



Improving Teacher Determinants through Work Discipline Moderated by Leadership: An Empirical Study

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Abstract

Purpose: This study aims to examine the influence of competency, training, awareness, and work environment on work discipline, and how these factors, along with work discipline and leadership, affect teacher performance. Additionally, the study explores the role of leadership as a moderating variable in the relationship between work discipline and teacher performance at Islamic private schools in East Java.

Research Methodology: A quantitative research design was employed, using statistical analysis with the Statistical Package for the Social Sciences (SPSS) and Partial Least Squares Structural Equation Modeling (PLS-SEM). Data were collected through questionnaires from 190 respondents selected from a population of 321 permanent teachers in private Islamic schools certified under ISO 9001.

Results: The results indicate that competency, awareness, and work environment have a significant positive effect on work discipline, which, in turn, positively impacts teacher performance. Leadership was found to significantly moderate the relationship between work discipline and teacher performance, enhancing the positive effect of work discipline.

Conclusions: Improving teacher performance can be achieved by enhancing competency, awareness, and work environment, with leadership playing a key role in strengthening the impact of work discipline on performance. Leadership is crucial in fostering an environment that supports teacher productivity and educational quality.

Limitations: The study is limited by its focus on private Islamic schools in East Java with ISO 9001 certification, which may limit the generalizability of the findings. Future research should consider a broader sample and explore additional factors, such as motivation and remuneration, that may influence teacher performance.

Contributions: This study contributes to the field of education management by providing insights into how various factors, such as competency and leadership, influence teacher performance. It also highlights the importance of leadership in moderating the relationship between work discipline and teacher performance, offering valuable implications for school management.

Keywords: *Awareness, Competency, Leadership, Teacher Performance, Training, Work Discipline*

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1. Introduction

Education is a key factor in the development of a country and the direction of human resource development. In Indonesia, improving the quality of education is a top priority; with continuous efforts and strong commitment, it is hoped that the quality of education in Indonesia will continue to improve and provide significant benefits to its citizens (Hidayat et al., 2024). Education, as an integral part of societal life in the era of globalization, must be able to provide and promote the growth and development of skills through intellectual, social, and personal means (Permana & Sudrajat, 2022). The Indonesian government has high hopes of improving the quality of national education. Through the Strategic Plan (Renstra) of the Ministry of Education, Culture, Research, and Technology (Kemendikbudristek) for the years 2022-2024, efforts are being made to develop programs aimed at ensuring the quality of education through school accreditation and accreditation of other institutions, and continuously improving the quality of teachers (Subekti et al., 2024).

In relation to the continuous improvement of education quality in Indonesia, the Ministry of Education, Culture, Research, and Technology has strengthened this through Regulation of the Minister of Education and Culture of the Republic of Indonesia No. 26 of 2016, concerning the Basic and Secondary Education Quality Assurance System (Istiqomah et al., 2025). In Chapter 1, Article 1, it is explained that the measurement of quality in basic and secondary education is based on the National Education Standards (SNP), and in Article 7, it is explained that the SNP is the minimum service criteria for the system applicable throughout the entire territory of the Republic of Indonesia (RI) (Sitopu et al., 2021). Educational institutions or educational units are required to conduct external quality assurance through accreditation as a minimum service requirement in accordance with the National Education Standards (SNP) and are also permitted to conduct quality assurance beyond the minimum requirements specified (Kumar & Hossain, 2017). Aden et al., 2022 shows a strong correlation between school accreditation and educational quality assurance, as all school components are directly or indirectly aligned with the standards set in the SNP. Fahmi et al., 2022 concluded in her research that the quality of education in Indonesia remains significantly lower compared to that in other countries. The main cause of this is the lack of optimization in the effectiveness, efficiency, and standardization of education.

The phenomenon related to the implementation of the quality assurance system in basic and secondary education (Dictamen) in Indonesia is that, based on data from the National Accreditation Agency for Schools/Madrasah (BAN-S/M) in 2020, the results of school/madrasah accreditation in 2020 showed a rating of A at 23.45%, 49.56% received a B rating, 23.89% received a C rating, and 3.08% were not accredited (TT). These data indicate that accreditation using the same instruments for all schools/madrasahs throughout Indonesia has not met the minimum service standards set by the government (Kurniawan & Hariadi, 2022). The government also recognizes that demographic conditions contribute to the quality gap in Indonesian education.

The phenomenon of low academic and non-academic achievement includes the following:

1. According to the World Population Review, published in statistical news (Goodstats, 2022), there are five countries with the best education systems in the world in 2021, namely the United States, the United Kingdom, Germany, Canada, and France. Compared to other ASEAN countries, Indonesia's position is still below that of Singapore, Malaysia, and Thailand.
2. Indonesia's Human Development Index (HDI) ranks 107th out of 189 countries, Indonesia isnesiaishat of II below Singapore, Malaysia, Brunei, and Thailand.
3. In the 2018 PISA mathematics test results, Indonesia was ranked 21st out of 78 participating countries and showed a stagnant trend with no significant improvement in scores over an 18-year

period.

4. Based on UNDP data, Indonesia was ranked 114th with a score of 0.750.
5. According to a survey by Political and Economic Risk Consultants (PERC), the quality of education in Indonesia is ranked last, at 12th out of 12 countries in Asia.
6. The results of the 2020 World Bank Survey on Service Delivery Indicators (SDI) or education service indicators in Indonesia show that the absence rate of school principals is 15%, the absence rate of teachers is 19%, the teacher absence rate in classrooms is 24%, teacher test scores in mathematics are 67%, Indonesian language 61%, general knowledge 16%, student learning outcomes in mathematics are 42%, Indonesian language 87%, and Arabic language 59%.
7. Indonesia's education report card is in the red zone for both literacy and numeracy.
8. National Assessment (AN) results show that only 3% of students have literacy and numeracy skills, meaning that 70% of students still do not understand what they read.
9. The results of a survey on bullying and growth mindset among Indonesian students compared to students in OECD countries showed that 41% (forty-one percent) of Indonesian students reported having experienced bullying several times in a month.

This figure is higher than the OECD average of 23% and indicates that only 29% of Indonesian students disagree with the statement that “intelligence cannot be changed much,” far below the OECD average of 63% (sixty-three percent). This means that Indonesian students have a low mindset of progress, as they do not feel the need to improve academically (Rosyidi & Suyanto, 2024). One of the causes of low achievement, quality of education, and educational outcomes in Indonesia is the low quality of teachers (Lasminto et al., 2025). Teachers impart knowledge to students. In the Teachers and Lecturers Law, Chapter VI on Standards for Educators and Educational Personnel, Article 28 explains that a teacher must have at least four basic competencies, namely, competence obtained through professional education (Layek & Koodamara, 2024). At the operational level, teachers are the determinants of educational success through their performance at the institutional, instructional and experiential levels (Naimar et al., 2024).

Based on data on educational achievement and quality in Indonesia, it can be said that one of the causes is teacher quality. Teacher performance greatly determines the success of education in schools. Therefore, teachers must work optimally to contribute to school productivity (Nasution & Priangkatara, 2022). Good teacher performance stems from a good work discipline. Discipline is considered the primary foundation for achieving educational goals in every educational institution (Nurani & Sarino, 2017). Teacher discipline encompasses not only classroom order but also the responsibility and commitment to teaching duties. The extent to which teachers can maintain high standards in performing their duties can be seen through an analysis of this level of discipline (Albuni et al., 2022). Amini et al., 2022 defines discipline as the willingness and readiness of an individual to comply with and adhere to the norms that apply around them, and employee discipline greatly influences the goals of an institution. Meanwhile, according to Zulfiter et al., 2023, the most important operational function of human resource management (HRM) is discipline, as the level of teacher discipline positively correlates with the level of work performance that can be achieved.

Based on the actual conditions of educational issues in Indonesia, it can be emphasized that educational institutions that wish to survive and thrive require a quality assurance strategy that goes beyond mere government accreditation, which is based solely on the minimum service criteria of the National Education Standards (SNP) applicable to various types of schools and school conditions in Indonesia (Octoviani et al., 2022). As a strategy to improve teacher performance, educational institutions should enhance

their measurement indicators with minimum service standards (Ristam & Purnomo, 2024). The “plus” component can be tailored to the specific development needs and quality objectives of each school (Oentari & Asmawan, 2023). ISO 9001 is one strategy that educational institutions can use as an additional measurement indicator after meeting the minimum service standards set by the government through accreditation. Zulaida and Parwoto, 2023 also suggest that organizational governance can be implemented by expanding governance beyond the government: if the government itself can no longer provide adequate governance, then new sources of authority must emerge to regulate. A new collaborative government-private sector governance model is needed to expand governance beyond existing government institutions (Panjaitan et al., 2025). This study examines strategies for improving teacher performance by selecting variables that are requirements in the implementation of ISO 9001 as the basis for additional quality strategies for educational institutions and integrating data from the Ministry of Education and Culture’s 2020-2024 Strategic Plan, which includes Ministry of Education and Culture Regulation No. 28 of 2016 on the Quality Assurance System for Basic and Secondary Education as a reference for school/educational institution development. Based on this government reference, this study selected schools as its population, specifically private Islamic schools with ISO 9001 certification/schools that ensure their quality through government-mandated accreditation and strengthen their quality assurance through ISO 9001.

Based on the above description, along with several literature sources and empirical data/existing conditions in Indonesian education, the researcher identified several gaps, including the following:

1. Low student achievement or learning outcomes, both regionally and internationally.
2. Limited opportunities or quotas for teacher professional certification from the government.
3. UKG results that are not relevant to the professional requirements for certified teachers.
4. Non-compliance and inconsistency with the requirements or regulations of teacher professionalism.
5. A quality assurance system that is not relevant demographically and to the diversity of school quality.
6. Government regulations related to teacher performance measurement.
7. Leadership, namely the role of top management/school principals with their commitment to the school quality assurance system.

From the gap that occurred, researchers were encouraged to conduct further research as an effort to complement and minimize the gap and build sustainability in the quality of performance of both human resources and educational institutions/agencies. This research brought up a series of variables that have an influence on Work Discipline and Teacher Performance as well as the Leadership’s role, which uses management commitment as an indicator to strengthen the relationship between Work Discipline and Teacher Performance. Previous research has not provided a systematic solution to the issues of Teacher Performance and Work Discipline, which has impacted the quality of learning outcomes that do not align with the targets set by the institution and the Indonesian government. Among the factors contributing to low student academic performance as a result of Teacher Performance, equally important is the low awareness of teachers regarding their responsibilities toward the essence of education.

2. Literature Review

2.1 Competency and Teacher Performance

Competency is defined as the ability of teachers to perform tasks effectively, including knowledge, skills, and attitudes required for teaching. Previous studies have shown that competency directly influences

teacher performance, as teachers with higher competency levels are more capable of achieving better teaching outcomes (Andrianto et al., 2023; Syafitri et al., 2022). Teacher competency is linked to various aspects of education, such as instructional quality, student engagement, and overall school performance (Fahmi et al., 2022).

2.2 Training and Teacher Performance

Training is considered an essential factor in improving teacher performance. It encompasses professional development programs that enhance teaching skills, knowledge, and pedagogical strategies. While training programs are integral to improving teacher performance, some studies have reported mixed results on their effectiveness, citing challenges such as poor alignment with actual classroom needs (Atika et al., 2022). However, proper training programs tailored to teachers' needs have been shown to positively affect work discipline and teacher performance (Badrun et al., 2022).

2.3 Awareness and Teacher Performance

Awareness refers to the teachers' understanding of their roles, responsibilities, and the importance of their work in shaping student outcomes. Awareness is strongly correlated with teacher performance, as teachers who are more aware of their duties tend to show higher levels of engagement and commitment (Bukhari et al., 2023). Awareness influences not only the quality of classroom instruction but also the way teachers manage their time and resources to meet educational goals.

2.4 Work Environment and Teacher Performance

The work environment, including factors such as classroom conditions, school infrastructure, and administrative support, plays a significant role in teacher performance. A conducive work environment enhances teachers' well-being, reduces stress, and encourages effective teaching (Fadlianto & Sulistyowati, 2022). A supportive environment promotes professional growth and enables teachers to perform their duties optimally. However, some studies suggest that while the work environment is important, its impact may be less significant than other variables like competency and awareness (Hakim et al., 2021).

3. Methodology

This study used a quantitative research design. According to Panjaitan et al., 2025 quantitative research methods are based on positivism philosophy, which is used to study specific populations or samples, collect data using research instruments, and analyze data quantitatively or statistically, with the aim of testing predetermined hypotheses. Population and Sample: The population defined in this study is 321 permanent teachers from private Islamic schools in East Java that have implemented ISO 9001. The sample size was calculated Using the Slovin formula with a tolerance of 5%. The sample size was 178, rounded up to 190 participants. Data collection in this study used a questionnaire containing questions about respondents' data and their perceptions of variables related to this study. The data analysis techniques used in this study include questionnaire testing, classical assumption testing, descriptive statistics, correlation analysis, and hypothesis testing. Based on the research conceptual framework, there are two model structure equations in this study, namely regression equation models 1 and 2, as follows:

Model 1: Testing Hypotheses H_1 to H_4

$$Z = \lambda_1 X_1 + \lambda_2 X_2 + \lambda_3 X_3 + \lambda_4 X_4 + e$$

Model 2: Testing Hypotheses H_5 to H_{11}

$$Y = \lambda_1 X_1 + \lambda_2 X_2 + \lambda_3 X_3 + \lambda_4 X_4 + \lambda_5 Z + \lambda_6 M + \lambda_7 MZ + e$$

The research model refers to the conceptual framework and methods used to answer research questions to achieve the following predetermined research objectives.

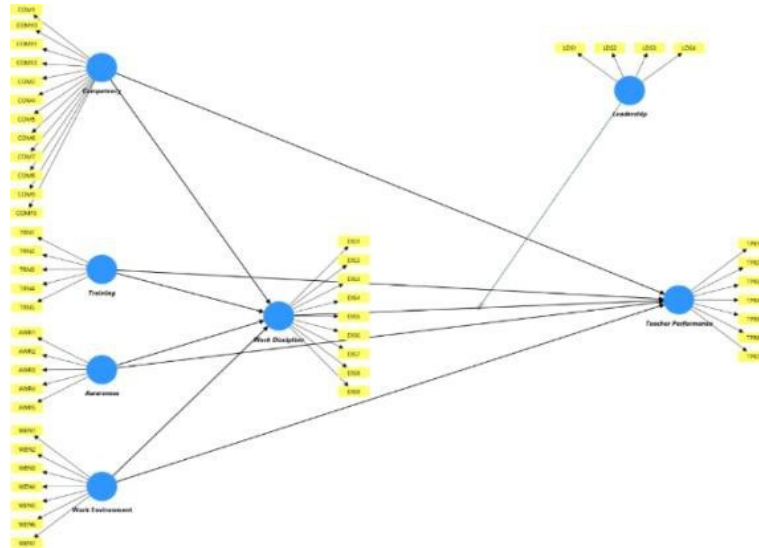


Figure 1. Research Model

4. Results and Discussion

The results of the research based on convergent validity testing aim to test whether the indicator variables used are truly significant in terms of reflecting the construct or the latent variables. A reflective indicator is said to be valid if the outer loading/factor loading value is greater than 0.7 [Hair and Alamer, 2022](#). This means that if a reflective indicator has an outer loading value of less than 0.7, it will be removed and retested. The results of the convergent validity analysis are presented below.

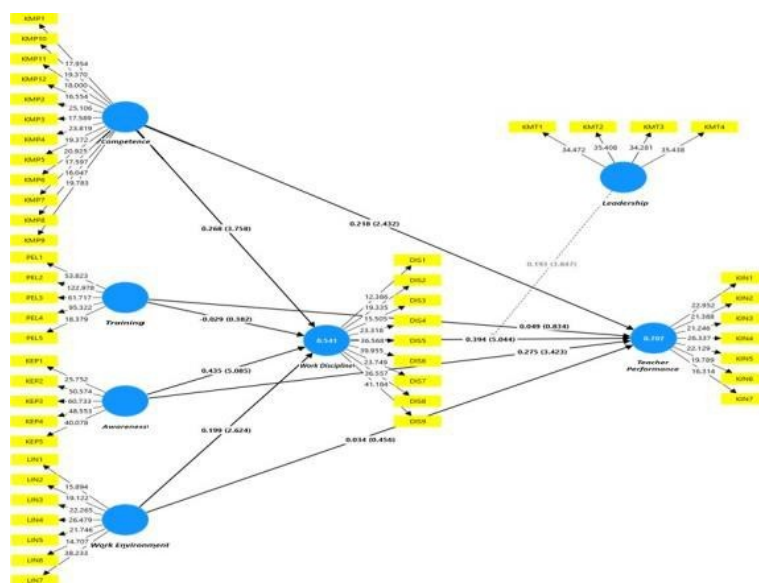


Figure 2. Validity Testing Based on Outer Loading

Discriminant validity testing was also conducted to ensure that each concept of each latent variable was

different from the other variables. Discriminant validity can be seen through the Fornell-Lacker Criterion test, namely, the model has good discriminant validity if the AVE square value of each exogenous construct (value on the diagonal) exceeds the correlation between that construct, and other constructs (values below the diagonal) (Henseler et al., 2015). The results of the Fornell-Larcker criterion test are as follows:

Table 1. Discriminant Validity Testing: Fornell Larcker Criterion

	Work Discipline	Awareness	Teacher Performance	Leadership	Competency	Work Environment	Training
Work Discipline	0.821	0.674	0.693	0.548	0.583	0.527	0.451
Awareness	0.674	0.896	0.742	0.596	0.668	0.524	0.588
Teacher Performance	0.693	0.742	0.752	0.620	0.648	0.636	0.576
Leadership	0.548	0.596	0.620	0.862	0.490	0.420	0.556
Competency	0.583	0.668	0.648	0.490	0.747	0.531	0.531
Work Environment	0.527	0.524	0.636	0.420	0.531	0.787	0.413
Training	0.451	0.588	0.576	0.556	0.531	0.413	0.911

The results of the research hypothesis testing data analysis are presented in Table 4.

Table 2. Hypothesis Testing

Relationship	Coeff / Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (O/STDEV)	P Values	Description
H₁ : Competency → Work Discipline → Teacher Performance	0.268	0.271	0.071	3.758	0.000*	Positive & Significant
H₂ : Training → Work Discipline → Teacher Performance	-0.029	0.027	0.075	0.382	0.351	Negative & no Significant
H₃ : Awareness → Work Discipline → Teacher Performance	0.435	0.431	0.058	5.085	0.000*	Positive & Significant
H₄ : Work Environment → Work Discipline → Teacher Performance	0.199	0.204	0.076	2.624	0.004*	Positive & Significant
H₅ : Competency → Teacher Performance	0.218	0.216	0.090	2.432	0.008*	Positive & Significant
H₆ : Training → Teacher Performance	0.049	0.052	0.062	0.834	0.202	Positive & Insignificant

Relationship	Coeff / Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (O/STDEV)	P Values	Description
<i>H</i> ₇ : Awareness → Teacher Performance	0.275	0.260	0.075	3.423	0.000*	Positive & Significant Effect
<i>H</i> ₈ : Work Environment → Teacher Performance	0.034	0.031	0.074	0.456	0.324	Positive & Insignificant Effect
<i>H</i> ₉ : Work Discipline → Teacher Performance	0.394	0.387	0.078	5.044	0.000*	Positive & Significant Effect
<i>H</i> ₁₀ : Leadership → Teacher Performance	0.156	0.153	0.076	2.062	0.020*	Positive & Significant Effect
<i>H</i> ₁₁ : Leadership × Work Discipline → Teacher Performance	0.193	0.197	0.055	3.847	0.000*	Positive & Significant Effect

*Significant at $\alpha = 5\%$ (p-value < 0.05)

Based on the hypothesis test table, it can be observed that:

*H*₁: Competency positively and significantly affects work discipline.

*H*₂: Training has no positive or significant effect on work discipline.

*H*₃: Awareness has a positive and significant effect on work discipline.

*H*₄: The work environment has a positive and significant effect on work discipline.

*H*₅: Competency has a positive and significant effect on Teacher Performance.

*H*₆: Training has a positive but statistically insignificant effect on Teacher Performance.

*H*₇: Awareness has a positive and significant effect on Teacher Performance.

*H*₈: Work Environment has a positive but statistically insignificant effect on teacher performance.

*H*₉: Work Discipline has a positive and statistically significant effect on Teacher Performance.

*H*₁₀: Leadership has a positive and significant effect on teacher performance. *H*₁₁: Leadership positively moderates (strengthens) and significantly influences the effect of Work Discipline on Teacher Performance.

An intervening test was conducted to determine whether the relationship through a mediating variable was significantly capable of mediating the relationship. The results of the intervening test calculations are presented below.

Table 3. Intervening Variable Test

Path	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (O/STDEV)	P Values
Awareness → Work Discipline → Teacher Performance	0.171	0.168	0.049	3.473	0.000
Competency → Work Discipline → Teacher Performance	0.105	0.103	0.030	3.523	0.000
Work Environment → Work Discipline → Teacher Performance	0.078	0.079	0.035	2.219	0.013
Training → Work Discipline → Teacher Performance	-0.011	-0.009	0.029	0.392	0.348

A comprehensive discussion of the intervening variables based on the results of structural model analysis using the Partial Least Squares (PLS) method provided information on the influence of several variables on Teacher Performance. The results showed that three variables had a significant positive influence on Teacher Performance through work discipline: Awareness, Competency, and Work Environment.

1. The awareness variable shows the strongest influence on Teacher Performance through work discipline, with a coefficient value of 0.171. This result is reinforced by a t-statistic value of 3.473 and a significance value (p-value) of 0.000, which means that the influence is significant. This means that the higher the teachers' awareness, the better their performance.
2. Second, the Competency variable was also proven to have a significant effect on Teacher Performance through work Discipline, with a coefficient value of 0.105, a t-statistic of 3.523, and a p-value of 0.000. This shows that competency in carrying out tasks and responsibilities also encourages an increase in the quality of Teacher Performance.
3. Work Environment also has a positive and significant influence through Work Discipline has a coefficient value of 0.078, a t-statistic of 2.219, and a p-value of 0.013. This shows that a conducive, comfortable, and supportive Work Environment contributes to improving Teacher Performance.
4. Unlike the previous three variables, training did not significantly influence Teacher Performance through work discipline. The coefficient value is negative (-0.011), with a t-statistic of 0.392 and a p-value of 0.348. This indicates that the training provided has not had a tangible impact on improving Teacher Performance. This may be due to the training material not being aligned with teachers' needs, ineffective training methods, or the implementation of training outcomes in the field was not optimal.

5. Conclusions

This study demonstrates that competency, awareness, and work environment have a positive and significant impact on work discipline, which in turn positively influences teacher performance. Training, however, was found to have an insignificant effect on work discipline and teacher performance, which may be attributed to the misalignment of training content with the actual needs of the teachers or ineffective implementation of training methods. Furthermore, leadership plays a crucial role by posi-

tively moderating the relationship between work discipline and teacher performance, highlighting the importance of strong leadership in enhancing work discipline and performance outcomes. The findings underscore the need for educational institutions, particularly private Islamic schools, to focus on improving teacher competency, fostering a supportive work environment, and reinforcing leadership commitment to maintain high standards of teacher performance. This research contributes to the literature on human resource management in education by emphasizing the interconnectedness of work discipline, teacher performance, and leadership, and offers practical insights for improving teacher effectiveness in schools.

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Author Contributions

SR conceptualized the study, collected the data, and drafted the manuscript. EY contributed to the methodology and data analysis. LRRUT and SM assisted in the literature review and discussion. SS and AA contributed to the interpretation of results and manuscript revision. SR and AM provided valuable feedback and revisions to the manuscript. All authors read and approved the final manuscript for publication.

Conflicts of Interest

The authors declare no conflict of interest in the publication of this research. This study was conducted independently, and there are no financial or personal influences on the results.

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