Nidhomul Haq: Jurnal Manajemen Pendidikan Islam **E-ISSN: 2503-1481**
Accredited Number: 79/E/KPT/2023 pp: 1-16
DOI: https://doi.org/10.31538/ndhq.v11i1.296
Journal Homepage: https://nidhomulhaq.uacmjk.ac.id/index.php/ndh/index
Vol 11 Issue (1) 2026

The Effect of Empowerment and Knowledge Sharing on Teacher Productivity with Academic Supervision as an Intervening Variable

Sudiyah Anawati[1)] , Sri Setyaningsih[2)] , Dian Wulandari[3)]
[1)] Universitas Indraprasta PGRI, Indonesia
[2)] Universitas Pakuan, Indonesia
[3)] Universitas Pakuan, Indonesia

e-mail Correspondent: diyahanna18@gmail.com

Received: 04-11-2025 Revised: 08-01-2026 Accepted: 24-02-2026

Info Artikel

Keywords:
Empowerment, Knowledge Sharing, Academic Supervision, Teacher Productivity.

Abstract

This research aims to analyze the role of academic supervision as a mediating variable in the relationship between empowerment and knowledge sharing on teacher productivity among Islamic Integrated Elementary School (SDIT) teachers in 5 sub-districts in East Jakarta. Theoretically, empowerment through the delegation of authority and trust, as well as knowledge sharing through the exchange of experiences and learning strategies, is expected to enhance productivity; however, their direct influence is not always significant. Academic supervision, including professional coaching and feedback, is expected to strengthen this relationship. This study employs a quantitative correlational approach with path analysis using Partial Least Squares Structural Equation Modeling (PLS-SEM). The sample consisted of 176 SDIT teachers selected using a multistage random sampling technique. The results indicate that knowledge sharing has no significant direct effect on teacher productivity ($r = 0.135$, $p = 0.170$). Empowerment ($r = 0.236$, $p < 0.002$) and knowledge sharing ($r = 0.735$, $p < 0.000$) have a significant effect on academic supervision. Meanwhile, academic supervision significantly mediates the relationships between empowerment ($r = 0.735$, $p < 0.000$) and knowledge sharing ($r = 0.392$, $p < 0.000$) and teacher productivity. This finding affirms the importance of academic supervision in improving the effectiveness of empowerment and knowledge collaboration in the school environment.

Kata Kunci:
Pemberdayaan, Berbagi Pengetahuan, Supervisi Akademik, Produktivitas Guru.

Abstrak

Penelitian ini bertujuan menganalisis peran supervisi akademik sebagai variabel mediasi dalam hubungan antara pemberdayaan dan knowledge sharing terhadap produktivitas guru pada guru-guru SDIT di Jakarta Timur di 5 kecamatan. Secara teoretis, pemberdayaan melalui pelimpahan wewenang dan kepercayaan serta knowledge sharing melalui pertukaran pengalaman dan strategi pembelajaran diharapkan meningkatkan produktivitas, namun pengaruh langsungnya tidak selalu signifikan. Supervisi akademik, yang mencakup pembinaan dan pemberian umpan balik profesional, diasumsikan memperkuat hubungan tersebut. Penelitian ini menggunakan pendekatan kuantitatif korelasional dengan analisis jalur menggunakan Partial Least Squares-Structural Equation Modeling (PLS-SEM). Sampel terdiri atas 176 guru SDIT yang dipilih dengan teknik multistage random sampling. Hasil penelitian menunjukkan bahwa knowledge sharing tidak berpengaruh langsung signifikan (r=0,135 p=0,170) terhadap produktivitas guru. Pemberdayaan ($r = 0.236$, $p < 0.002$) dan knowledge sharing ($r = 0.735$, $p < 0.000$) memberikan pengaruh signifikan terhadap supervisi akademik. Sedangkan supervisi akademik secara signifikan memediasi hubungan pemberdayaan ($r = 0.126$, $p < 0.020$) dan knowledge sharing ($r = 0.392$, $p < 0.000$) terhadap produktivitas guru. Temuan ini menegaskan pentingnya supervisi akademik dalam meningkatkan efektivitas pemberdayaan dan kolaborasi pengetahuan di lingkungan sekolah.

INTRODUCTION

Teachers are the spearhead of education, playing a vital role in improving the quality of learning in schools. High teacher productivity contributes significantly to the quality of education. Productive teachers reflect professionalism; however, in reality, their productivity is often hindered by low motivation, lack of organizational support, and limited academic guidance. Weak leadership and excessive administrative workloads further exacerbate the problem (Sariakin et al., 2025). An unconducive work environment, burnout, and stress also worsen the situation (Bøje & Frederiksen, 2021).

Furthermore, the government has allocated various incentives and incentives to both civil servant and non-civil servant teachers, such as professional allowances, additional income, and special allowances. This support aims to improve teacher well-being and increase enthusiasm, dedication, and productivity in the school learning process. Digitalization of education and the provision of interactive learning tools are also continuously encouraged to support a more effective learning environment (Times, 2024). Therefore, policies that support productivity enhancement are essential to ensure continuous improvement in learning quality. (Achmad Faizal Albani, 2025). Therefore, teacher productivity is a key factor in delivering high-quality, globally competitive education. A productive teacher can effectively implement learning activities, optimizing time, energy, and resources to achieve educational goals (Asmarani et al., 2022). Productivity is not measured solely by the amount of work completed, but also by the quality of student learning outcomes. Teacher productivity is reflected in their ability to plan, implement, and evaluate the teaching and learning process systematically and continuously (Wahib & Machfudz, 2023).

Teacher empowerment implies granting authority, trust, and opportunities to participate in decision-making related to the learning process and the school environment (Yangaiya & Magaji, 2017). Empowerment means delegating power and authority to subordinates; however, from an organic perspective, this also includes motivational and cognitive empowermentn (Ghalavi & Nastiezaie, 2020). Research shows that teachers who feel empowered tend to demonstrate higher initiative and more substantial commitment to their professional responsibilities. (Hanaysha, 2016). Studies on teacher empowerment indicate that greater responsibility and autonomy enhance job satisfaction and teachers' engagement in innovating teaching methods. (Sarsito Priyadi, 2019). However, in practice, teacher empowerment is often limited to administrative activities such as completing surveys, attending formal meetings, or participating in workshops without meaningful follow-up. Teachers are seldom truly involved in decision-making or in implementing ideas.

Another important factor is knowledge sharing among teachers, which is an essential process for transferring experiences, teaching strategies, and pedagogical innovations (Ahmad & Karim, 2019). A culture of knowledge sharing can accelerate collective learning, minimize duplication of mistakes, and strengthen teachers' professional capacity (Prastianti et al., 2023). Knowledge sharing is defined as both knowledge donation and knowledge collection. Knowledge donation refers to communication driven by one's willingness to transfer intellectual capital, whereas knowledge collection refers to efforts to persuade others to share their intellectual capital or expertise (Akram et al., 2020). A study in international schools found that teachers' attitudes and cultural intelligence significantly influence the intensity of knowledge sharing (Zahra Fajardini, Tuti Herawati, Asep Suparman, 2025). In local contexts, knowledge-sharing activities are often constrained by time, incentives, and administrative support, which may limit their full impact on teacher productivity if mediating factors such as supervision are ineffective (Al-Husseini et al., 2021).

Academic supervision refers to coaching, observation, feedback, and mentoring conducted by principals or academic supervisors to enhance learning quality (Hulu et al., 2024) and (Adnan et al., 2022). Academic supervision has a significant positive effect on teacher performance, which is a component of productivity (Aprilianto et al., 2025; Fauziah Yolviansyah et al., 2025; Kartiko & Manik, 2026). It is a planned developmental activity designed to help teachers and other school staff perform their duties effectively. Supervision is carried out by principals, school supervisors, or other mentors to improve teaching quality and learning outcomes (Taupik & Fitriani, 2021). Other studies also indicate that consistent and systematic supervision improves teachers' professionalism and classroom performance (Rasu et al., 2021).

Previous studies have shown that both academic supervision and teacher competence influence productivity, but few have analyzed in depth how supervision mediates the relationship between empowerment and knowledge sharing to optimize teacher productivity. (Shintawati et al., 2025). Effective academic supervision is crucial for improving teacher productivity, as it serves as a bridge between school support and teacher performance in the classroom. Supervision goes beyond simply supervising; it also guides and helps teachers improve their teaching methods through observation, discussion, and feedback. With effective supervision, teachers gain a better understanding of their strengths and weaknesses, thereby improving the quality of learning. Furthermore, supervision can foster teacher motivation and self-confidence by making them feel supported in their work. Therefore, effective academic supervision helps teachers work more purposefully, confidently, and productively, enhancing mutual learning.

The novelty of this study lies in its focus on analyzing the role of academic supervision as a mediating variable in the relationships among empowerment, knowledge sharing, and teacher productivity, an area underexplored in previous research. Meanwhile, (Mbulle, 2023) and (Ashade & Ashade, 2024) focused on professional membership and human resource management systems as determinants of educator productivity. (Campbell et al., 2025). Based on these findings and research gaps, the focus of this research is to analyze the influence of empowerment and knowledge sharing on teacher productivity through the intermediary variable of academic supervision to strengthen the increase in teacher productivity, as well as to explain the mechanism of the relationship between these variables in order to provide theoretical contributions and practical recommendations for improving teacher professional development programs.

METHOD

This research employs a quantitative, path-analytic approach to test the direct and indirect influences among variables. The population in this study comprises the SDIT (Integrated Islamic Elementary School) schools in East Jakarta. Of the 16 schools selected from 5 sub-districts, 10 SDIT schools were chosen, representing 314 teachers. The sampling technique used is multi-stage random sampling. Multi-stage random sampling is a complex sampling technique that involves sampling in stages (more than one stage), where larger sample units are divided into smaller units (Creswell, 2014; Sugiono, 2016). The sample size was calculated using the Slovin formula, and the sample distribution was calculated using the Taro Yamane formula, resulting in 176 samples. The research variables consist of empowerment (X_1) and knowledge sharing (X_2) as independent variables, academic supervision (X_3) as the intervening variable, and teacher productivity (Y) as the dependent variable.

The data collection method in this study uses a direct survey approach by distributing questionnaires to respondents. The survey was conducted in ten Integrated Islamic Elementary

Schools (SDIT) spread across five sub-districts in the East Jakarta area. The questionnaire in this study was designed to measure teachers' perceptions of empowerment, knowledge sharing, academic supervision, and teacher productivity using a series of statements structured according to the indicators for each variable. The results of the questionnaire were then used to examine the relationships between variables in the research model, the variables and indicators of which are explained in more detail in the following table.

Table 1. Research Variable

Variable	Indicator	Number of statements
Teacher productivity	Quantity	34 Statements
	Quantity	
	Effectiveness	
	Efficiency.	
Empowerment	Delegation of authority	32 Statements
	Strengthening trust	
	Increasing responsibility	
	Improving competence	
	Increasing self-determination	
	Strengthening a sense of meaning	
Knowledge sharing	Acquiring knowledge	35 Statements
	Knowledge donation,	
	Knowledge acceptance,	
	Application of knowledge results	
Academic Supervision	Supervision activity planning	32 Statements
	Data collection and analysis	
	Discussion of supervision results	
	Follow-up and evaluation of the supervision program.	

Source: Data Collection, 2026

Result and Discussion

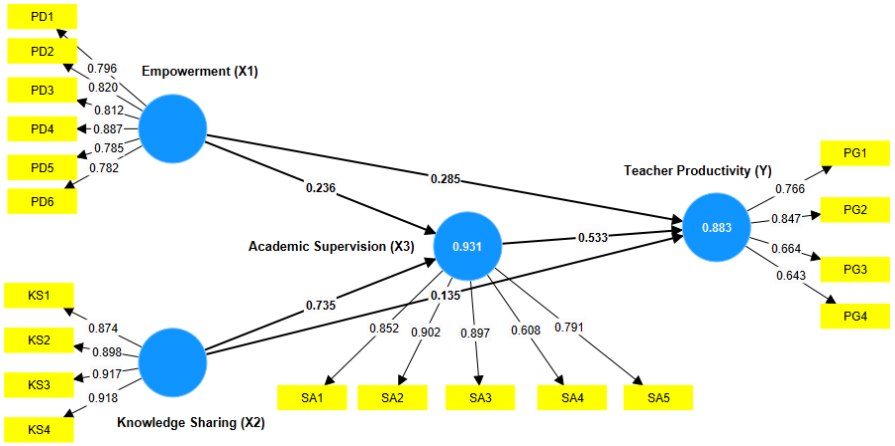
Result

Data processing was carried out using Partial Least Squares–Structural Equation Modeling (PLS-SEM) with SmartPLS 4.0. The analysis was conducted through three main stages: the Measurement Model Test (Outer Model), the Structural Model Test (Inner Model), and the Mediation Effect Test (Indirect Effect).

The Measurement Model Test (Outer Model) aims to ensure the quality of the indicators by assessing convergent and discriminant validity. Convergent validity was assessed based on the loading factor values, which ideally should be ≥ 0.70, and the Average Variance Extracted (AVE) values, which must be ≥ 0.50 to confirm indicator consistency. The outer model test was used to evaluate the relationship between latent variables and their measurement indicators. In this study, the indicators tested included four primary constructs: empowerment, knowledge sharing, academic supervision, and teacher productivity.

The analysis results showed that all indicators had loading factor values above 0.60, indicating that each indicator effectively reflected its respective construct. Therefore, the measurement model met the criteria for convergent validity, suggesting that the constructs used were reliable in explaining the relationships among research variables. (Hair et al., 2019). The dimensions and relationships among these constructs are illustrated in Figure 1.

Figure 1. Outer Measurement Model



Source: Data Collection, 2026

The first component of the measurement model is the instrument reliability analysis, which aims to ensure that each questionnaire item produces consistent and trustworthy results. The instrument's reliability was evaluated using two leading indicators: Composite Reliability (CR) and Cronbach's Alpha. An instrument is considered reliable if the CR value exceeds 0.70 and the Cronbach's Alpha value is above 0.50. Based on the results of this study, all variables met these criteria, with Composite Reliability values above 0.70 and Cronbach's Alpha values greater than 0.50.

These findings indicate that each construct or variable in the study demonstrated a high level of internal consistency and was capable of measuring the intended concept stably. Therefore, the data obtained from the research instrument can be considered both valid and reliable for use in the subsequent stages of analysis. Furthermore, these results confirm that the indicators used in this study were well-designed and effectively represented each variable consistently in accordance with the theoretical framework employed.

Table 2. Reliability and Convergent Validity Analysis

Construction	Outer Loading	Cronbach's alpha	CR	AVE
Empowerment (X1)		0.898	0.922	0.663
PD1	0.796			
PD2	0.820			
PD3	0.812			
PD4	0.887			
PD5	0.785			
PD6	0.782			
Knowledge Sharing (X2)		0.924	0.946	0.814
KS1	0.874			
KS2	0.898			
KS3	0.917			
KS4	0.918			
Academic Supervision (X3)		0.871	0.908	0.668
SA1	0.852			
SA2	0.902			
SA3	0.897			
SA4	0.608			
SA5	0.791			

Teacher Productivity (Y)		0.717	0.822	0.540
PG1	0.766			
PG2	0.847			
PG3	0.664			
PG4	0.643			

Source: Primary data Processed, 2026

The discriminant validity test was conducted using the Discriminant Analysis Validity approach based on the Fornell-Larcker criterion. This test aimed to ensure that each construct in the model is clearly distinct from the others. A construct is considered to have good discriminant validity when the square root of the Average Variance Extracted (AVE) is higher than the correlation values between constructs. Thus, it can be concluded that there are no issues with data validity, as each variable can stand independently and does not overlap with others in explaining the measured concepts.

Table 3. Discriminant Analysis Validity (Fornell-Lacker Criterion)

	X3	X1	X2	Y
X3	0.917			
X1	0.845	0.914		
X2	0.863	0.863	0.902	
Y	0.832	0.818	0.823	0.735

Source: Primary data Processed, 2026

The next step is the Structural Model Test (Inner Model), which involves examining the relationships among latent variables by analyzing path coefficients, t-statistics, and p-values. A relationship is considered significant when the t-statistic is ≥ 1.96 and the p-value is ≤ 0.05, indicating a statistically significant effect between the tested variables. The evaluation of this structural model aims to examine the strength and direction of the relationships among the variables proposed in the study.

In this research, testing was conducted to analyze the direct effects of empowerment on teacher productivity, the effects of knowledge sharing on teacher productivity, and the effects of academic supervision on teacher productivity. Each relationship was tested to determine the extent to which the independent variables contributed to improving teacher productivity, either directly or through mediating variables. The results of all hypothesis tests are presented in Table 4, which illustrates the path coefficients, significance levels, and the strength of the relationships among variables, providing a basis for concluding the proposed research model.

Table 4. Research Direct Hypotheses.

Hipotesis	Direct	STDEV	T-Statistics	P-Values	Decision
H1: X1 -> Y	0.285	0.132	2.155	0.031	Accepted
H2: X2 -> Y	0.135	0.170	0.792	0.429	Rejected
H3: X3 -> Y	0.533	0.135	3.936	0.000	Accepted
H4: X1 -> X3	0.236	0.076	3.096	0.002	Accepted
H5: X2 -> X3	0.735	0.075	9.843	0.000	Accepteda

Source: Primary data Processed, 2026

Based on the results of hypothesis testing (H1 in Table 4), empowerment has a positive and significant effect on teacher productivity. The results of the structural model analysis indicate a path coefficient of $\beta = 0.285$ (t-statistic = 2.155; p-value = 0.007). The beta coefficient of 0.285 indicates a positive, moderate effect. Meanwhile, the t-statistic value of 2.155 > 1.96 indicates that the relationship between empowerment and teacher productivity is statistically significant, and the

p-value of 0.007 < 0.05 further supports the conclusion that the effect is indeed significant. These findings demonstrate that increasing teacher empowerment through enhanced self-confidence, job autonomy, and participation in decision-making can effectively boost teacher productivity. Therefore, empowerment can be viewed as an important factor in improving teacher performance within the school environment.

Furthermore, the results of hypothesis testing H2, also presented in Table 4, indicate that knowledge sharing does not have a positive and significant effect on teacher productivity. The path coefficient value (β = 0.135; t-statistics = 0.792; p-value = 0.429) suggests that although the direction of the effect is positive, its strength is weak and statistically insignificant, as the t-statistics (0.792) < 1.96 and p-value (0.429) > 0.05. This means that there is insufficient evidence to conclude that knowledge-sharing activities directly increase teacher productivity. This finding implies that the effect of knowledge sharing may not be direct but instead requires the support of other variables, such as academic supervision or empowerment, to have a more tangible impact on improving teacher productivity.

Based on the results of hypothesis testing H3 presented in Table 4, it is found that academic supervision has a positive and significant effect on teacher productivity at a 5% significance level. The results of the structural model analysis indicate a path coefficient of β = 0.533 (t-statistic = 3.963; p-value = 0.000). The coefficient value β = 0.533 indicates a strong positive relationship between academic supervision (variable X3) and teacher productivity (variable Y). The t-statistic value of 3.963 > 1.96 confirms that the relationship is statistically significant, while the p-value of 0.000 < 0.05 shows that the result is highly significant and not due to chance. Therefore, it can be concluded that the better the implementation of academic supervision, the higher the level of teacher productivity. Adequate academic supervision helps teachers enhance their competence, improve instructional strategies, and motivates them to work more optimally toward achieving educational goals.

Based on the results of hypothesis testing H4 in Table 4, it is found that empowerment has a positive and significant effect on academic supervision at a 5% significance level. The results of the structural model analysis indicate a path coefficient of β = 0.236 (t-statistic = 3.096; p-value = 0.002). The coefficient value β = 0.236 indicates a positive relationship between empowerment (variable X) and academic supervision (variable Y). Meanwhile, the t-statistic value of 3.096 > 1.96 confirms that the relationship is statistically significant, and the p-value of 0.002 < 0.05 verifies that the observed effect is highly significant. Thus, there is strong empirical evidence that higher levels of teacher empowerment lead to better implementation of academic supervision in schools.

Based on the results of hypothesis testing H5 in Table 4, it is found that knowledge sharing has a positive and significant effect on academic supervision at a 5% significance level. The results of the structural model analysis indicate a path coefficient of β = 0.735 (t-statistic = 9.843; p-value = 0.000). The coefficient β = 0.735 indicates that the relationship between knowledge sharing (variable X) and academic supervision (variable Y) is positive and very strong. In addition, the p-value of 0.000 < 0.05 demonstrates that the test results are highly statistically significant. Therefore, it can be concluded that the higher the level of knowledge sharing among teachers, the more effective academic supervision in schools, as collaboration and information exchange strengthen teachers' professional practices.

The Mediation Effect Test (Indirect Effect) stage uses bootstrapping to estimate indirect effects and to determine the confidence intervals for the analysis results. At this stage, the bootstrapping method was used to estimate indirect effects and to determine the confidence intervals of the analysis results. If the confidence interval does not include zero, the mediating effect is statistically significant. This approach provides a more accurate understanding of how the relationships among variables occur. Through this method, researchers can thoroughly assess the

role of academic supervision as a mediating variable that bridges the influence of empowerment and knowledge sharing on improving teacher productivity. This analysis provides a more comprehensive explanation of the relationships among variables, not only by examining direct effects but also by understanding the indirect mechanisms that enhance teacher performance within the educational environment.

Table 5. Research Indirect Effect Hypotheses.

Hypothesis	Indirect Effect	STDEV	T statistics	P values	Decision
H6: X1 -> X3 -> Y	0.126	0.054	2.323	0.020	Accepted
H7: X2 -> X3 -> Y	0.392	0.106	3.687	0.000	Accepted

Source: Primary data Processed, 2026

The results of the mediation path analysis reveal that academic supervision serves as an intervening variable in the relationship between empowerment (X1) and knowledge sharing (X2) on teacher productivity (Y). Based on the results of hypothesis testing H6 for the path X1 → X3 → Y, the path coefficient β value is 0.126, indicating a positive but relatively weak effect. However, the t-statistic of 2.323 is greater than 1.96, indicating that the effect is statistically significant. In addition, the p-value of 0.020 < 0.05 strengthens the conclusion that the mediating relationship is indeed significant. Thus, this result confirms that academic supervision effectively mediates the influence of empowerment and knowledge sharing on teacher productivity. Adequate supervision encourages teachers to utilise the outcomes of empowerment and knowledge sharing to enhance their performance and the quality of teaching in schools.

Based on the results of hypothesis testing H7 for the path X2 → X3 → Y, the path coefficient β = 0.392 indicates a positive, moderately strong effect of knowledge sharing on teacher productivity through academic supervision as a mediating variable. The t-statistic value of 3.687 > 1.96 confirms that the indirect effect is statistically significant, while the p-value of 0.000 < 0.05 further supports the conclusion that the result is highly significant. Therefore, hypothesis H7 is accepted with high confidence. These findings demonstrate that academic supervision plays a strategic role as a mediator, strengthening the relationship between knowledge-sharing practices and improvements in teacher productivity within the context of educational management in schools.

DISCUSSION

As part of the structural model testing, the results of the analysis of the relationship between empowerment and knowledge sharing on teacher productivity, both directly and through academic supervision as an intermediary variable, are summarized in Table 6. This table contains the path coefficient values and significance levels, which serve as the basis for determining whether to accept or reject the research hypothesis.

Table 6. Summary of Hypothesis Testing Results Based on Coefficient Values and Significance

Relationship	Influence	Hypothesis Result	Quantitative Description
Empowerment → Teacher Productivity	Direct	Positive & Significant (H1 supported)	Contribution of 28.5%
Knowledge Sharing → Teacher Productivity	Direct	Not Significant (H2 not supported)	Direct influence is weak

Academic Supervision → Teacher Productivity	Direct	Positive & Significant (H3 supported)	Contribution of 53.3%
Empowerment → Academic Supervision	Direct	Positive & Significant (H4 supported)	Supervision increases by 23.6% for every 1% increase in empowerment
Knowledge Sharing → Academic Supervision	Direct	Positive & Significant (H5 supported)	Beta = 0.735 (Strong)
Empowerment → Academic Supervision → Teacher Productivity	Indirect (Mediated)	Significant	Academic supervision strengthens the relationship
Knowledge Sharing → Academic Supervision → Teacher Productivity	Indirect (Mediated)	Significant	Academic supervision strengthens the relationship

Source: Primary data Processed, 2026

Empowerment has a Positive and Significant Effect on Teacher Productivity.

The results of testing the first hypothesis (H1) reveal that empowerment has a direct, positive, and significant influence on teacher productivity. This finding indicates that the higher the level of empowerment teachers receive, the greater the improvement in their productivity in carrying out their professional roles and responsibilities. Based on empirical analysis, an increase in empowerment is associated with a 28.5% rise in teacher productivity, thereby confirming hypothesis H1 (Zembylas & Papanastasiou, 2005). In the educational context, empowerment is not merely about granting authority but also involves fostering trust, responsibility, and opportunities for teachers to participate in decision-making, develop professional competencies, and implement learning independently. With optimal empowerment, teachers feel more valued, have autonomy in their work, and are motivated to enhance their effectiveness and performance. (Akram et al., 2020).

Conceptually, the findings of this study reinforce empowerment theory, which posits that empowered individuals tend to exhibit higher levels of motivation, commitment, and productivity. Within the field of organizational psychology, empowerment is believed to foster a sense of ownership of one's work, strengthen self-confidence, and foster a positive work spirit. (Yao et al., 2020). Teachers who are given opportunities to take initiative and innovate demonstrate stronger responsibility and dedication, which significantly contribute to productivity improvement. This result is also consistent with previous studies showing that empowerment is a strategic element in enhancing educators' efficiency, quality, and productivity. Therefore, empowerment can be regarded as an effective managerial strategy to improve the quality of teacher performance in educational environments sustainably. (Ahrari et al., 2021; Tindowen, 2019).

Empowerment is one of the key factors for organizations to achieve work effectiveness. Teachers need greater autonomy so they can fulfill their responsibilities without being constrained by overly rigid and diverse technical regulations that often limit their creativity (Muttaqin et al., 2023). It is essential to continuously encourage teachers to think creatively and innovatively in developing strategies, methods, and learning approaches that are most relevant to achieving student success. Empowerment efforts also serve to optimize teachers' potential so that they are

capable of handling various professional responsibilities, fulfilling their self-development needs, and fostering self-confidence that supports independence in performing their roles as educators (Prasetia & Akrim, 2024).

Knowledge Sharing does not have a Positive and Significant Effect on Teacher Productivity.

The results of hypothesis H2 indicate that knowledge sharing does not directly influence teacher productivity. Theoretically, knowledge-sharing activities are believed to enhance productivity through the exchange of information, experiences, and effective teaching strategies. However, empirical findings indicate that the relationship between knowledge sharing and teacher productivity is not always directly significant. (Al-Yaseen & Al-Musaileem, 2015). The analysis of the average scores of the knowledge sharing questionnaire showed that the knowledge sharing indicators with the highest scores were utilization of knowledge exchange results (4.26) and knowledge acceptance (4.10), which means teachers can use and are quite open to receiving new information or experiences from colleagues. (Azizifar et al., 2020).

Conversely, the indicator with the lowest score was knowledge donation (3.81), which indicates the still low initiative of teachers to share knowledge with others actively. Meanwhile, knowledge acquisition (3.96) was at a moderate level, indicating that teachers acquired new knowledge, although not optimally. (Fauzi et al., 2019). This finding confirms that knowledge-sharing activities among teachers are more dominant in the aspects of acceptance and utilization, but are still weak in the aspect of making contributions, so efforts are needed to strengthen the culture of sharing through discussion forums, mentoring, or reward systems that encourage teachers to be more active in donating their knowledge. (Zeinabadi, 2022).

The insignificance of these results indicates that knowledge sharing in the context of this study has not been a strong determining factor in increasing teacher productivity. (Darif et al., 2025; Parhamnia et al., 2021). This could be caused by the still low level of knowledge donation, the lack of a formal platform or forum for information exchange, or the low application of knowledge sharing in teaching practice. In addition, differences in individual motivation, high workload, or time constraints can also hinder the effective knowledge-sharing process. (Shi et al., 2023). Nevertheless, empirical studies have shown that knowledge sharing has a positive and significant relationship with teachers' work productivity. Based on the path analysis results, the coefficient value of 0.294 and a t-statistic of 2.177 indicate that an increase in knowledge-sharing practices contributes to higher productivity. (Adriyanto & Prasetyo, 2021). This means that the greater the intensity with which teachers share information and professional experiences, the higher their potential to enhance effectiveness, skills, and problem-solving abilities in the learning process. The intensity of knowledge sharing predicts teachers' innovation and their ability to adopt new teaching methods, thereby supporting teacher productivity. (Alyaza & Fauziah, 2025). Therefore, the implementation of planned and sustainable knowledge sharing can serve as a key strategy in building a collaborative work environment that promotes teacher productivity in schools.

Academic Supervision has a Positive and Significant Effect on Teacher Productivity.

The results of hypothesis H3 show that academic supervision has a direct, positive, and significant influence on teacher productivity. Based on the path analysis results, the coefficient is 0.533, indicating that an increase in the implementation of academic supervision accounts for 53.3% of the improvement in teacher productivity. In comparison, the remaining 46.7% is influenced by factors beyond the scope of this study. This finding confirms that the better the quality of academic supervision in schools, the higher the teacher's productivity in carrying out

professional duties (Kyvik & Smeby, 1994). In the context of education, academic supervision is not merely an administrative monitoring process but rather a form of guidance and mentoring aimed at improving pedagogical, professional, and managerial competencies. Through practical supervision activities, teachers receive mentoring, objective evaluation, and constructive feedback that enhance their teaching abilities and overall performance (Schreyer et al., 2023).

Theoretically and empirically, these findings reinforce the view that academic supervision plays a crucial role in enhancing teacher productivity and professionalism. Planned, ongoing, and collaborative supervision practices can enhance teacher motivation, self-confidence, and commitment to teaching quality. (Wiyono et al., 2022). Academic supervision, as an intermediary variable, has a strategic function as a connecting mechanism that bridges and strengthens the influence of empowerment and knowledge sharing on teacher productivity. Through a systematic process of coaching, mentoring, and feedback, academic supervision not only ensures the effective implementation of empowerment and knowledge sharing practices but also guides them to have a tangible impact on improving teacher performance and productivity. (Azainil et al., 2021).

This study's results also align with previous findings, which emphasize that adequate academic supervision encourages teachers to work more productively, innovatively, and responsibly toward achieving better learning outcomes. Therefore, academic supervision can be regarded as a managerial strategy that plays a crucial role in ensuring the sustainable improvement of education quality. (Sulistyaningsih, 2018). Academic supervision also has a positive and significant influence on school productivity, with a Beta coefficient value of 0.370 or 37% (Tino, 2017).

This finding indicates that the better the principal's academic supervision, the higher the school's productivity. Academic supervision plays an essential role in providing guidance, direction, and professional support to teachers in performing their teaching duties. (Daud et al., 2018). Through adequate supervision, principals can enhance teachers' competencies, improve teaching methods, and create a conducive working environment. Thus, this finding strengthens the view that the principal's role as an academic supervisor is a strategic factor in improving the overall quality and productivity of educational institutions. (Utami & Vioreza, 2021).

The Indirect Effect of Empowerment on Teacher Productivity through Academic Supervision

In the educational context, teacher empowerment plays an important role not only in directly improving productivity but also in strengthening academic supervision. When teachers feel trusted, have autonomy, and receive adequate support from school leaders, they tend to be more open to guidance and direction during the supervision process. (Lee & Nie, 2014). The confidence that arises from empowerment encourages teachers to be more active in developing their competencies, both in lesson planning and in carrying out their daily professional duties. Academic supervision conducted in a participatory and respectful atmosphere enhances interaction between teachers and supervisors, thereby creating a conducive work environment for performance improvement. (Widatin et al., 2025).

Furthermore, effective academic supervision serves as a channel for translating teacher empowerment outcomes into tangible productivity improvements in schools. The combination of strong empowerment and high-quality academic supervision establishes a supportive, innovative, and results-oriented work system (Liang et al., 2026; Yao et al., 2020). Under such conditions, teachers are not only able to perform their duties efficiently but also contribute to achieving the

educational institution's overall goals. Academic supervision, teacher competence, and the work environment significantly contribute to improving elementary school teachers' productivity (Shintawati et al., 2025).

The study's results on the indirect effect of knowledge sharing on teacher productivity through academic supervision show a significant relationship. This finding indicates that the process of knowledge sharing among teachers not only directly improves productivity but also contributes indirectly through adequate academic supervision. (Al-Yaseen & Al-Musaileem, 2015; Shapira-Lishchinsky & Tsemach, 2014). Teachers who regularly share information, teaching experiences, and innovative learning strategies with their peers tend to be better prepared for supervisory duties. Through these activities, teachers enrich their insights and develop more adaptive teaching approaches that meet students' needs. Academic supervision then functions as a platform for reflection and professional development, reinforcing the outcomes of knowledge-sharing practices. (Schermuly et al., 2011).

Furthermore, high-quality academic supervision can amplify the positive impact of a knowledge-sharing culture within schools. When supervision is conducted in a focused, constructive, and learning-oriented manner, teachers become increasingly motivated to optimize their performance. This creates a positive cycle in which knowledge sharing enhances the effectiveness of supervision, and adequate supervision, in turn, promotes sustained teacher productivity. Research findings also show that academic supervision and pedagogical competence influence teaching productivity, indicating that well-directed supervision can improve teachers' work outcomes. (Mahbub Zuhri, 2025). Thus, collaboration among teachers, supervisors, and school leaders is crucial to fostering a productive work culture focused on professional development. The integration of knowledge sharing and academic supervision is a strategic factor in improving educators' performance and productivity. (Collins et al., 2021).

CONCLUSION

This study analyzes the direct and indirect effects of empowerment, knowledge sharing, and academic supervision on the productivity of teachers at SDIT schools in East Jakarta. The results show that empowerment and academic supervision have a positive and significant impact on teacher productivity, with empowerment contributing 28.5% to teacher productivity. Meanwhile, knowledge sharing did not show a significant direct effect on teacher productivity. However, the study revealed that academic supervision mediates the relationship between empowerment and knowledge sharing towards teacher productivity significantly. These findings emphasize the importance of academic supervision in enhancing teacher productivity through empowerment and knowledge collaboration within the school environment.

Despite providing important insights into the relationship between empowerment, knowledge sharing, and teacher productivity, this study has several limitations. One of the limitations is the sample, which only involves teachers from SDIT schools in East Jakarta, potentially limiting the generalizability of the findings to other regions or educational levels. Therefore, future research is recommended to include a broader and more diverse sample, from different types of schools and regions, to strengthen the generalizability of the findings. Future studies could also explore other variables that may influence teacher productivity, such as motivation and social support, and consider qualitative approaches to gain deeper insights into teachers' experiences and perceptions of empowerment and academic supervision.

REFERENCES

Achmad Faizal Albani. (2025). Relevansi Kurikulum Deep Learning Dalam Konteks Pendidikan Indonesia. *Jurnal Sosialita:JUrnal Pendidikan Dan Ilmu Sosial*, *20*(1), 1–14.

Adnan, A., Sujiarto, H., Iriantara, Y., & Mulianai, Y. (2022). Management of Academic Supervision to Improve Teacher Performance at MTsN 3 and MTsN 4 Banjarmasin City. *International Journal of Educational Research & Social Sciences*, *3*(3), 1297–1306. https://doi.org/10.51601/ijersc.v3i3.404

Adriyanto, A. T., & Prasetyo, A. (2021). Pengaruh Motivasi Intrinsik dan Knowledge Sharing terhadap Produktivitas Kerja melalui Perilaku Innovatif sebagai Variabel Intervening. *Permana : Jurnal Perpajakan, Manajemen, Dan Akuntansi*, *13*(1), 35–45. https://doi.org/10.24905/permana.v13i1.115

Ahmad, F., & Karim, M. (2019). Impacts of knowledge sharing: A review and directions for future research. *Journal of Workplace Learning*, *31*(3), 207–230. https://doi.org/10.1108/JWL-07-2018-0096

Ahrari, S., Roslan, S., Zaremohzzabieh, Z., Mohd Rasdi, R., & Abu Samah, A. (2021). Relationship between teacher empowerment and job satisfaction: A Meta-Analytic path analysis. *Cogent Education*, *8*(1), 1898737. https://doi.org/10.1080/2331186X.2021.1898737

Akram, T., Lei, S., Haider, M. J., & Hussain, S. T. (2020). The impact of organizational justice on employee innovative work behavior: Mediating role of knowledge sharing. *Journal of Innovation and Knowledge*, *5*(2), 117–129. https://doi.org/10.1016/j.jik.2019.10.001

Al-Husseini, S., El Beltagi, I., & Moizer, J. (2021). Transformational leadership and innovation: The mediating role of knowledge sharing amongst higher education faculty. *International Journal of Leadership in Education*, *24*(5), 670–693. https://doi.org/10.1080/13603124.2019.1588381

Al-Yaseen, W. S., & Al-Musaileem, M. Y. (2015). Teacher empowerment as an important component of job satisfaction: A comparative study of teachers' perspectives in Al-Farwaniya District, Kuwait. *Compare: A Journal of Comparative and International Education*, *45*(6), 863–885. https://doi.org/10.1080/03057925.2013.855006

Alyaza, C. F., & Fauziah, S. N. (2025). Enhancing Teachers' Innovative Behavior: The Interaction Between Knowledge Sharing And Creative Work Climate. *Greenation International Journal of Tourism and Management*, *3*(2), 194–206. https://doi.org/10.38035/gijtm.v3i2.437

Aprilianto, A., Majid, M. A. A., & Kartiko, A. (2025). Head Role School As Inner Motivator Improving Teacher Performance. *Create: Journal of Islamic Management and Business*, *1*(1), 13–24.

Ashade, R. A., & Ashade, S. A. (2024). Revolutionizing Teacher Productivity: Unravelling the Secret of High-Performance Work System in Strategic Human Resource Management. *International Journal of Research in Education and Science*, *10*(3), 561–576. https://doi.org/10.46328/ijres.3414

Asmarani, A., El Widdah, M., Students UIN Sulthan Thaha Saifuddin Jambi, P., Kunci, K., Profesional, K., & Kerja Guru Madrasah Aliyah Negeri, P. (2022). The Relationship Of Professional Competence With Teacher Work Productivity In Madrasah Aliyah. *Nidhomul Haq: Jurnal Manajemen Pendidikan Islam*, (July), 220–235. https://doi.org/10.31538/ndh.v6i2.1365

Azainil, A., Komariyah, L., & Yan, Y. (2021). The Effect of Principals' Managerial Competence and Teacher Discipline on Teacher Productivity. *Cypriot Journal of Educational Sciences*, *16*(2), 563–579.

Azizifar, A., Naghipour, S., Mohamadian, F., Veisani, Y., Cheraghi, F., & Aibod, S. (2020). Investigating the Relationship between Iranian EFL Teachers' Empowerment and their Self-Efficacy as a Consequence for their Educational Improvement. *Journal of Education and Health Promotion*, *9*(1), 80. https://doi.org/10.4103/jehp.jehp_354_19

Bøje, J. D., & Frederiksen, L. F. (2021). Leaders of the profession and professional leaders. School leaders making sense of themselves and their jobs. *International Journal of Leadership in Education*, *24*(3), 291–312. https://doi.org/10.1080/13603124.2019.1591515

Campbell, R., Gershenson, S., Lindsay, C., Papageorge, N. W., & Rendon, J. H. (2025). On-the-Job Learning: How Peers and Experience Drive Productivity Among Teachers. *SSRN Electronic Journal*, (25). https://doi.org/10.2139/ssrn.5077488

Collins, S. P., Storrow, A., Liu, D., Jenkins, C. A., Miller, K. F., Kampe, C., & Butler, J. (2021). *EDUCATIONAL SUPERVISION*.

Creswell, J. W. (2014). *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches*. SAGE.

Darif, M., Sudadio, S., & Yuhana, Y. (2025). The Influence of Innovative Leadership Ability, Managerial Ability, Work Behavior, and Work Commitment on Work Productivity at Elementary Schools in Lebak Regency. *Salud, Ciencia y Tecnologia*, *5*. https://doi.org/10.56294/saludcyt20251153

Daud, Y., Dali, P. D., Khalid, R., & Fauzee, M. S. O. (2018). Teaching and Learning Supervision, Teachers' Attitude towards Classroom Supervision and Students' Participation. *International Journal of Instruction*, *11*(4), 513–526.

Fauzi, M. A., Nya-Ling, C. T., Thursamy, R., & Ojo, A. O. (2019). Knowledge sharing: Role of academics towards research productivity in higher learning institution. *VINE Journal of Information and Knowledge Management Systems*, *49*(1), 136–159. https://doi.org/10.1108/VJIKMS-09-2018-0074

Fauziah Yolviansyah, Hermanto, & Maftuhatu Rosyidah, D. (2025). Academic Supervision and Work Climate to Improve Primary School Teacher Performance. *JPI (Jurnal Pendidikan Indonesia)*, *13*(4), 818–830. https://doi.org/10.23887/jpiundiksha.v13i4.79502

Ghalavi, Z., & Nastiezaie, N. (2020). Relationship of servant leadership and organizational citizenship behavior with mediation of psychological empowerment. *Eurasian Journal of Educational Research*, *2020*(89), 241–264. https://doi.org/10.14689/ejer.2020.89.11

Hair, J. F., Risher, J. J., Sarstedt, M., & Ringle, C. M. (2019). When to use and how to report the results of PLS-SEM. *European Business Review*, *31*(1), 2–24. https://doi.org/10.1108/EBR-11-2018-0203

Hanaysha, J. (2016). Testing the Effects of Employee Empowerment, Teamwork, and Employee Training on Employee Productivity in Higher Education Sector. *International Journal of Learning and Development*, *6*(1), 164. https://doi.org/10.5296/ijld.v6i1.9200

Hulu, T., Rosita, T., & Rahman, A. (2024). The Effect of Academic Supervision and Teacher Professionalism on Student Learning Outcomes. *Didaktika: Jurnal Kependidikan*, *13*(1), 343–350.

Kartiko, A., & Manik, C. U. U. (2026). Examining the Role of Compensation and Work Ethic in Enhancing Teacher Performance. *Academicus: Journal of Teaching and Learning*, *5*(1), 1–15. https://doi.org/10.59373/academicus.v5i1.109

Kyvik, S., & Smeby, J.-C. (1994). Teaching and research. The relationship between the supervision of graduate students and faculty research performance. *Higher Education*, *28*(2), 227–239. https://doi.org/10.1007/BF01383730

Lee, A. N., & Nie, Y. (2014). Understanding teacher empowerment: Teachers' perceptions of principal's and immediate supervisor's empowering behaviours, psychological empowerment and work-related outcomes. *Teaching and Teacher Education*, *41*, 67–79. https://doi.org/10.1016/j.tate.2014.03.006

Liang, H., Lean, H. H., & Vasudevan, A. (2026). How and when empowering leadership influences job performance: A dual-mediator model. *PLOS ONE*, *21*(2), e0332545. https://doi.org/10.1371/journal.pone.0332545

Mahbub Zuhri. (2025). Strategies To Improve Teaching Productivity: The Role of Academic Supervision and Paedagogic Competence Strategi Peningkatan Produktivitas Mengajar: Peran Supervisi Akademik Dan Kompetensi Paedagogik. *Journal of Islamic Education Management*, *1*(1), 11–19.

Mbulle, E. (2023). Membership in professional associations and productivity of teachers in Anglo-Saxon universities in Cameroon. *African Educational Research Journal*, *11*(4), 596–607. https://doi.org/10.30918/aerj.114.23.091

Muttaqin, I., Tursina, N., Sudrajat, A., Yuliza, U., Novianto, N., Fahri Ramadhan, F., & Edi Kurnanto, M. (2023). The effect of academic supervision, managerial competence, and teacher empowerment on teacher performance: The mediating role of teacher commitment. *F1000Research*, *12*, 743. https://doi.org/10.12688/f1000research.128502.2

Parhamnia, F., Farahian, M., & Rajabi, Y. (2021). Knowledge sharing and self-efficacy in an EFL context: The mediating effect of creativity. *Global Knowledge, Memory and Communication*, *71*(4–5), 293–321. https://doi.org/10.1108/GKMC-03-2021-0040

Prasetia, I., & Akrim. (2024). The impact of teacher empowerment on school effectiveness: A mixed-methods study. *Journal of Education and E-Learning Research*, *11*(4), 655–666. https://doi.org/10.20448/jeelr.v11i4.6056

Prastianti, A. P. T., Utomo, C. B., & Utanto, Y. (2023). The Effect of Team Learning and Knowledge Sharing on Teachers Innovative Work Behavior. *Journal of Curriculum …*, *6*(2), 164–173.

Rasu, Y., Rawis, J. A. M., Wullur, M. M., & Rotty, V. N. J. (2021). Supervisi Akademik untuk Peningkatan Kompetensi Pedagogik Guru. *LEADERIA: Jurnal Manajemen Pendidikan Islam*, *2*(2), 55–61. https://doi.org/10.35719/leaderia.v2i2.67

Sariakin, S., Yeni, M., Usman, M. Bin, Mare, A. S., Munzir, M., & Saleh, M. (2025). Fostering a productive educational environment: The roles of leadership, management practices, and teacher motivation. *Frontiers in Education*, *10*(February). https://doi.org/10.3389/feduc.2025.1499064

Sarsito Priyadi. (2019). *Pengaruh Kepemimpinan Transformasional Dan Pemberdayaan Terhadap Motivasi Guru Sd Negeri Di Kecamatan Duren Sawit*. *3*(April), 207–215.

Schermuly, C. C., Schermuly, R. A., & Meyer, B. (2011). Effects of vice-principals' psychological empowerment on job satisfaction and burnout. *International Journal of Educational Management*, *25*(3), 252–264. https://doi.org/10.1108/09513541111120097

Schreyer, K. E., Kuhn, D., & Norton, V. (2023). Physician Productivity and Supervision. *Western Journal of Emergency Medicine*, *24*(3), 372–376. https://doi.org/10.5811/westjem.60876

Shapira-Lishchinsky, O., & Tsemach, S. (2014). Psychological Empowerment as a Mediator Between Teachers' Perceptions of Authentic Leadership and Their Withdrawal and Citizenship Behaviors. *Educational Administration Quarterly*, *50*(4), 675–712. https://doi.org/10.1177/0013161X13513898

Shi, L., Chen, S., & Zhou, Y. (2023). The influence of social capital on primary school teachers' creative teaching behavior: Mediating effects of knowledge sharing and creative teaching self-efficacy. *Thinking Skills and Creativity*, *47*, 101226. https://doi.org/10.1016/j.tsc.2022.101226

Shintawati, S., Hanafi, M. S., & Hendrayana, A. (2025). The Effect of Principal Academic Supervision, Teacher Competence, and Work Environment on Elementary School Teacher Productivity. *Jurnal Pendidikan Indonesia Gemilang*, *5*(2), 115–125. https://doi.org/10.53889/jpig.v5i2.675

Sugiono. (2016). *Metode Penelitian: Kuantitatif, Kualitatif, R&D*. Alfabeta.

Sulistyaningsih, S. (2018). Supervisi Akademik Kepala Sekolah Dan Disiplin Kerja Guru Terhadap Produktivitas Kerja Guru Sd Negeri Se Kecamatan Mumbulsari Jember. *LISAN AL-HAL: Jurnal Pengembangan Pemikiran Dan Kebudayaan*, *12*(2), 267–284. https://doi.org/10.35316/lisanalhal.v12i2.154

Taupik, R. P., & Fitriani, Y. (2021). The Effect of Academic Supervision of School Principles and Teachers' Performance Satisfaction in Increasing Teachers' Pedagogical Competence. *Jurnal Basicedu*, *5*(5), 1525–1531.

Times. (2024). *Pemerataan dan pembangunan mutu pendidikan.*

Tindowen, D. J. (2019). Influence of Empowerment on Teachers' Organizational Behaviors. *European Journal of Educational Research*, *8*(2), 617–631. https://doi.org/10.12973/eu-jer.8.2.617

Tino. (2017). Pengaruh Supervisi Akademik Dan Komunikasi Kepala Sekolah Terhadap Produktivitas Sekolah Di Sekolah Dasar Negeri Kecamatan Tebas. *Jurnal Pendidikan Dan Pembelajaran Untan*, *6*(6), 1–12.

Utami, P. P., & Vioreza, N. (2021). Teacher Work Productivity in Senior High School. *International Journal of Instruction*, *14*(1), 599–614.

Wahib, A., & Machfudz, M. (2023). The Influence of Workplace Spirituality, Commitment and Organizational Culture on Teacher Productivity. *Al-Tanzim: Jurnal Manajemen Pendidikan Islam*, *7*(1), 11–25. https://doi.org/10.33650/al-tanzim.v7i1.4628

Widatin, T., Roemintoyo, & Sukarno. (2025). Case Study on the Academic Supervision of School Teachers Utilizing Coaching Techniques to Sustain Learning Quality in Elementary Education. *Journal of Education Research and Evaluation*, *9*(3), 602–612. https://doi.org/10.23887/jere.v9i3.97010

Wiyono, B. B., Widayati, S. P., Imron, A., Bustami, A. L., & Dayati, U. (2022). Implementation of Group and Individual Supervision Techniques, and Its Effect on the Work Motivation and Performance of Teachers at School Organization. *Frontiers in Psychology*, *13*. https://doi.org/10.3389/fpsyg.2022.943838

Yangaiya, S. A., & Magaji, K. (2017). the Relationship Between School Leadership and Job Satisfaction of Secondary School Teachers: A Mediating Role of Teacher Empowerment. *PEOPLE: International Journal of Social Sciences*, *1*(1), 1239–1251. https://doi.org/10.20319/pijss.2015.s21.12391251

Yao, J., You, Y., & Zhu, J. (2020). Principal–Teacher Management Communication and Teachers' Job Performance: The Mediating Role of Psychological Empowerment and Affective Commitment. *The Asia-Pacific Education Researcher*, *29*(4), 365–375. https://doi.org/10.1007/s40299-019-00490-0

Zahra Fajardini, Tuti Herawati, Asep Suparman, S. A. (2025). The Antecedent Factors Of Knowledge Sharing Amongst International School's Teachers. *Syntax Literate: Jurnal Ilmiah Indonesia*, *10*(5), 5331–5342.

Zeinabadi, H. (2022). Principals' role in teachers' knowledge-sharing beliefs, intention and behaviour in Iranian schools: Exploring the impact of knowledge-sharing leadership. *Journal of Educational Administration*, *60*(5), 493–510. https://doi.org/10.1108/JEA-09-2021-0168

Zembylas, M., & Papanastasiou, E. C. (2005). Modeling teacher empowerment: The role of job satisfaction. *Educational Research and Evaluation*, *11*(5), 433–459. https://doi.org/10.1080/13803610500146152