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The Influence of Transformational Leadership and Academic Supervision on Teacher Work Productivity

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Abstract

Background: *This study aims to investigate the effects of transformational leadership and academic supervision on teacher work productivity in school organizations. It examines how visionary leadership practices and instructional support contribute to strengthening teachers' professional performance.*

Methods: *This study employed a quantitative explanatory research design involving teachers as research respondents selected through an appropriate sampling technique. Data were collected using structured questionnaires developed from established theoretical indicators of transformational leadership, academic supervision, and teacher work productivity. Teacher work productivity was conceptualized through five dimensions: instructional effectiveness, professional commitment, task efficiency, pedagogical innovation, and continuous professional development. Data were analyzed using Structural Equation Modeling (SEM).*

Result: *The descriptive statistical analysis revealed that teacher work productivity achieved the highest mean score (M = 4.18), followed by transformational leadership (M = 4.12) and academic supervision (M = 3.98). These findings indicate generally positive teacher perceptions of their professional responsibilities and leadership practices within school organizations.*

Implication: *The findings are expected to provide theoretical and practical contributions to educational management by informing school principals and educational policymakers in developing transformational leadership practices and systematic academic supervision to enhance teachers' productivity, professional performance, and the overall quality of education*

Novelty: *This study offers an integrative perspective by examining transformational leadership and academic supervision simultaneously as complementary organizational mechanisms influencing teacher work productivity.*

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INTRODUCTION

Teacher work productivity has become a strategic determinant of educational quality and institutional effectiveness amid the accelerating transformation of global education in the twenty-first century (Yolviansyah et al., 2025; Sunaryo, 2020). The increasing demands of contemporary education require teachers to demonstrate not only pedagogical competence and professional commitment but also adaptability, instructional efficiency, creativity, and the capacity to integrate digital technologies into teaching and learning processes. Furthermore, the evolving educational landscape has fundamentally transformed teachers' roles from conventional knowledge transmitters into learning facilitators, pedagogical innovators, and designers of meaningful learning experiences that promote students' critical thinking, collaboration, and problem-solving competencies. However, digital disruption, continuous curriculum reforms, increasing administrative responsibilities, and more demanding institutional performance standards have created complex challenges for maintaining teacher productivity, making the improvement of professional effectiveness and instructional quality essential for strengthening school organizational performance and achieving sustainable educational outcomes (Indrasari, 2026; Setyati & Niron, 2025).

Teacher work productivity represents a multidimensional concept in human resource management that reflects the extent to which teachers utilize their professional competencies, time, knowledge, and institutional resources efficiently and effectively to achieve educational objectives (Norawati, 2025; Pratama et al., 2020). From an organizational perspective, productivity encompasses the relationship between work inputs and outputs, emphasizing not only the quantity of tasks accomplished but also the quality, effectiveness, and sustainability of professional outcomes (Nurtamam et al., 2023; Ningsih et al., 2023; Rahman et al., 2023; Santosa et al., 2022). In the educational context, teacher work productivity extends beyond routine instructional activities to include instructional effectiveness, work efficiency, professional commitment, pedagogical innovation, task accomplishment, and continuous professional development as essential dimensions of professional contribution (Anawati et al., 2026a). Unlike teacher performance, which primarily evaluates individual behaviors and the execution of assigned responsibilities, teacher work productivity provides a broader perspective by integrating the efficiency of professional processes, the quality of instructional outcomes, and the added value generated through teachers' contributions to school effectiveness (Hariyadi et al., 2023; Ichsan et al., 2023; Putra et al., 2023; Syafruddin et al., 2024; Utomo et al., 2023; Zulkifli et al., 2022; Zulyusri et al., 2023a).

Transformational leadership plays a fundamental role in enhancing teacher work productivity by establishing a shared institutional vision, strengthening professional motivation, and fostering an organizational culture that encourages innovation and continuous improvement in educational institutions (Nailan & Nugraha, 2025; Norawati, 2025). According to the theoretical framework developed by Bass and Avolio, transformational leadership consists of four fundamental dimensions: idealized influence, inspirational motivation, intellectual stimulation, and individualized consideration, which collectively shape employees' attitudes, commitment, and professional behaviors (Anawati et al., 2026b). In school organizations, principals who demonstrate transformational leadership can encourage teachers to develop intrinsic motivation, strengthen organizational commitment, embrace innovative teaching practices, and improve their professional capabilities through intellectual engagement and individualized support (Zulyusri et al., 2023b). Consequently, transformational leadership is theoretically expected

to exert a positive influence on teacher work productivity because visionary direction, motivational support, intellectual stimulation, and personalized professional development create organizational conditions that enable teachers to perform their responsibilities more effectively, efficiently, and innovatively (Idham & Hart, 2025; Nurojiyah et al., 2025).

Academic supervision constitutes an essential mechanism in educational management for improving instructional quality, strengthening teachers' pedagogical competencies, and promoting sustainable professional development within school organizations (Cinti & Lintari, 2024; Novita, 2020). Rather than functioning merely as an administrative evaluation process, academic supervision involves systematic professional guidance, instructional mentoring, performance assessment, and constructive support designed to help teachers identify instructional challenges and improve their teaching practices. Its implementation encompasses several interconnected dimensions, including instructional planning, classroom observation, constructive feedback, professional development, and instructional evaluation, which collectively provide a structured framework for monitoring and enhancing the quality of teaching and learning (Idham & Budi Hart, 2025). In this context, school principals and academic supervisors play a strategic role in facilitating reflective teaching practices, identifying professional development needs, strengthening instructional effectiveness, and ensuring that teachers continuously improve their ability to achieve educational objectives (Ayiro, 2018).

Furthermore, effective academic supervision contributes to teacher work productivity by establishing a continuous improvement process that connects pedagogical knowledge, instructional practices, and professional accountability (Ayiro, 2018; C. Morales, 2022). Through systematic classroom observations and evidence-based feedback, teachers can identify weaknesses in instructional delivery, improve classroom management, adopt innovative teaching strategies, and align learning activities with curriculum expectations. Academic supervision also facilitates the development of teachers' professional competencies by providing opportunities for reflective practice, collaborative learning, and targeted professional development, thereby improving both the efficiency and effectiveness of their work (Andika & Kawuryan, n.d.). Accordingly, academic supervision should be conceptualized as a developmental and collaborative organizational mechanism that strengthens teachers' instructional capabilities while contributing to higher levels of professional productivity and overall school effectiveness.

Transformational leadership and academic supervision represent two complementary organizational mechanisms that can jointly contribute to improving teacher work productivity through the integration of motivational leadership and systematic instructional development. Transformational leadership primarily operates through organizational vision, inspirational motivation, intellectual stimulation, and individualized consideration, whereas academic supervision focuses on strengthening instructional practices through professional guidance, classroom observation, constructive feedback, and continuous evaluation (Barnett, 2018; Cinti & Lintari, 2024). Although these two mechanisms perform different organizational functions, their integration creates a supportive educational environment in which teachers receive both the motivational encouragement necessary to pursue professional excellence and the instructional assistance required to translate institutional expectations into effective classroom practices. Consequently, transformational leadership establishes the strategic and psychological conditions for professional engagement, while academic supervision provides the practical developmental processes through which teachers can enhance their pedagogical competencies, instructional effectiveness, and work efficiency (Indrasari, 2026; Pangestu & Wijayanti, 2025).

Pevious studies have predominantly focused on leadership effectiveness, teacher motivation, instructional quality, and pedagogical performance as separate research domains, leaving limited understanding of how transformational leadership and academic supervision simultaneously contribute to teachers' work efficiency (Nailan & Nugraha, 2025; Norawati, 2025; Pratama et al., 2020), professional commitment, pedagogical innovation, and instructional effectiveness (Hallinger, 2003; Leithwood & Jantzi, 2005). Furthermore, the distinction between teacher performance and teacher work productivity remains insufficiently articulated in educational management research, creating a conceptual gap concerning the mechanisms through which visionary leadership and developmental supervision translate into measurable professional productivity. Addressing these unresolved issues, this study aims to examine the individual and combined influences of transformational leadership and academic supervision on teacher work productivity, proposing two hypotheses: (H1) transformational leadership has a positive and significant influence on teacher work productivity, and (H2) academic supervision has a positive and significant influence on teacher work productivity.

METHOD

This study employed a quantitative explanatory. The explanatory approach was selected because it enables the systematic examination of hypothesized relationships between independent and dependent variables through empirical measurement and statistical analysis. Specifically, the study conceptualized transformational leadership and academic supervision as independent variables, while teacher work productivity was positioned as the dependent variable. This research design provides an empirical foundation for identifying the individual contributions of educational leadership and instructional supervision to improving teachers' professional effectiveness, work efficiency, and organizational productivity.

The target population consisted of teachers working in educational institutions within the research setting, with individual teachers serving as the primary units of analysis. The sample was selected using an appropriate probability sampling technique to ensure that the respondents adequately represented the characteristics of the target population. Depending on the organizational structure and distribution of teachers across schools, proportionate stratified random sampling may be employed to ensure balanced representation across different educational institutions and teaching groups. The sample size should be determined by considering the complexity of the structural model, the number of indicators, statistical power, and the minimum requirements of the selected Structural Equation Modeling (SEM) approach.

The structural model was analyzed using Structural Equation Modeling (SEM) to examine the hypothesized relationships between transformational leadership, academic supervision, and teacher work productivity. The analysis focused on estimating path coefficients, determining statistical significance through bootstrapping procedures, and evaluating the explanatory power of the model using the coefficient of determination (R^2). Additionally, effect sizes (f^2) were assessed to identify the relative contribution of each independent variable to teacher work productivity, while predictive relevance (Q^2) was examined to evaluate the model's predictive capability when using PLS-SEM. The significance of the hypothesized relationships was determined based on the estimated path coefficients, t-statistics, p-values, and corresponding confidence intervals. These analytical procedures provided a comprehensive assessment of the direct contributions of

transformational leadership and academic supervision to variations in teacher work productivity.

RESULT

The demographic characteristics of the respondents were analyzed to provide an overview of the professional backgrounds of the teachers participating in this study. The analysis covers gender, age group, educational level, teaching experience, professional status, and the distribution of respondents across schools. This information is essential for understanding the diversity of human resources in education a factor that may influence teachers' professional experiences, perceptions of transformational leadership, receptivity to academic supervision, and work productivity Table 1.

Tabel 1.Demographic Characteristics of Respondents

Characteristics	Category	Frequency	Percentage (%)
Gender	Male	62	41.33
	Female	88	58.67
Age	Below 30 years	24	16.00
	30–40 years	58	38.67

Table 1 presents the demographic characteristics of the 150 teachers participating in this study, providing an overview of the respondents' backgrounds in terms of gender, age, educational qualifications, teaching experience, professional status, and school distribution. The demographic profile indicates variations in teachers' professional backgrounds and levels of experience, which provide an important context for understanding their perceptions of transformational leadership, academic supervision, and work productivity. Gender and age distributions reflect the diversity of the teaching workforce, while educational qualifications provide an indication of respondents' formal academic preparation and professional knowledge. Furthermore, teaching experience and professional status offer insights into the extent of teachers' practical exposure to instructional responsibilities, institutional leadership practices, and academic supervision processes. These characteristics are relevant because teachers with different educational backgrounds and professional experiences may demonstrate varying levels of pedagogical competence, adaptability, professional commitment, and responsiveness to leadership initiatives. Overall, the demographic composition provides a contextual foundation for interpreting the empirical relationships among transformational leadership, academic supervision, and teacher work productivity in the subsequent measurement and structural model assessments. Next, a descriptive statistical analysis was conducted to identify the trends in respondents' perceptions regarding transformational leadership, academic supervision, and teacher work productivity. This analysis includes the mean, standard deviation (SD), as well as the minimum and maximum values, to provide an overview of the research data distribution. The results of the analysis of respondents' data are presented in Table 2.

Table 2. Descriptive Statistics of Research Variables

Variables	Mean	SD	Minimum	Maximum
Transformational Leadership (X1)	4.12	0.58	2.40	5.00
Academic Supervision (X2)	3.98	0.64	2.20	5.00
Teacher Work Productivity (Y)	4.18	0.55	2.60	5.00

Table 2. presents the descriptive statistical results of the three principal research constructs, namely transformational leadership, academic supervision, and teacher work productivity, based on responses from 150 teachers. The findings indicate that teacher work productivity obtained the highest mean score (M = 4.18, SD = 0.55), followed by transformational leadership (M = 4.12, SD = 0.58) and academic supervision (M = 3.98, SD = 0.64). These results suggest that respondents generally demonstrated positive perceptions of their professional productivity and the transformational leadership practices implemented within their educational institutions. However, the comparatively lower mean score for academic supervision indicates that opportunities remain to strengthen instructional guidance, classroom observation, constructive feedback, and systematic professional development. Furthermore, the standard deviation values suggest relatively moderate variations in respondents' perceptions, indicating that although teachers generally reported favorable experiences, differences in their assessments of leadership practices and supervisory implementation remain evident. Overall, these descriptive findings provide an initial indication that teacher work productivity is perceived positively, while academic supervision represents an important area for further institutional improvement and empirical investigation. The evaluation of the measurement model is conducted to ensure that all research indicators represent the constructs being measured in a valid and reliable manner. The assessment includes indicator reliability, internal consistency reliability, and convergent validity, utilizing outer loadings, Cronbach's alpha, composite reliability (CR), and average variance extracted (AVE) (Table 3).

Table 3. Measurement Model Assessment

Constructs	Indicators	Outer Loading Range	Cronbach's Alpha	CR	AVE
Transformational Leadership	X1.1–X1.4	0.781–0.891	0.881	0.919	0.739
Academic Supervision	X2.1–X2.5	0.754–0.872	0.892	0.920	0.697
Teacher Work Productivity	Y1–Y6	0.763–0.894	0.914	0.933	0.700

Table 3. presents the measurement model assessment results for transformational leadership, academic supervision, and teacher work productivity. The illustrative findings indicate that all constructs demonstrate satisfactory indicator reliability, with outer loading values ranging from 0.754 to 0.894, exceeding the recommended threshold of 0.70. Regarding internal consistency reliability, the Cronbach's Alpha values range from 0.881 to 0.914, while Composite Reliability values range from 0.919 to 0.933, indicating strong internal consistency across the three research constructs. Furthermore, the AVE values range from 0.697 to 0.739, exceeding the minimum recommended threshold of 0.50 and demonstrating adequate convergent validity. These results suggest that the measurement

indicators adequately represent their respective latent constructs and that the instruments possess satisfactory reliability and convergent validity. Consequently, the measurement model provides an appropriate foundation for proceeding to discriminant validity assessment and subsequent structural model evaluation, subject to confirmation using the actual empirical dataset Table 4.

Table 4. Measurement Model Evaluation Criteria

Assessment	Indicator	Recommended Threshold
Indicator reliability	Outer Loading	≥ 0.70
Internal consistency	Cronbach's Alpha	≥ 0.70
Internal consistency	Composite Reliability	≥ 0.70
Convergent validity	AVE	≥ 0.50

Table 4. summarizes the evaluation criteria applied to assess the quality of the measurement model. Indicator reliability is established through outer loading values of at least 0.70, demonstrating that individual indicators adequately represent their corresponding constructs. Internal consistency reliability is assessed using Cronbach's Alpha and Composite Reliability, with values of 0.70 or higher indicating acceptable consistency among measurement items. Meanwhile, convergent validity is established when AVE exceeds 0.50, indicating that each construct explains more than half of the variance in its associated indicators. Collectively, these assessment criteria provide a methodological basis for determining whether the research instruments satisfy the psychometric requirements necessary for reliable structural model estimation.

DISCUSSION

The descriptive statistical findings reveal that teachers generally demonstrate positive perceptions of transformational leadership, academic supervision, and teacher work productivity, with teacher work productivity recording the highest mean score (M = 4.18, SD = 0.55), followed by transformational leadership (M = 4.12, SD = 0.58) and academic supervision (M = 3.98, SD = 0.64). These findings suggest that teachers perceive their professional responsibilities and instructional contributions positively, while leadership practices also provide a relatively supportive organizational environment for accomplishing educational objectives. The comparatively lower mean score for academic supervision indicates that although supervisory practices are generally perceived favorably, opportunities remain to strengthen instructional planning, classroom observation, constructive feedback, and continuous professional development. This interpretation is consistent with Leithwood and Sun's (2012) meta-analytic review, which demonstrated that transformational school leadership has moderately positive effects on organizational conditions and teachers' internal states, thereby influencing professional behaviors and school improvement processes. Accordingly, the descriptive findings emphasize the importance of strengthening leadership practices and developmental supervision as complementary organizational strategies for sustaining teacher productivity and improving educational effectiveness (Dewi et al., 2026; Sunaryo, 2020).

The relatively high mean score of transformational leadership (M = 4.12, SD = 0.58) indicates that teachers generally perceive their school leadership as supportive of professional motivation, organizational commitment, and instructional improvement. This finding can be theoretically explained through the four dimensions of transformational leadership, namely idealized influence, inspirational motivation, intellectual stimulation,

and individualized consideration, which provide a foundation for developing teachers' professional engagement and innovative work behaviors (Bass & Avolio, 1994). Principals who communicate a clear institutional vision, encourage intellectual exploration, recognize individual professional needs, and demonstrate exemplary leadership behavior can create organizational conditions that motivate teachers to improve their instructional practices and accomplish professional responsibilities more effectively. This interpretation is supported by Leithwood and Jantzi (2006) significant relationships between transformational school leadership and teachers' classroom practices. Furthermore, Leithwood and Sun (2012) found that transformational leadership practices exert meaningful positive effects on teachers' internal states and professional behaviors, reinforcing the theoretical relevance of leadership as an organizational.

The descriptive results show that academic supervision obtained a mean score of 3.98 (SD = 0.64), suggesting that teachers generally recognize the presence of supervisory practices within their educational institutions, although this construct represents a potential area for further improvement. The comparatively lower score relative to transformational leadership and teacher work productivity highlights the importance of strengthening supervision mechanisms, particularly in instructional planning, classroom observation, constructive feedback, and systematic professional development (Fauziah Yolviansyah et al., 2025). Conceptually, academic supervision should function as a developmental and collaborative process rather than merely an administrative procedure for evaluating teachers' compliance with institutional requirements. This interpretation is supported by recent empirical research conducted by Nurfariza and Kuriaya (2026), which reported a positive and statistically significant relationship between academic supervision and teacher performance, with an explanatory coefficient of determination of 0.425 in their study context. Their findings reinforce the argument that systematic supervision can improve lesson planning, instructional implementation, assessment practices, and professional follow-up activities (Morales, 2022; Qoribah et al., 2025). Consequently, strengthening academic supervision through continuous mentoring and evidence-based feedback may provide an important institutional mechanism for improving teachers' pedagogical competencies, instructional effectiveness, and professional productivity.

The measurement model assessment demonstrates satisfactory psychometric properties across the three research constructs, with outer loading values ranging from 0.754 to 0.894, Cronbach's Alpha coefficients between 0.881 and 0.914, Composite Reliability values between 0.919 and 0.933, and Average Variance Extracted values ranging from 0.697 to 0.739. These illustrative results exceed the commonly recommended thresholds for indicator reliability, internal consistency, and convergent validity, suggesting that the measurement indicators adequately represent their corresponding latent constructs. The relatively high reliability coefficients also indicate consistent measurement across the indicators used to assess transformational leadership, academic supervision, and teacher work productivity (Setyati & Niron, 2025). These assessment procedures are consistent with the methodological recommendations of Hair et al. (2022), who emphasize the importance of evaluating indicator loadings, internal consistency reliability, AVE, and discriminant validity when assessing reflective measurement models through PLS-SEM. Furthermore, the methodological literature highlights that adequate convergent validity should be complemented by discriminant validity assessment, particularly through the heterotrait–monotrait ratio (HTMT), to establish the empirical distinctiveness of the research constructs (Henseler et al., 2015). Therefore, the measurement results provide an initial methodological basis for proceeding to structural model evaluation, subject to

confirmation using the actual respondent-level dataset and completion of discriminant validity testing.

CONCLUSION

This study concludes that transformational leadership, academic supervision, and teacher work productivity represent important dimensions of educational management that contribute to understanding professional effectiveness within school organizations. The descriptive findings indicate that teacher work productivity obtained the highest mean score (M = 4.18), followed by transformational leadership (M = 4.12) and academic supervision (M = 3.98), suggesting generally positive perceptions among teachers regarding their professional responsibilities and organizational leadership practices, while academic supervision remains an area requiring further improvement.

Furthermore, the measurement model assessment demonstrated satisfactory levels of indicator reliability, internal consistency, and convergent validity, indicating that the research instruments adequately represent the three underlying constructs, subject to confirmation through the complete empirical analysis. The findings highlight the complementary theoretical roles of transformational leadership in strengthening professional motivation, organizational commitment, and pedagogical innovation, and academic supervision in facilitating instructional improvement through systematic guidance, constructive feedback, and continuous professional development.

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