.155), implies that while leadership matters, it is not the only determinant of teacher performance. Factors such as work environment, pedagogical competence, and intrinsic motivation remain equally essential in explaining variations in teachers' effectiveness. Hence, principals' leadership must be viewed as an enabling force that interacts with other contextual and individual variables to enhance performance sustainably.

Moreover, the findings align with several previous studies that highlight the strategic role of leadership in enhancing teacher outcomes. Leadership is not only an administrative necessity but also an interpersonal process that fosters cooperation, motivation, and commitment among teachers (Khoirudin, 2024). A principal's role extends beyond supervising daily operations to embodying the values, vision, and culture of the institution. This multidimensional function enables leaders to influence teachers both directly, through guidance and evaluation, and indirectly by fostering a favorable climate that supports learning innovation (Mukti et al., 2022). When principals provide clear direction, maintain transparent communication, and recognize teachers' achievements, the collective morale and performance of the teaching staff improve. Therefore, the success of leadership lies in its ability to balance authority with empathy, fostering both accountability and inspiration within the madrasah.

From a theoretical standpoint, these results align with the classical notion of leadership proposed by Tead, who argued that leadership is fundamentally about influencing others to work toward common goals (Tead, 1935). The leadership observed at MI Negeri Aceh Barat Daya reflects this principle through consistent efforts to unify vision and promote participative decision-making. Principals encourage teachers to be involved in institutional planning, thereby strengthening ownership and professional identity. This participatory leadership style enhances teachers' sense of belonging, which in turn increases job satisfaction and improves teaching outcomes (Khoirudin, 2024). Nonetheless, the moderate effect size suggests that leadership alone cannot fully account for performance variations, reaffirming the importance of complementary supports such as professional development and institutional incentives. Table 14 shows a summary of the empirical and theoretical relationships between leadership and teacher performance.

Table 14: The Relationships Between Leadership and Teacher Performance

Aspect	Statistical Evidence	Interpretation	Implication
Path coefficient (0.313, p = 0.042)	Significant positive effect	Leadership enhances motivation and productivity	Leadership is an important but partial driver
Effect size (f² = 0.155)	Medium	Leadership interacts with the environment and competence	A multi-factor approach is needed
Leadership role dimension	Direction, motivation, inclusion	Aligns with Tead's theory of influence and cooperation	Participatory leadership strengthens outcomes

Source: Data Collection, 2025

The Influence of Work Environment on Teacher Performance at MI Negeri Aceh Barat Daya

The work environment has been found to exert a stronger and more consistent effect on teacher performance compared to leadership within MI Negeri Aceh Barat Daya. The statistical analysis reveals a path coefficient of 0.560, a t-value of 3.652, and a p-value of 0.000, supported by a large effect size (f² = 0.498). These results show that environmental conditions are not merely complementary but rather central determinants of teacher effectiveness. (Mukti et al., 2022). A supportive work environment, characterized by adequate physical facilities, access to teaching materials, and manageable workloads, directly enhances teachers' efficiency and instructional outcomes. Equally important are collegial relations, effective communication, and administrative responsiveness, which together foster a sense of belonging and professional satisfaction. When these environmental factors are met, teachers demonstrate higher commitment and lower burnout rates, which positively affect the overall quality of education delivery.

Prior studies corroborate this empirical finding that the work environment is a crucial determinant of teacher motivation and performance in various educational contexts (Yulita Elly, 2020). Teachers tend to perform better when their schools provide comfortable spaces, technological support, and fair supervision practices that reduce occupational stress. The psychological dimension of the environment, specifically the sense of safety, trust, and recognition, serves as a key motivational driver for teachers' sustained engagement (Wahyudi, 2018) Reported that while the work environment significantly affects performance, its influence can vary depending on the level of teacher competence and institutional culture. Similarly, (Dwi lestari, Nina Fapari Arif, 2025) Emphasized that motivation and career development may act as more potent mediators in some instances. Therefore, understanding how these elements interact is essential for creating a balanced and productive teaching ecosystem.

This study contributes by providing empirical evidence from a public madrasah in Aceh Barat Daya, where environmental constraints and cultural expectations uniquely shape teacher experiences. The findings indicate that in settings with limited resources, a favorable school climate can compensate for structural deficiencies by fostering strong interpersonal relationships and shared goals (Mukti et al., 2022). Teachers' perceptions of fairness, recognition, and security strongly influence their sense of belonging and loyalty to the institution. Consequently, the work environment should be regarded not merely as an external factor but as an intrinsic part of professional identity formation and pedagogical commitment. The integration of physical, social,

and psychological aspects of the workplace contributes holistically to sustained teacher effectiveness (Yulita Elly, 2020). Table 15 shows a summary of the empirical and theoretical dimensions of the work environment's influence on teacher performance.

Table 15: The Work Environment's Influence on Teacher Performance

Aspect	Statistical Evidence	Interpretation	Implication
Coefficient (0.560, $p = 0.000$)	Strong positive and significant relationship	Environmental support enhances effectiveness and satisfaction	The work environment is the dominant factor
Effect size ($f^2 = 0.498$)	Large	Indicates substantial contribution to performance variance	Environment outweighs leadership influence
Psychological dimension	Safety, trust, recognition	Strengthens intrinsic motivation and professional engagement	Favorable climate boosts loyalty and job satisfaction
Social and cultural	Collegial relations, shared goals	Builds collective efficacy and institutional commitment	Essential for long-term teacher retention

Source: Data Collection, 2025

The Influence of Principal's Leadership and Work Environment on Teacher Performance at MI Negeri Aceh Barat Daya

When examined simultaneously, the combined influence of principals' leadership and the work environment is statistically significant. The analysis reveals an R-squared value of 0.641, meaning that 64.1% of the variance in teacher performance can be explained jointly by these two factors. In comparison, the remaining 35.9% is attributed to other influences, such as workload, intrinsic motivation, or policy support. The Goodness of Fit (GoF) value of 0.675, along with a positive Q^2, further confirms that the structural model possesses strong explanatory and predictive power. (Voenli, 2021). The acceptance of Ha₃ and rejection of Ho₃ statistically validate the simultaneous effect of leadership and environment on teacher performance. This demonstrates that the synergy between managerial and situational dimensions has a more pronounced effect compared to either variable alone. Thus, principals who combine effective leadership with a supportive work atmosphere can significantly enhance teachers' professional outcomes and classroom engagement.

The findings of this research are consistent with prior studies that underline the complementary relationship between leadership quality and environmental support in influencing teacher performance (Mukti et al., 2022). (Voenli, 2021) Confirmed that teachers working in supportive environments under participatory leaders tend to show higher motivation, responsibility, and instructional creativity. In the context of MI Negeri Aceh Barat Daya, such integration becomes particularly vital due to the dual challenges of resource limitations and cultural expectations. When leadership and environmental factors coexist harmoniously, teachers not only perform their duties more effectively but also demonstrate greater loyalty to the institution. Furthermore, this alignment fosters an atmosphere of collaboration where teachers feel acknowledged, heard, and empowered to innovate. These results show that leadership and environment must be managed as interconnected systems rather than as independent managerial variables.

This study also contributes theoretically by extending the understanding of leadership within Islamic education institutions. It suggests that principals who adopt participatory, communicative, and inspirational leadership styles can create organizational cultures that amplify the benefits of a conducive work environment (Yulita Elly, 2020). In practical terms, this includes involving teachers in decision-making processes related to curriculum development, encouraging open dialogue through regular musyawarah meetings, and ensuring that professional concerns are addressed transparently. Simultaneously, maintaining a safe, well-equipped, and psychologically supportive workplace reinforces teacher motivation and performance. The dual emphasis on leadership behavior and environmental quality thus becomes a strategic pathway for sustainable institutional growth.

Table 16 shows a summary of the combined influence of principal leadership and work environment on teacher performance, including their statistical, theoretical, and managerial implications.

Table 16. Principal Leadership And Work Environment On Teacher Performance

Aspect	Statistical Evidence	Interpretation	Implication
R-square = 0.641	64.1% variance explained jointly	Leadership and environment jointly enhance performance	Combined factors yield a stronger impact than individual influence
GoF = 0.675, Q² positive	Strong explanatory and predictive power	Confirms the validity of the simultaneous effect	Model effectively predicts teacher outcomes
Leadership dimension	Participatory, communicative, inspirational	Builds trust, vision alignment, and motivation	Strengthens teacher collaboration and institutional commitment
Work environment dimension	Safe, supportive, resource-adequate	Enhances job satisfaction and instructional quality	Improves effectiveness under limited resource conditions

Source: Data Collection, 2025

CONCLUSION

This study concludes that both principal leadership and the work environment significantly influence teacher performance at MI Negeri Aceh Barat Daya, with the work environment emerging as the more substantial determinant. The findings highlight that effective leadership, characterized by participatory, communicative, and inspirational practices, must be supported by a conducive social, physical, and psychological environment to sustain teacher productivity. Beyond statistical results, this research addresses a gap in the literature by focusing on Aceh Barat Daya, a region that has received limited scholarly attention. By situating the analysis within this local context, the study offers unique insights into how leadership and workplace conditions interact to shape teacher performance in Islamic primary schools.

Practically, the results suggest that madrasah principals and administrators should prioritize creating safe and supportive work environments, facilitate teacher participation in decision-making, and strengthen communication channels. Policymakers may also utilize these findings to design training and resource allocation strategies that foster both effective leadership and enhanced workplace conditions. Nevertheless, this study is limited to one institution and does not account for other potential variables, such as teacher motivation, welfare, or workload. Future research should broaden its scope to include multiple schools across regions, integrate additional

determinants such as organizational culture or professional competence, and employ longitudinal approaches to capture changes over time.

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