

THE INFLUENCE OF ACADEMIC SUPERVISION AND PROFESSIONAL COMPETENCE ON TEACHER PERFORMANCE THROUGH WORK COMMITMENT

Wulan Devinta Ahmanda*

Institut Agama Islam Negeri Ponorogo, Indonesia

E-mail: wulandevinta02@gmail.com

Rihab Wit Daryono

Institut Agama Islam Negeri Ponorogo, Indonesia

E-mail: rihabwit.daryono@iainponorogo.ac.id



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*Corresponding Author

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Abstract

The background of this study is based on the importance of the quality of education influenced by teacher performance, which is often influenced by supervision support and competency development. This study aims to analyze the effect of academic supervision and professional competence on teacher performance at Madrasah Tsanawiyah, with work commitment as a mediator. The research method used is quantitative, with data collection through questionnaires distributed to 60 teachers, principals, and education personnel at MTs Al Islam Joresan Ponorogo. The sampling technique used is probability sampling. Data analysis was carried out using PLS-SEM, chosen because of its ability to test complex relationships between variables and facilitate structural modeling. The study results indicate that academic supervision and professional competence significantly affect teacher performance, which is mediated by work commitment. This finding indicates that improvements in supervision and professional competence can increase teacher work commitment, which in turn contributes to improving their performance. The implications of this study emphasize the need to develop a more structured academic supervision program and ongoing professional competence training to improve the quality of education. The contribution of this research lies in enriching the literature on the relationship between supervision, competence, and teacher performance, as well as providing insight for policymakers in formulating strategies to improve the quality of education.

Keywords: Academic supervision, professional competency, teacher performance, work commitment, PLS-SEM.

Abstrak

Latar belakang penelitian ini didasari oleh pentingnya kualitas pendidikan yang dipengaruhi oleh kinerja guru, yang sering kali dipengaruhi oleh dukungan supervisi dan pengembangan kompetensi. Penelitian ini bertujuan untuk menganalisis pengaruh supervisi akademik dan kompetensi profesional terhadap kinerja guru di Madrasah Tsanawiyah, dengan komitmen kerja sebagai mediator. Metode penelitian yang digunakan adalah pendekatan kuantitatif, dengan pengumpulan data melalui kuesioner yang disebarkan kepada 60 guru, kepala sekolah, dan tenaga kependidikan di MTs Al Islam Joresan Ponorogo. Teknik pengambilan sampel yang digunakan adalah probability sampling. Analisis data dilakukan menggunakan PLS-SEM, yang dipilih karena kemampuannya dalam menguji hubungan kompleks antara variabel dan memfasilitasi pemodelan struktural. Hasil penelitian menunjukkan bahwa supervisi akademik dan kompetensi profesional memiliki pengaruh signifikan terhadap kinerja guru, yang dimediasi oleh komitmen kerja. Temuan ini mengindikasikan bahwa peningkatan dalam supervisi dan kompetensi profesional dapat meningkatkan komitmen kerja guru, yang pada gilirannya berkontribusi pada peningkatan kinerja mereka. Implikasi dari penelitian ini menekankan perlunya pengembangan program supervisi akademik yang lebih terstruktur dan pelatihan kompetensi profesional yang berkelanjutan untuk meningkatkan kualitas pendidikan. Kontribusi penelitian ini terletak pada pengayaan literatur mengenai hubungan antara supervisi, kompetensi, dan kinerja guru, serta memberikan wawasan bagi pengambil kebijakan dalam merumuskan strategi peningkatan kualitas pendidikan.

Kata Kunci: Supervisi akademik, kompetensi profesional, kinerja guru, komitmen kerja, PLS-SEM.

Introduction

Teacher performance is critical to determining the quality of education in a school. In addition, the

quality of teachers' work can be measured by how well they cooperate with colleagues, parents, and other groups. Successful teachers usually can work

together in teams, share knowledge and experience, and support the school's efforts to achieve educational goals.¹. These teachers also tend to engage in extracurricular activities, student coaching, and self-development consistently to improve their abilities as educators.².

Teacher performance is one of the factors that determine the quality of education in Madrasah Tsanawiyah. In today's digital era, the influence of educational technology, such as Learning Management Systems (LMS), is increasingly important in the context of academic supervision. These technologies not only facilitate teacher supervision and coaching but also increase the effectiveness of communication and collaboration between teachers and supervisors.³. By utilizing LMS, the supervision process can be conducted in a more structured and measurable manner, allowing supervisors to provide faster and more relevant feedback.

Recent literature suggests that technology integration in academic supervision can improve

teacher engagement and teaching effectiveness. Several studies have linked LMS use to improved teacher performance, suggesting that technology can be an effective tool in supporting professional development.^{4,5}. In addition, previous studies have also shown that teachers' work commitment is closely related to the efficient application of professional competencies, where highly committed teachers tend to be more proactive in developing their skills.^{6,7}.

Academic supervision is an important component of education that aims to improve the quality of learning in schools⁸. Academic supervisors, also known as academic supervisors, are responsible for providing guidance, support, and feedback to teachers in their efforts to improve their abilities and performance⁹. With academic supervision, teachers are expected to discover problems in their learning and receive constructive criticism¹⁰. This will have a positive impact on teachers' motivation and commitment to their profession, as well as their performance in

¹ Singgih Bektiarso, Iwan Wicaksono, and Aris Singgih Budiarto, "The Effect of Job Satisfaction and Work Motivation on the Performance of Junior High School Teachers in Jember Regency," *AIP Conference Proceedings* 2679, no. 1 (January 4, 2023): 1–17, <https://doi.org/10.1063/5.0111374>.

² Michael B. Cahapay and Nathaniel F. Bangoc II, "Technostress, Work Performance, Job Satisfaction, and Career Commitment of Teachers amid COVID-19 Crisis in the Philippines," *IJERI: International Journal of Educational Research and Innovation* 9, no. 16 (December 1, 2021): 260–75, <https://doi.org/10.46661/ijeri.6145>.

³ Muhammad Qamaruzzaman et al., "Implementasi Supervisi Akademik Berbasis Digital," *Literasi: Jurnal Ilmu Pendidikan* 15, no. 2 (July 31, 2024): 141–51, [https://doi.org/10.21927/literasi.2024.15\(2\).141-151](https://doi.org/10.21927/literasi.2024.15(2).141-151).

⁴ Zulhijjah Zulhijjah, "Supervisi Akademik Kepala Madrasah Dalam Peningkatan Kinerja Guru Menghadapi Era Society 5.0," *Journal on Education* 6, no. 4 (June 21, 2024): 21403–17, <https://doi.org/10.31004/joe.v6i4.6291>.

⁵ Nani Tursina and Rudiansyah Rudiansyah, "Integrasi Supervisi Akademik Dalam Kepemimpinan Pendidikan Untuk Meningkatkan Kinerja Gurudi Era Pembelajaran Abad-21," *Journal on Education* 6, no. 4 (May 10, 2024): 18161–75, <https://doi.org/10.31004/joe.v6i4.5757>.

⁶ Mardhiyah Mardhiyah, "Pengaruh Supervisi Kepala Madrasah Dan Komitmen Kerja Guru Terhadap

Profesionalitas Guru Pada Madrasah Tsanawiyah Negeri 1 Kota Pekanbaru," *Journal of Education and Teaching* 2, no. 2 (August 15, 2021): 225–35, <https://doi.org/10.24014/jete.v2i2.13881>.

⁷ Rita Hayati, Yasir Arafat, and Artanti Puspita Sari, "Pengaruh Komitmen Organisasi Dan Motivasi Kerja Terhadap Kinerja Guru," *JMKSP (Jurnal Manajemen, Kepemimpinan, Dan Supervisi Pendidikan)* 5, no. 2 (April 16, 2020): 100–111, <https://doi.org/10.31851/jmksp.v5i2.3753>.

⁸ Arif Saefudin, "Modern Leadership and Work Balance: Academic Supervision of Higher Education Performance," *Journal on Education* 6, no. 4 (June 13, 2024): 20682–92, <https://doi.org/10.31004/joe.v6i4.6175>.

⁹ Hendro Prasetyono, Agus Abdillah, and Dona Fitria, "Academic Supervision toward Teacher's Performance through Motivation as Intervening Variable," *Journal of Education and Learning (EduLearn)* 12, no. 2 (May 1, 2018): 188–97, <https://doi.org/10.11591/edulearn.v12i2.7324>.

¹⁰ Andreas Fredyansa Harwisaputra, Athok Fu'adi, and Rihab Wit Daryono, "The Influence of Academic Supervision and Professional Learning Community (PLC) on Teacher Professional Competency: Does the Mediation of Self-Confidence Matter?," *Didaktika: Jurnal Kependidikan* 13, no. 3 (July 24, 2024): 3087–3104, <https://doi.org/10.58230/27454312.629>.

achieving learning objectives. Therefore, research looking at how academic supervision affects teacher performance is highly relevant.

The focus of this study is to explore the quantitative influence of academic supervision on teacher performance, particularly in the aspect of student evaluation skills. This ability is very important in an educational context, as good evaluation can improve the learning process and student learning outcomes.¹¹. In addition, this study will also discuss the impact of innovative supervision methods, such as the use of technology in supervision, on teacher motivation. Innovative methods are expected to create a more supportive work environment and motivate teachers to excel.

The novelty of this study lies in the technology-based approach used in academic supervision. The novelty of this study lies in the integrative approach that combines academic supervision, professional competence, and work commitment as interacting variables in influencing teacher performance. This research not only expands the understanding of the factors that influence teacher performance but also provides new insights into the role of work commitment as a significant mediator.

The research questions raised in this study are, (1) what is the effect of academic supervision, professional competence, and work commitment on teacher performance, (2) what is the impact of work commitment in mediating the effect of academic supervision and professional competence on teacher performance. These questions are designed to address gaps in the existing literature, especially related to the influence

of academic supervision and professional competence on teacher performance.

Using PLS-SEM, this study can identify and measure the direct and indirect effects of academic supervision and professional competence on teacher performance, as well as understand the dynamics of interactions between variables in more depth. The contribution of this research is very important, especially in the context of education in Madrasah Tsanawiyah, where teacher professional development is often neglected. The results are expected to provide practical recommendations for policymakers and educational institutions to design more effective supervision programs that support the development of teachers' professional competencies and ultimately improve the overall quality of education.

Research Method

This type of research uses quantitative analysis with data collection techniques using a questionnaire.¹² This research design uses an explanatory and correlational approach using Partial Least Squares Structural Equation Modeling (PLS-SEM) which is an approach used to explore the relationship between variables in a conceptual model. PLS-SEM is a multivariate statistical method used to analyze the relationship between latent or measured variables in a structural model.¹³

Using this approach, this study combines explanatory and correlational elements to better understand the complexity of the relationships between variables in the conceptual model¹⁴. PLS-SEM allows researchers to test the model holistically, including identifying cause-effect relationships and correlation relationships between

¹¹ Yudhi Saparudin, "Supervisi Akademik untuk Meningkatkan Kemampuan Guru Membuat Penilaian Sikap Berbasis Literasi Digital," *Jurnal Ilmiah Edukasia* 1, no. 1 (January 20, 2021): 80–91, <https://doi.org/10.26877/jie.v1i1.7967>.

¹² Luthfi Dhimas Widayanto et al., "Implementation of the Education and Training Program Seen from the CIPPO Perspective," *Journal of Education Research and Evaluation* 5, no. 4 (August 4, 2021): 614–23, <https://doi.org/10.23887/jere.v5i4.36826>.

¹³ Azhar Fauzan et al., "The Effect of Internship and Work Motivation on Students' Work Readiness in Vocational Education: PLS-SEM Approach," *Journal of Innovation in Educational and Cultural Research* 4, no. 1 (January 10, 2023): 26–34, <https://doi.org/10.46843/jiecr.v4i1.413>.

¹⁴ Dimah Al-Fraihat et al., "Evaluating E-Learning Systems Success: An Empirical Study," *Computers in Human Behavior* 102, no. 2 (January 2020): 67–86, <https://doi.org/10.1016/j.chb.2019.08.004>.

variables, thus providing a deeper understanding of the observed phenomenon. The participants in this study were 60 teachers, 1 madrasah head, deputy madrasah head, and education personnel at MTs Al Islam Joresan, Ponorogo, East Java, Indonesia.

The data collection technique used in this study was a questionnaire with four variables.^{15,16}. The research was designed with explanatory and correlational approaches to determine the relationship between the independent variables (Academic Supervision and Professional Competence), mediation (Job Commitment), and the dependent variable (Teacher Performance). This study uses a Likert scale consisting of 4 alternative answers from strongly agree to strongly disagree.¹⁷. Data collection was conducted using the survey method through Google Forms. The research instrument used in this study consists of indicators adopted and developed from the results

of previous studies in related literature. Researchers conducted an in-depth study of various literature sources to identify indicators that are relevant and valid in measuring the variables studied. Thus, the indicators used are not only based on the assumptions of researchers but also supported by empirical evidence from previous studies.

In addition, to ensure the validity and reliability of the research instruments, researchers conducted a construct validity test using convergent and discriminant validity tests and the reliability of the indicators that had been developed. With this approach, the instruments used in this study are reliable and valid in measuring the variables studied, so that the research results can make a significant contribution to the understanding of teacher performance. The research instrument variables are shown in Table 1.

Table 1. Construct of Research Variables

Variable	Indicator	Construction	References
Academic Supervision (X1)	Technology integration	AS1	(Harwisaputra et al., 2024; Qamaruzzaman et al., 2024; Tursina & Rudiansyah, 2024; Zulhijjah, 2024)
	Mastery of the material	AS 2	
	Attitude and character development	AS 3	
	Classroom management	AS 4	
	Student evaluation ability	AS 5	
Professional Competencies (x2)	Technical knowledge	PC 1	(Istiqomah et al., 2024; Rachmawati & Suyatno, 2021; Siri et al., 2020)
	Professional ethics	PC 2	
	Innovation and creativity	PC 3	
	Practical skills	PC 4	
	Analytical skills	PC 5	
	Problem-solving skills	PC 6	
Teacher Performance (Y)	Active in developing innovative learning methods	TP 1	(Bektiarso et al., 2023; Herman & Khalaf, 2023; Prasetyono et al., 2018)
	Teaching skills	TP 2	
	Interaction with students	TP 3	
	Involvement in school activities	TP 4	
	Student character development	TP 5	
	Skills to assess and provide feedback on student performance	TP 6	

¹⁵ Fitri Ayu Fatimah, Retno Widyaningrum, and Rihab Wit Daryono, "Religiosity Through Students' Self-Awareness: Analysis Of The Influence Of Screen Time Media And The Official Gus Iqdam Youtube Channel," *POTENSLA: Jurnal Kependidikan Islam* 10, no. 1 (June 30, 2024): 33–55, <https://doi.org/10.24014/potensia.v10i1.29615>.

¹⁶ Andika Ikhfa Nurdian et al., "Exploring The Influence of Project for Strengthening the Profile of Pancasila Students and School Culture to Character Building:

The Mediating Role of Student Self-Awareness," *G-Couns: Jurnal Bimbingan Dan Konseling* 8, no. 3 (June 20, 2024): 1716–32, <https://doi.org/10.31316/gcouns.v8i3.6075>.

¹⁷ Puspa Widyastuti et al., "The Mediation Role of University Environment in the Relationship between Self-Efficacy and Family Environment on Entrepreneurial Education Interest: A PLS-SEM Approach," *Indonesian Journal on Learning and Advanced Education (IJOLAE)* 5, no. 3 (September 30, 2023): 295–310, <https://doi.org/10.23917/ijolae.v5i3.22015>.

Variable	Indicator	Construction	References
	Ability to build cooperation with school stakeholders	TP 7	
Work	Attendance and punctuality	WC 1	(Ahad et al., 2021;
Commitment	Collaboration and cooperation	WC 2	Hayati et al., 2020;
(Z)	Responsiveness to student needs	WC 3	Mardhiyah, 2021;
	Teaching quality	WC 4	Rachmawati &
	Commitment to the school's progress	WC 5	Suyatno, 2021)
	Compliance with Professional standards	WC 6	

The statistical analysis of this study uses the PLS-SEM measurement technique. The outer model testing stage is the measurement model testing stage which aims to prove the validity and estimate the reliability of indicators and constructs. Some of the requirements that must be met are the indicator loading factor ($\lambda > 0.70$), and the reflective construct AVE (> 0.50)^{18,19}. Reliability estimation uses Cronbach Alpha, Rho_A, and CR values (> 0.70). The goodness of fit model testing stage aims to test the predictive power of the model and the feasibility of the model. The criteria that must be met include predictive relevance to see the predictive power of the model on blindfolding output.^{20,21} The inner model testing stage is to test the significance of 5 direct effects (H-DIR1-5) and 2 indirect (mediating role H-IND1-2). To answer the 2 research questions posed, it is necessary to formulate 7 hypotheses that can be tested. The hypotheses proposed based on these research questions are as follows:

Hypothesis 1 (H-DIR1): There is a positive and significant influence between academic supervision and teachers' work commitment.

Hypothesis 2 (H-DIR2): There is a positive and significant influence between academic supervision and teacher performance.

Hypothesis 3 (H-DIR3): There is a positive and significant influence between professional competence and teachers' work commitment.

Hypothesis 4 (H-DIR4): There is a positive and significant influence between professional competence and teacher performance.

Hypothesis 5 (H-DIR5): There is a positive and significant influence between work commitment and teacher performance.

Hypothesis 6 (H-INDIR1): Work commitment plays a significant mediator in the influence of academic supervision on teacher performance.

Hypothesis 7 (H-INDIR2): Work commitment plays a significant role as a mediator in the influence of professional competence on teacher performance.

By formulating these hypotheses, the research is more focused on testing the relationship between variables and contributes to a clearer understanding of the factors that influence teacher performance.

Findings and Discussion

Findings

Measurement Model Evaluation

Evaluation of the measurement model is important to ensure that the indicators used to measure constructs or latent variables are in accordance with the research objectives.²²

¹⁸ Joseph Hair and Abdullah Alamer, "Partial Least Squares Structural Equation Modeling (PLS-SEM) in Second Language and Education Research: Guidelines Using an Applied Example," *Research Methods in Applied Linguistics* 1, no. 3 (December 1, 2022): 1–21, <https://doi.org/10.1016/j.rmal.2022.100027>.

¹⁹ Sidiq Supriyanto et al., "The Influence of Internship Experience and Work Motivation on Work Readiness in Vocational Students: PLS-SEM Analysis," *Indonesian Journal on Learning and Advanced Education (IJOLAE)* 5, no. 1 (December 14, 2022): 32–44, <https://doi.org/10.23917/ijolae.v5i1.20033>.

²⁰ Rihab Wit Daryono et al., "An Empirical Study to Evaluate the Student Competency of Vocational Education," *International Journal of Evaluation and Research in Education (IJERE)* 12, no. 2 (June 1, 2023): 1079–86, <https://doi.org/10.11591/ijere.v12i2.22805>.

²¹ Valentinus Lilik Hariyanto et al., "A Framework for Measuring the Level of Achievement of Vocational Students Competency of Architecture Education," *Journal of Technology and Science Education* 12, no. 1 (March 21, 2022): 157–71, <https://doi.org/10.3926/jotse.1188>.

²² Ahmad Kosim Purnomo, Moh Munir, and Rihab Wit Daryono, "The Role of Self-Awareness in Mediating the

Analyzing the relationship between the indicators and the construct being measured can ensure that the indicators truly reflect the intended aspects of the construct. By analyzing factor load, reliability,

and discriminant validity, researchers can decide which indicators should be included in the analysis and which should be eliminated.

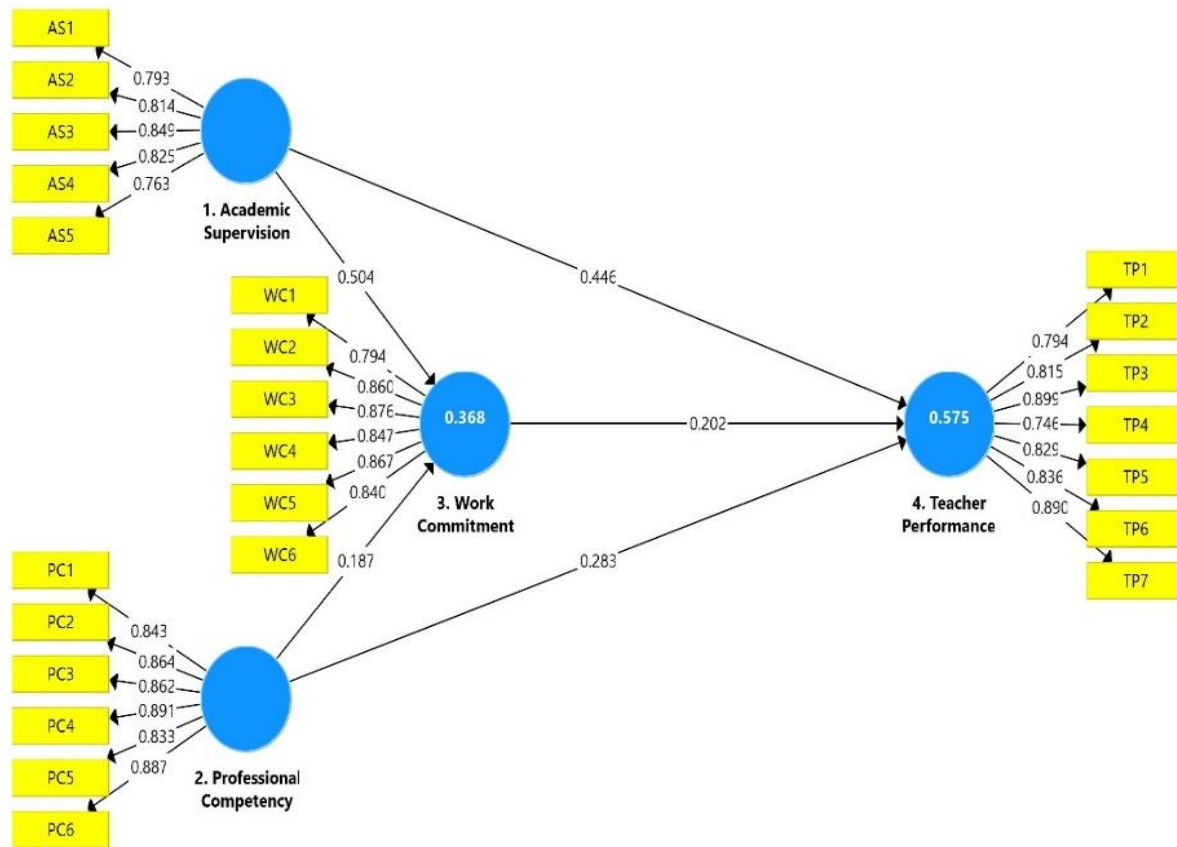


Figure 1. Measurement Model Evaluation

Convergent validity in PLS-SEM indicates how well the indicators or manifestation variables used to measure the construct match the actual construct.²³ The higher the convergent validity, the better the quality of the construct measurement. Researchers can test the consistency between indicators used to measure the same construct by measuring convergent validity.

Convergent validity helps to ensure that the interpretation of the results of the PLS-SEM analysis truly reflects the construct that is intended to be measured. This is important to ensure the accuracy and reliability of research findings. Table 1 below shows the results of testing convergent validity, reliability, and AVE on the PLS algorithm output.

Influence of Islamic Boarding School Policies and Regulations on the Competency Development of Santri: PLS-SEM Approach,” *AL-ISHLAH: Jurnal Pendidikan* 16, no. 3 (July 31, 2024): 3437–52, <https://doi.org/10.35445/alishlah.v16i3.5179>.

²³ Mamik Setyani et al., “Exploring the Influence of Self-Competence and Islamic Boarding School Regulations on Student Character: The Mediating Role of Islamic Boarding School Culture,” *Cendekia: Jurnal Kependidikan Dan Kemasyarakatan* 22, no. 1 (July 3, 2024), <https://doi.org/10.21154/cendekia.v22i1.9555>.

Table 2. Outer Model: Convergent Validity and Reliability

Variable	Indicator	Conver Validity		Consistency Reliability		
		FL (≥0.70)	AVE (≥0.50)	CA (≥0.70)	rho_A (≥0.70)	CR (≥0.70)
Academic Supervision (X1)	AS 1	0,793	0.655	0.868	0.87	0.905
	AS 2	0,814				
	AS 3	0,849				
	AS 4	0,825				
	AS 5	0,763				
Professional Competencies (x2)	PC 1	0,843	0.746	0.932	0.945	0.945
	PC 2	0,864				
	PC 3	0,862				
	PC 4	0,891				
	PC 5	0,833				
	PC 6	0,887				
Teacher Performance (Y)	TP 1	0,794	0.719	0.922	0.925	0.939
	TP 2	0,815				
	TP 3	0,899				
	TP 4	0,746				
	TP 5	0,829				
	TP 6	0,836				
	TP 7	0,890				
Work Commitment (Z)	WC 1	0,794	0.691	0.925	0.927	0.94
	WC 2	0,860				
	WC 3	0,876				
	WC 4	0,847				
	WC 5	0,867				
	WC 6	0,840				

Based on Table 2, the overall Loading Factor value for each sub-variable is ≥ 0.70 (0.763 to 0.899). The average average extracted variance (AVE) value for each variable has a value ≥ 0.50 (0.655 to 0.746). So it can be concluded that each sub-variable and variable in the instrument has met the requirements of convergent validity.²⁴ This can be interpreted that the concept understanding construct can measure teacher performance ability by 89.90%. While the weakest item is the academic supervision construct of 0.718 (AS1 or 76.3%). A variable is declared reliable if it has a CA, Rho_A,

and CR value ≥ 0.70 . SmartPLS output in Table 2 shows that all variables have CA values (0.868 to 0.932), rho_A (0.870 to 0.945), and CR (0.905 to 0.945). It can be concluded that the internal consistency of instrument reliability in 3 aspects has a value ≥ 0.70 so it has good reliability in measuring teacher performance through work commitment.

The Fornell-Larcker test, used in PLS-SEM, assesses the discriminant validity of constructs in a model by measuring their ability to be clearly identified with each other²⁵. The evaluation entails

²⁴ Marko Sarstedt et al., "Beyond a Tandem Analysis of SEM and PROCESS: Use of PLS-SEM for Mediation Analyses!," *International Journal of Market Research* 62, no. 3 (May 1, 2020): 288–99, <https://doi.org/10.1177/1470785320915686>.

²⁵ Atoulluh Atoulluh, Aries Fitriani, and Rihab Wit Daryono, "Exploring the Influence of Game-Based

Learning and School Environment on Learning Achievement: Does the Mediation of Self-Intention Matter?," *IJORER: International Journal of Recent Educational Research* 5, no. 3 (May 13, 2024): 623–38, <https://doi.org/10.46245/ijorer.v5i3.597>.

comparing how much variance is explained by each construct relative to the others²⁶. If a construct's variance explanation exceeds that of the other constructs, this indicates strong discriminant validity for that construct²⁷. Based on Table 3, the correlation value for the variable Academic

Supervision (X1) → Academic Supervision has a value of 0.809 which is higher than the correlation value of work commitment with other variables (0.417; 0.582; 0.681) as well as assesses the correlation of other variables.

Table 3. Discriminant Validity: The Fornell Larcker

Variable	X1	With	And	X2
Academic Supervision	0.809			
Professional Competencies	0.417	0.864		
Teacher Performance	0.582	0.397	0.848	
Work Commitment	0.681	0.549	0.574	0.831

Table 4. One of the main purposes of HTMT testing is to measure discriminant validity in the model. HTMT is used to test the extent to which constructs measured by different indicators represent the same or different constructs in the model. HTMT is also useful for assessing multicollinearity between constructs in the model. Multicollinearity can occur when constructs are highly related to each other, which can cause

problems in the estimation and interpretation of results in SEM analysis. Based on Table 4 of the analysis results, the overall value of the HTMT matrix is <0.90 (0.416 to 0.753). Thus, it can be concluded that the Fornell-Larcker and HTMT correlations with all variables in this study's data instruments meet the discriminant validity test in measuring teacher performance.

Table 4. Discriminant Validity: The HTMT

Variable	X1	With	And	X2
Academic Supervision				
Professional Competencies	0.455			
Teacher Performance	0.643	0.416		
Work Commitment	0.753	0.575	0.617	

Structural Model Evaluation

Structural evaluation in testing in PLS-SEM has the main objective, which is to assess the predictive accuracy of the proposed model. This is done by evaluating the extent to which the model can explain variations in empirical data and predict endogenous variables well.²⁸. Overall, structural evaluation aims to improve understanding of the phenomenon under study in the research context.

By analyzing the relationships between variables, researchers can identify factors that contribute to the phenomenon and develop deeper insights into the dynamics involved.

R² (coefficient of determination) provides an overview of how well the PLS-SEM model explains variation in the observed endogenous

²⁶ Lia Alfi Kamila, Afif Syaiful Mahmudin, and Rihab Wit Daryono, "Self-Intention in Mediating Self-Competence and Memorization Methods on Intensity of Memorizing the Qur'an: PLS-SEM Approach," *Southeast Asian Journal of Islamic Education* 6, no. 2 (June 17, 2024): 121–36, <https://doi.org/10.21093/sajie.v6i2.8386>.

²⁷ Ni'matul Faidah, Siti Rohmaturosyidah Ratnawati, and Rihab Wit Daryono, "Self-Control Mediation: The Influence of Islamic Learning and Parent's Support on

Student's Religious Character," *EDURELIGIA: Jurnal Pendidikan Agama Islam* 8, no. 1 (June 30, 2024): 42–58, <https://doi.org/10.33650/edureligia.v8i1.8472>.

²⁸ Hao Cheng, "Composite Quantile Estimation in PLS-SEM for Environment Sustainable Development Evaluation," *Environment, Development and Sustainability* 25, no. 7 (July 1, 2023): 6249–68, <https://doi.org/10.1007/s10668-022-02300-y>.

variables (construct)²⁹. Researchers can use the R² value to compare the effectiveness of different models in explaining variations in the observed constructs. Based on Table 5, the R² coefficient on the teacher performance variable obtained a value of 0.562, meaning that the teacher performance, work commitment, and academic supervision variables affect the problem-solving ability variable by 56.20% and the remaining 43.80% is influenced by other variables outside the research model.

*f*² (effect size) is one of the measures in PLS-SEM to evaluate the strength of the influence of

latent variables on observed constructs³⁰. Specifically, *f*² measures the predictive power of a latent variable on a particular construct in the model. More specifically, *f*² is calculated by dividing the square of the regression loading of the latent variable on a particular construct by the sum of the residual errors of that construct. The result gives an idea of how much the latent variable contributes to explaining the variation of the observed construct.³¹ Thus, *f*² allows comparison between the contributions of multiple latent variables to the same construct.

Table 5. Measurement of Structural Model

Variable	R ²		<i>f</i> ²	
	Value	Decision	Value	Decision
Academic Supervision	-	-	0.290	Medium
Professional Competencies	-	-	0.149	Medium
Teacher Performance	0.562	Moderate	-	-
Work Commitment	0.355	Moderate	0.060	Small

Direct Effect Measurement

Direct effect testing is an important part of the analysis to understand the direct relationship between the independent and dependent variables in the model.^{32,33} Bootstrapping is a commonly used method to calculate standardized estimates and confidence intervals for model parameters in PLS-SEM. The normalized path coefficient illustrates the strength and direction of the relationship between the independent and dependent variables in the model. A larger

coefficient indicates a greater influence of the independent variable on the dependent variable.³⁴

The β-value shows how much influence the independent variable has on the dependent variable. The positive or negative sign of the path coefficient indicates the direction of the relationship between the independent and dependent variables. The T-statistic value is used to test the statistical significance of the direct effect. This statistical test allows us to determine whether the direct effect is significant³⁵. The *q*-value is a

²⁹ Jyoti Chahal et al., “The Crisis Effect in TPB as a Moderator for Post-Pandemic Entrepreneurial Intentions among Higher Education Students: PLS-SEM and ANN Approach,” *The International Journal of Management Education* 21, no. 3 (November 1, 2023): 1–43, <https://doi.org/10.1016/j.ijme.2023.100878>.

³⁰ Joseph F. Hair et al., “When to Use and How to Report the Results of PLS-SEM,” *European Business Review* 31, no. 1 (January 1, 2019): 2–24, <https://doi.org/10.1108/EBR-11-2018-0203>.

³¹ Moh Fawaid et al., “Entrepreneurial Intentions of Vocational Education Students in Indonesia: PLS-SEM Approach,” *Journal of Technical Education and Training* 14, no. 2 (September 29, 2022): 91–105, <https://publisher.uthm.edu.my/ojs/index.php/JTET/article/view/11375>.

³² Mohammad Ali Ashraf and Hasnan Ahmed, “Approaches to Quality Education in Tertiary Sector: An Empirical Study Using PLS-SEM,” *Education Research International* 2022, no. 5 (February 22, 2022): 54–69, <https://doi.org/10.1155/2022/5491496>.

³³ Joseph F. Hair et al., “Executing and Interpreting Applications of PLS-SEM: Updates for Family Business Researchers,” *Journal of Family Business Strategy* 12, no. 3 (September 1, 2021): 1–14, <https://doi.org/10.1016/j.jfbs.2020.100392>.

³⁴ Ping Wang, “PLS-SEM Model of Integrated Stem Education Concept and Network Teaching Model of Architectural Engineering Course,” *Mathematical Problems in Engineering* 2022, no. 1 (2022): 1–10, <https://doi.org/10.1155/2022/7220957>.

³⁵ Jose Julian Rodriguez-Delgado et al., “Digital Learning Tools for Security Inductions in Mining Interns: A

measure that determines the statistical significance of the direct effect. A low ρ -value (<0.05) indicates that the effect is statistically significant.

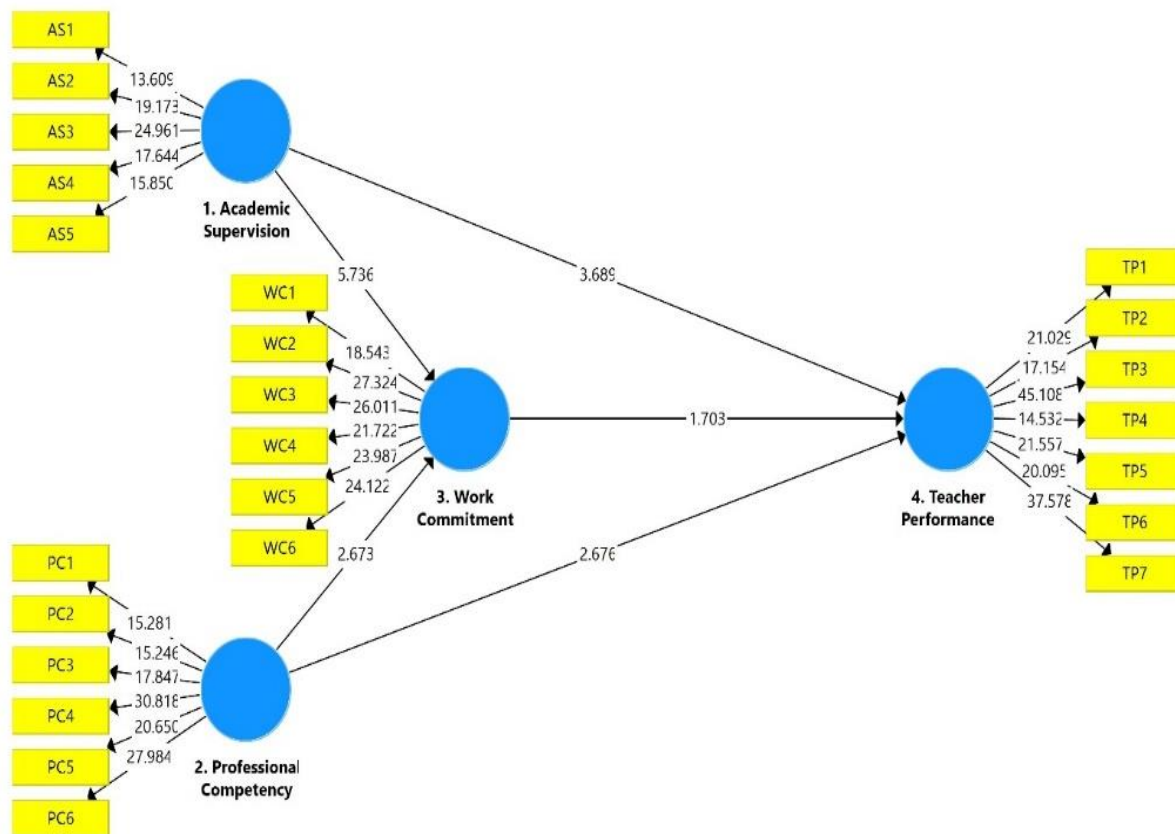


Figure 2. Evaluation of Path Analysis

Based on Table 6, hypothesis H-DIR1 (Academic Supervision (X1) \rightarrow Teacher Performance (Y)) obtained β -value = 0.436, T-statistic = 4.123 (≤ 1.96), and ρ -value = 0.000 (>0.05). This shows that the Academic Supervision variable has a positive and insignificant effect on Teacher Performance. When the Academic Supervision variable (X1) increases, the Teacher Performance variable will also increase but not significantly. Hypothesis H-DIR2 (Professional Competence (X2) \rightarrow Teacher Performance (Y)) obtained β -value = -0.287, T-statistics = 2.482 (≤ 1.96), and ρ -value = 0.013 (>0.05). This shows that the Academic Supervision variable has a negative and insignificant effect on Teacher

Performance when the Professional Competence variable (X2) decreases, the Teacher Performance variable will also decrease but not significantly. Hypothesis H-DIR3 Academic Supervision (X1) \rightarrow Job Commitment (Z) obtained β -value = 0.511, T-statistic = 5.666 (≥ 1.96), and ρ -value = 0.000 (<0.05). This shows that the Academic Supervision variable has a significant positive effect on Work Commitment. When Academic Supervision (X1) increases, the Work Commitment variable will also increase significantly.

The analysis results for hypothesis H-DIR4 show that there is a positive and significant influence between professional competence and teachers' work commitment, with a β -value of 0.287 and ρ -value = 0.013. This indicates that an

PLS-SEM Analysis," *International Journal of Advanced Computer Science and Applications (IJACSA)* 13, no. 5 (40/31 2022): 1-7, <https://doi.org/10.14569/IJACSA.2022.0130562>.

increase in professional competence, which includes relevant knowledge and skills, contributes to an increase in teachers' work commitment. In other words, teachers who have better competencies tend to be more committed to their duties and responsibilities, which in turn can improve teaching quality and student learning outcomes. For hypothesis H-DIR5, the analysis

shows that the effect of work commitment on teacher performance is not significant, with a β -value of 0.206 and q -value = 0.089. Although there is a tendency that an increase in work commitment can contribute to an increase in teacher performance, the q -value greater than 0.05 indicates that this relationship is not strong enough to be considered statistically significant.

Table 6. Result of Path Coefficient: Direct Effect

Hypothesis	Path Analysis	β -values (+/-)	Std.	T-Statistics (>1,96)	P-values (<0,05)	Decision
H-DIR1	AS → WC	0.511	0,089	5,666	0,000	Accepted
H-DIR2	AS → TP	0.436	0,108	4,123	0,000	Accepted
H-DIR3	PC → WC	0.194	0,073	2,550	0,011	Accepted
H-DIR4	PC → TP	0.287	0,114	2,482	0,013	Accepted
H-DIR5	WC → TP	0.206	0,118	1,703	0,089	Rejected

Based on Table 7 regarding indirect effects, hypothesis H-IND1, the role of Academic Supervision as a mediator, plays a positive (β -values = 0.443) and significant (T-statistics 3.894 > 1.96 and q -values = 0.000 < 0.05) role between the Academic Supervision factor (X1) and Teacher Performance (Y). So H-IND1 states that there is a positive and significant effect of the role of Job Commitment in mediating Academic Supervision

on Teacher Performance. Then hypothesis Hb the role of mathematical disposition as a mediator plays a positive (β -values = 0.214) and insignificant (T-statistics 1.066 > 1.96 and q -values = 0.286 > 0.05) role between Professional Competence (X2) on Teacher Performance (Y). So H-IND2 states that there is no positive and significant effect of the role of Professional Competence in mediating Teacher Performance.

Table 7. Result of Path Coefficient: Indirect Effect

Hypothesis	Path Analysis	β -values (+/-)	SDV	T-Statistics (>1,96)	P-values	Decision	Mediating Role
H-IND1	AS → WC → TP	0.443	0.114	3.894	0.000	Accepted	Partial Mediation
H-IND2	PC → WC → TP	0.214	0.201	1.066	0.286	Accepted	Partial Mediation

Discussion

The quantitative data collected showed that after attending the academic supervision program and implementing a structured program, there was a 30% improvement in teachers' teaching skills. This data shows that teachers who received effective supervision were able to integrate technology into learning, improve their mastery of the material, and develop positive attitudes and characters in the classroom. In addition, survey results show that 85% of teachers feel more confident in classroom management after attending supervision sessions, which contributes

to a more conducive learning environment for students.

In addition, qualitative analysis through interviews with teachers revealed that the constructive feedback received during supervision helped them identify strengths and weaknesses in their teaching practices, which in turn encouraged them to adopt more effective teaching techniques. We, therefore, recommend the development of more focused and needs-based training programs and the establishment of communities of practice among teachers to share experiences and

successful strategies to improve overall performance in the educational environment.

Indicators of professional competence include the ability to understand and apply relevant technical knowledge in the field of work or profession, awareness and commitment to act ethically, compliance with professional standards, and codes of ethics that apply to the field of work or profession³⁶. In addition, the ability to generate new ideas, create innovative solutions, and contribute to the development and improvement of the field of work or profession effectively, the ability to analyze situations, identify problems, and formulate appropriate solutions based on professional knowledge and experience, the ability to generate new ideas, create innovative solutions, and contribute to the development and improvement of the field of work or profession, the ability to use practical skills needed in carrying out job duties and responsibilities effectively, the ability to analyze situations, identify problems, and formulate appropriate solutions based on professional knowledge and experience.

Effective supervision will help teachers discover their strengths and weaknesses in professional competencies. Teachers can use the feedback provided during supervision to find areas of competence that need improvement. Conversely, teachers with high proficiency will be better equipped to accept and implement recommendations provided during supervision. Professional competence and academic supervision can help improve teacher performance. With well-targeted supervision and sufficient expertise, teachers tend to be better at delivering lessons, managing the classroom, and

creating a pleasant learning environment for students.³⁷

Teacher performance has a direct impact on the quality of education provided to students. With better academic supervision and professional competence, it is expected that students' academic achievement, skill development, and achievement of other educational goals will improve. Therefore, it is imperative that academic supervision and professional competence improve teacher performance.³⁸ All educational institutions should have a Y variable for teacher performance, which includes a range of factors to consider. These include teaching skills, active involvement in innovative learning methods, interaction with students, continuous involvement in school activities, student character building, and the ability to assess and provide feedback on student performance.³⁹

In an effort to improve understanding of the influence of academic supervision and professional competence on teacher performance, it is important to clarify the analysis of teacher performance. This research explains in detail how these two variables influence specific indicators of teacher performance, such as innovation in learning methods, student engagement, and evaluation of learning outcomes. For example, effective academic supervision can encourage teachers to adopt more innovative learning methods, which in turn can increase student engagement in the learning process. By providing constructive feedback and necessary support, academic supervision can assist teachers in designing and implementing teaching strategies that are more interesting and relevant to students.

³⁶ Nidhi Singh and Sau Cheong Loh, "Professional Learning Communities and Trust in Colleagues as Determinants of Collective Teacher Efficacy in Malaysian Primary Schools: An SEM Analysis," *Education 3-13* 13, no. 2 (2024): 1–19, <https://doi.org/10.1080/03004279.2024.2305867>.

³⁷ V. Radkevych et al., "Modern Technologies in the Development of Professional Competence in Teachers from Professional (Vocational) Education Schools," *Journal of Physics: Conference Series* 1840, no. 1 (March 2021): 1–12, <https://doi.org/10.1088/1742-6596/1840/1/012041>.

³⁸ Idris Noor, Herlinawati Herlinawati, and Ety Sofyaningrum, "The Academic Supervision of the School Principal: A Case in Indonesia | Journal of Educational and Social Research," *Journal of Educational and Social Research* 10, no. 4 (July 16, 2020): 81–93, <https://doi.org/10.36941/jesr-2020-0067>.

³⁹ Abu Siri et al., "Does Teacher Competence and Commitment Improve Teacher 's Professionalism Does Teacher Competence and Commitment Improve Teacher 's Professionalism," *Cogent Business & Management* 7, no. 1 (2020), <https://doi.org/10.1080/23311975.2020.1781993>.

In addition, teachers' professional competence also plays an important role in determining the quality of teaching and student learning outcomes. Teachers who have high professional competence tend to be better able to evaluate learning outcomes accurately and objectively, and can better identify students' learning needs. Therefore, this research needs to highlight how the development of professional competence, through training and continuous development programs, can improve teachers' ability to apply effective evaluation methods. Thus, a more in-depth analysis of the relationship between academic supervision, professional competencies, and teacher performance indicators will provide more comprehensive and applicable insights for policymakers in formulating strategies to improve education quality.

A teacher's work commitment is very influential. A teacher will not achieve the expected results or the results achieved in the future if they do not have a commitment to carrying out their work.^{40,41}. In addition, there are several things that

must be owned by a teacher so that the work that has become his responsibility can be carried out properly, such as attendance and punctuality, cooperation, pleasant cooperation, and reorganization.^{42,43}.

A high commitment to work tends to produce better results. Teachers who feel professionally and emotionally attached to their work tend to do more to meet students' needs.⁴⁴. They tend to look for opportunities to improve their teaching practices and constantly strive to be better. Teacher performance driven by high work commitment can significantly affect the quality of education provided to students.^{45, 46}. Teachers who feel committed to learning goals are more likely to create an inclusive, supportive, and challenging learning environment. Thus, effective academic supervision and the development of teachers' professional competencies can directly influence their work commitment, which in turn can improve students' academic achievement, social skills, and well-being.^{47,48}.

⁴⁰ Yasser F. Hendawy Al-Mahdy and Mahmoud Emam, "Program Accreditation for Enterprise Change: How Organizational Support and Commitment Impact Citizenship Behaviour in Oman," *Quality Assurance in Education* 31, no. 3 (January 1, 2022): 402–18, <https://doi.org/10.1108/QAE-04-2022-0089>.

⁴¹ Yan Dong and Jieping Xu, "The Role of EFL Teachers' Optimism and Commitment in Their Work Engagement: A Theoretical Review," *Frontiers in Psychology* 12, no. 2 (February 3, 2022): 1–13, <https://doi.org/10.3389/fpsyg.2021.830402>.

⁴² Kuntarno Noor Aflah et al., "Islamic Work Ethics and Employee Performance: The Role of Islamic Motivation, Affective Commitment, and Job Satisfaction," *The Journal of Asian Finance, Economics and Business* 8, no. 1 (2021): 997–1007, <https://doi.org/10.13106/jafeb.2021.vol8.no1.997>.

⁴³ Rosnee Ahad et al., "Work Attitude, Organizational Commitment and Emotional Intelligence of Malaysian Vocational College Teachers," *Journal of Technical Education and Training* 13, no. 1 (January 15, 2021): 15–21, <https://publisher.uthm.edu.my/ojs/index.php/JTET/article/view/7898>.

⁴⁴ Cahapay and Ii, "Technostress, Work Performance, Job Satisfaction, and Career Commitment of Teachers amid COVID-19 Crisis in the Philippines."

⁴⁵ Erika Yolanda and Laila Refiana Said, "Perceived Organisational Support to Increase Teachers' Commitment and Performance through Work Engagement: A Case Study of an Indonesian Vocational School," *International Journal of Management in Education* 16, no. 5 (January 2022): 485–506, <https://doi.org/10.1504/IJMIE.2022.125482>.

⁴⁶ Thomas Van Waeyenberg, Riccardo Peccei, and Adelién Decramer, "Performance Management and Teacher Performance: The Role of Affective Organizational Commitment and Exhaustion," *The International Journal of Human Resource Management* 33, no. 4 (February 21, 2022): 623–46, <https://doi.org/10.1080/09585192.2020.1754881>.

⁴⁷ Mozes M. Wullur and Basilius Redan Werang, "Emotional Exhaustion and Organizational Commitment: Primary School Teachers' Perspective," *International Journal of Evaluation and Research in Education (IJERE)* 9, no. 4 (December 1, 2020): 912–19, <https://doi.org/10.11591/ijere.v9i4.20727>.

⁴⁸ Yulia Rachmawati and Suyatno Suyatno, "The Effect of Principals' Competencies on Teachers' Job Satisfaction and Work Commitment," *Participatory Educational Research* 8, no. 1 (January 1, 2021): 362–78, <https://doi.org/10.17275/per.21.21.8.1>.

In this study, it is important to identify external factors that may influence the relationship between academic supervision, professional competence, and teacher performance. For example, students' socioeconomic conditions, support from parents, and education policies implemented by the government can play a significant role in determining the effectiveness of academic supervision and professional competence development. In addition, the relevance of previous research findings also needs to be discussed, as different educational contexts may produce varying results. By understanding these external factors, researchers can provide a more comprehensive picture of the dynamics that influence teacher performance and identify challenges that may be faced in implementing strategies to improve education quality.

Based on the data obtained, this study should recommend practical strategies that can be implemented to improve academic supervision and teachers' professional competencies. One solution that can be proposed is needs-based supervision training, where academic supervisors and teachers can work together to identify areas that require special attention. In addition, developing professional competence through collaboration between teachers can also be an effective strategy. By forming communities of practice among teachers, they can share experiences, successful teaching strategies, and constructive feedback, thus creating a mutually supportive learning environment and improving overall performance.

In presenting the results of the study, it is important to avoid over-generalization and show the nuances present in the data. Contextual variations, such as differences in teachers' experience levels, educational institution backgrounds, and student characteristics, may affect the results obtained. Therefore, researchers need to consider these factors in their analysis and discussion. By providing more in-depth context, this study will not only be more accurate in describing the relationship between academic supervision, professional competence, and teacher performance but will also provide more relevant

insights for education policymakers and practitioners in formulating strategies that suit the specific needs in the field.

Conclusion

This research is important in expanding the context by explaining the factors that support or hinder the effectiveness of academic supervision. One key factor is the role of the principal, who serves as a leader in creating a positive supervision culture. Principals who are proactive in supporting supervision can facilitate good communication between supervisors and teachers and ensure that supervision policies are implemented consistently. The capacity of supervisors also matters; supervisors with adequate skills and knowledge are better able to provide constructive and relevant feedback to teachers. A clear and structured supervision policy is also needed to provide proper guidelines for implementing supervision, thereby improving teachers' overall performance.

Furthermore, customizing the recommendations based on the local context is essential to ensure the relevance and effectiveness of the proposed strategies. In the context of education in the study areas, local needs-based supervision training can be an effective solution. This training should be designed to identify the specific challenges faced by teachers and supervisors in the area and provide the necessary skills to overcome these challenges. This way, the recommendations are not only general but can also be implemented practically and in accordance with real conditions in the field. This conclusion emphasizes that the research findings should be the basis for formulating more targeted and contextualized strategies to improve teacher performance through academic supervision and continuous professional competence development.

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