



The Influence of Principal Supportive Leadership and Work Climate on Teacher Job Satisfaction: A Regression Analysis Supporting SDG 4 on Quality Education

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Received: June 14, 2026

Revised: July 29, 2026

Accepted: August 17, 2026

Published: August 17, 2026

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DOI: [10.29303/jppipa.v12i7.16017](https://doi.org/10.29303/jppipa.v12i7.16017)

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Abstract: Teacher job satisfaction (TJS) is a pivotal determinant of academic quality, influencing teachers' motivation, commitment, and professional performance. This study examined the influence of Principal Supportive Leadership (PSL) and Teacher Work Climate (TWC) on TJS among public junior high school teachers in a city in West Sumatra, Indonesia. A quantitative explanatory design with a survey method was employed. Using the Slovin formula and proportionate stratified random sampling, 330 teachers were selected from a population of 1,898. Data were collected using self-report questionnaires utilizing a five-point Likert scale and analyzed through descriptive statistics, simple linear regression, and multiple linear regression, following classical assumption tests (normality, linearity, and multicollinearity). Results showed that PSL had a significant positive influence on TJS, and TWC also significantly influenced TJS. PSL and TWC simultaneously had a significant positive influence on TJS. These findings indicate that supportive leadership and a positive work climate are complementary factors that enhance teacher job satisfaction. This study contributes empirical evidence to educational leadership research. It offers practical implications for school heads and policymakers in fostering leadership practices and organizational climates that support teacher well-being and sustainable school improvement.

Keywords: Supportive leadership; Teacher job satisfaction; Teacher work climate

Introduction

TJS has become one of the most crucial determinants of educational quality because it influences teachers' motivation, commitment, instructional efficacy, and retention. Satisfied teachers are more likely to illustrate stronger professional engagement, deliver higher-quality instruction, and contribute positively to school improvement (Hoque et al., 2023; Melesse & Belay, 2022; Onikoyi, 2023). Improving TJS has become a strategic preference for scholarly policymakers and school heads aiming to improve school effectiveness and ensure sustainable educational quality (Büyükgöze, 2023; Harrison et al., 2023; Singh & Gautam, 2024). A growing body of

educational leadership research highlights that TJS depends not only on teachers' individual characteristics but also on the organizational climate and leadership practices implemented within schools (Dami et al., 2022; Maheshwari, 2022; Yohannes & Wasonga, 2023).

Among the organizational characteristics controlling TJS, PSL has been identified as one of the most significant leadership practices in educational settings. Supportive leadership reflects principals' willingness to assist teachers in solving professional challenges, deliver formative feedback, identify triumphs, encourage participation in decision-making, and establish a fair and collaborative working environment (Ton et al., 2022; Hasan et al., 2025; Uman et al., 2024). Such leadership behaviors strengthen

How to Cite:

Rismawati, Sabandi, A., Irsyad, & Sulastr². (2026). The Influence of Principal Supportive Leadership and Work Climate on Teacher Job Satisfaction: A Regression Analysis Supporting SDG 4 on Quality Education. *Jurnal Penelitian Pendidikan IPA*, 12(7), 753-761. <https://doi.org/10.29303/jppipa.v12i7.16017>

interpersonal trust, reduce work-related stress, and create circumstances that enable teachers to conduct themselves more effectively (Bagdziūnienė et al., 2022; Cai et al., 2023; Greco et al., 2022). A supportive working environment and effective administrative leadership significantly improve teachers' job satisfaction and reduce occupational stress, with teacher self-efficacy functioning as an important explanatory mechanism (Ghamrawi et al., 2023; Lee & Swaner, 2023).

The positive contribution of supportive leadership has also been confirmed across different educational contexts and organizational outcomes. Supportive leadership strengthens teachers' organizational dedication by improving their quality of job life, suggesting that school heads play an important role in enabling teachers' long-term commitment to their institutions (Ertürk, 2023; Ibrahim et al., 2023; Riza et al., 2025). Supportive principals also contribute significantly to building positive organizational cultures that address complex educational challenges, while participatory leadership practices enhance teacher professionalism through continuous supervision, collaborative decision-making, and sustained professional development (Ayumi & Nasution, 2025; Irfan et al., 2025). Collectively, these results mean that PSL creates organizational conditions that foster positive teacher attitudes and improve workplace experiences.

Besides leadership, TWC represents another important organizational factor influencing teachers' professional experiences and attitudes toward their work. TWC refers to teachers' perceptions of interpersonal associations, communication, collaboration, administrative support, fairness, safety, and the overall psychological and physical environment within schools (Konishi et al., 2022; Martinsone et al., 2023; Sanchez et al., 2022). An approving work climate promotes cooperation, mutual trust, professional learning, and emotional security, whereas an unfavorable climate often results in interpersonal conflict, professional isolation, and increased occupational stress (Paredes-Saavedra et al., 2024; Rimbayana et al., 2022). Leadership approaches are closely associated with teachers' perceptions of school climate, particularly when principals adopt collaborative and distributed leadership approaches that encourage teacher participation and strengthen organizational quality (Sanchez et al., 2022; Veletić et al., 2023).

An expanding body of empirical investigation demonstrates that the TWC directly contributes to TJS. Effective administrative leadership, combined with a supportive work environment, plays an important role in enhancing teachers' job satisfaction and reducing their occupational stress, with teacher self-efficacy serving as a key mediating factor in this relationship (Jentsch et al.,

2023; Uman et al., 2024). Similarly, school climate positively influences teachers' job satisfaction, either directly or indirectly through enhanced self-efficacy, highlighting the interaction between organizational and psychological factors in shaping teachers' professional experiences (Fang & Qi, 2023; Nalipay, 2023; Tekin, 2023). Positive relationships between school climate and TJS have also been observed in educational systems facing prolonged political instability and conflict, demonstrating that supportive organizational environments remain essential regardless of contextual challenges (Banwo et al., 2022; Noori et al., 2024; Otrębski, 2022).

Recent educational leadership literature increasingly recognizes that principal leadership and TWC should not be examined in isolation, as they interact to shape teachers' workplace experiences. Leadership behaviors influence organizational climate by establishing norms of fairness, collaboration, communication, professional support, and shared responsibility, whereas a favorable work climate reinforces teachers' motivation, organizational dedication, and fulfillment (Sugiyanto et al., 2025; Zhang et al., 2025). School climate has been shown to mediate the effect of instructional leadership on educational outcomes, indicating that leadership often operates indirectly through improvements in organizational conditions (Dutta & Sahney, 2022). Similarly, instructional leadership enhances school climate, which subsequently contributes to higher TJS and improved teacher performance (Habibi et al., 2025). Collective leadership has likewise been recognized as a significant predictor of greater school climate and teacher retention, reinforcing the complementary association between leadership practices and organizational climate in promoting positive educational outcomes (Eckert & Morgan, 2026).

Although previous studies have consistently demonstrated positive associations among leadership, school climate, and teacher-related outcomes, several essential holes remain. First, investigations of supportive leadership have primarily focused on teacher well-being, organizational citizenship, organizational commitment, professional development, and school culture rather than directly examining TJS as the primary outcome variable (Ertürk, 2023; Ibrahim et al., 2023; Lee & Swaner, 2023). Second, research concerning TWC has generally emphasized its influence on teacher performance, organizational commitment, student achievement, or teacher self-efficacy, while relatively little attention has been earmarked to simultaneously examining PSL and TWC as predictors of TJS (Dutta & Sahney, 2022; Fang & Qi, 2023; Habibi et al., 2025). Third, although structural equation modeling has become the dominant analytical approach in recent educational

leadership research, empirical evidence comparing the independent and simultaneous contributions of PSL and TWC through simple and multiple regression analyses remains relatively limited.

These gaps point to a clear novelty in the present study: unlike prior research that typically examines PSL and TWC separately, in relation to other outcomes, or through mediation-focused SEM frameworks, this study offers a direct, dual-pathway regression analysis to determine the individual and combined contributions of PSL and TWC specifically on TJS an approach that isolates each variable's unique explanatory power more clearly than SEM-based studies typically allow within the underrepresented context of public junior high schools in West Sumatra, Indonesia. Addressing these gaps is critical both theoretically, by clarifying the distinct and joint roles of PSL and TWC and refining organizational behavior models that often treat leadership and climate as overlapping constructs, and practically, by helping school leaders and policymakers identify which factor or their combination exerts greater influence on teacher retention, motivation, and performance, thereby supporting more effective and sustainable school improvement strategies given TJS's foundational role in instructional quality and student learning outcomes.

Accordingly, this study examines the individual and combined effects of PSL and TWC on TJS. By integrating leadership and organizational climate perspectives, this research aims to extend the theoretical understanding of academic leadership while offering practical guidance for school principals and policymakers to strengthen supportive leadership and foster positive work climates to enhance TJS and school effectiveness.

Method

This study employed a quantitative research approach to investigate the relationships among PSL, TWC, and TJS. The proposed relationships were examined using simple and multiple linear regression analyses to determine both the individual and joint contributions of the independent variables to TJS. These statistical techniques are widely used to examine predictive relationships among variables in educational research. Figure 1 presents the study's overall workflow, including sample selection, instrument validation, data collection, and statistical analysis. The study population consisted of 1,898 teachers working in 45 public junior high schools located in a city in West Sumatra Province, Indonesia. The Cochran formula with finite population correction (FPC) at a 95% confidence level and a 5% margin of error was used to determine the sample size, yielding a minimum requirement of 321 teachers.

Accordingly, 321 teachers were selected using proportionate stratified random sampling. Respondents from each public junior high school were randomly selected in proportion to the number of teachers in each school.

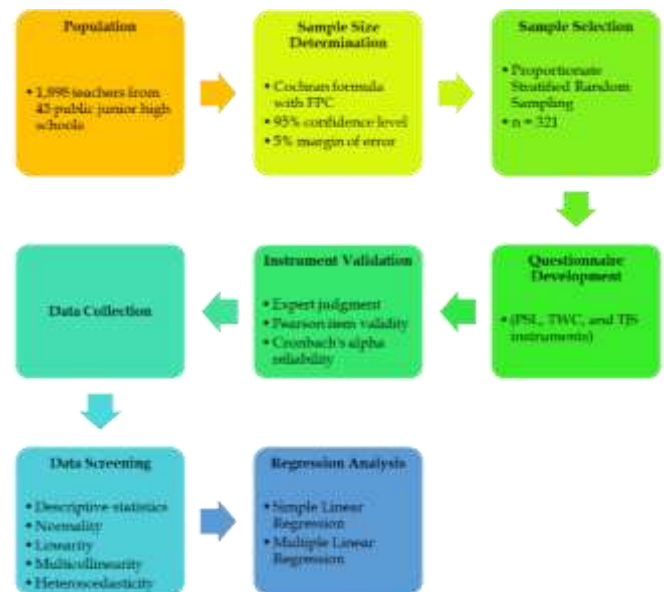


Figure 1. Study's overall workflow

Data were collected using structured questionnaires designed to measure PSL, TWC, and TJS. Responses to all questionnaire items were recorded using a five-point Likert scale ranging from strongly disagree to agree strongly. Before being administered to the respondents, the instruments were reviewed by experts to establish content validity. Item validity was subsequently examined using Pearson's product-moment correlation, while the reliability of each construct was evaluated based on Cronbach's alpha coefficient.

All statistical analyses were conducted using IBM SPSS Statistics version 23. The data analysis consisted of descriptive statistics, tests of regression assumptions, simple linear regression, and multiple linear regression. Descriptive statistics were used to characterize the research variables by reporting the minimum and maximum scores, means, and standard deviations. Prior to the regression analysis, the data were examined for normality, linearity, and heteroscedasticity (using Glejser's test) to ensure that the assumptions of linear regression were satisfied. Because multicollinearity is relevant only when multiple predictors are included, it was assessed exclusively for the multiple linear regression model. Simple linear regression was employed to examine the individual effects of PSL and TWC on TJS. Furthermore, multiple linear regression analysis was conducted to assess the combined influence of both independent variables on TJS.

Result and Discussion

Result

Descriptive Statistics

Table 1 presents the descriptive statistics for the three study variables: PSL, TWC, and TJS. PSL obtained a mean score of 117.09 (SD = 10.93), with observed scores ranging from 82 to 140. TWC had the highest mean among the variables (M = 123.13, SD = 11.64), with scores ranging from 91 to 147. Meanwhile, TJS had a mean score of 108.25 (SD = 11.92), with minimum and maximum values of 71 and 130, respectively. Overall, the descriptive statistics indicate that all three variables exhibited relatively wide score distributions, as reflected in the observed ranges and standard deviations. The standard deviations, ranging from 10.93 to 11.92, suggest a moderate level of variation in respondents' perceptions across the measured constructs.

Assumption Testing

Prior to regression analysis, the data were examined to verify that the assumptions underlying linear regression were satisfied. The normality test yielded a p-value of 0.20, indicating that the residuals were normally distributed ($p > 0.05$). The linearity test also confirmed linear relationships between the independent and dependent variables, with deviation from linearity significance values of 0.21 for the relationship between PSL and TJS, and 0.11 for the relationship between TWC and TJS, both exceeding the 0.05 threshold.

Table 1. Summary of descriptive statistics

Variable	Mean	Std. Deviation	Max	Min
Principal Supportive Leadership	117.09	10.93	140	82
Teacher Work Climate	123.13	11.64	147	91
Teacher Job Satisfaction	108.25	11.92	130	71

The multicollinearity test indicated no multicollinearity, as the variance inflation factor (VIF) for both independent variables was 1.14, well below the commonly accepted threshold of 10. In addition, Glejser's heteroscedasticity test yielded significance values of 0.10 for PSL and 0.12 for TWC, indicating the absence of heteroscedasticity because both values were greater than 0.05. These findings demonstrate that all assumptions required for simple and multiple linear regression analyses were satisfactorily met.

Regression Analysis

Simple linear regression analysis was performed to examine the individual effects of PSL and TWC on TJS. As presented in Table 2, PSL demonstrated a moderate positive relationship with TJS ($R = 0.47$), explaining 23% of the variance in the dependent variable ($R^2 = 0.23$). The

regression coefficient shown in Table 3 indicated that PSL had a positive and statistically significant effect on TJS ($B = 0.52$, $\beta = 0.47$, $t = 9.61$, $p < 0.00$), suggesting that higher levels of supportive leadership were associated with higher levels of TJS. TWC exhibited a stronger relationship with TJS ($R = 0.74$), accounting for 55% of the variance ($R^2 = 0.55$). The regression coefficient further confirmed that TWC had a positive and significant effect on TJS ($B = 0.76$, $\beta = 0.74$, $t = 19.74$, $p < 0.00$), indicating that improvements in the work climate were associated with increased TJS.

Multiple linear regression analysis was subsequently conducted to evaluate the simultaneous effects of PSL and TWC on TJS. The combined model produced a multiple correlation coefficient of 0.78 and explained 60% of the variance in TJS ($R^2 = 0.60$; Adjusted $R^2 = 0.60$), indicating substantial explanatory power. Both independent variables remained significant predictors in the multiple regression model. PSL showed a positive contribution ($B = 0.27$, $\beta = 0.24$, $t = 6.46$, $p < 0.00$), while TWC demonstrated a stronger positive contribution ($B = 0.67$, $\beta = 0.66$, $t = 17.37$, $p < 0.00$). These findings indicate that TWC contributed more strongly to TJS than PSL when both variables were considered simultaneously. The overall regression model was statistically significant, as indicated by the ANOVA results presented in Table 4 ($F = 240.49$, $p < 0.00$). This result confirms that the combined regression model provides a significantly better prediction of TJS than a model without the predictor variables.

Table 2. Summary of regression models

Analysis	R	R ²	Adjusted R ²	Std Error of the Estimate
PSL → TJS	0.47	0.23	0.22	10.51
TWC → TJS	0.74	0.55	0.55	8.01
PSL, TWC → TJS	0.78	0.60	0.60	7.54

Table 3. Regression coefficients

Analysis	Model	B	Std Error	Beta	t	p
PSL → TJS	PSL	0.52	0.05	0.47	9.61	0.00
TWC → TJS	TWC	0.76	0.04	0.74	19.74	0.00
PSL, TWC → TJS	PSL	0.27	0.04	0.24	6.46	0.00
	TWC	0.67	0.04	0.66	17.37	0.00

Table 4. ANOVA

Model	Sum of Squares	df	Mean Square	F	p
Regression	27373.95	2	13686.98	240.49	0.00
Residual	18098.61	318	56.91		
Total	45472.56	320			

Discussion

The findings of this study demonstrate that PSL has a significant positive influence on TJS. This result indicates that teachers who perceive their principals as

supportive tend to experience higher levels of job satisfaction. Supportive principals create a work environment characterized by trust, fairness, recognition, open communication, and professional assistance, enabling teachers to perform their responsibilities with greater confidence and enthusiasm (Setiawan et al., 2025; Zhang & Ye, 2024). Teachers who perceive higher levels of supportive leadership generally report better well-being and stronger commitment to promoting their schools, suggesting that supportive leadership extends beyond managerial effectiveness to influence teachers' emotional attachment to their institutions (Hassanein et al., 2025; Karaferye & Bellibaş, 2025; Lee & Swaner, 2023).

The present findings are consistent with previous empirical studies highlighting the importance of supportive leadership in educational organizations. Supportive leadership has been found to encourage teachers' organizational citizenship behaviors by fostering collaborative, fair, and respectful working environments where teachers feel appreciated (Ertürk, 2023; Hendriani et al., 2024; Maryati et al., 2025; Tran, 2025). Similar evidence also indicates that supportive leadership strengthens organizational commitment by improving teachers' quality of work life (Fardiansyah et al., 2025; Ibrahim et al., 2023). Furthermore, recent literature reviews have consistently identified supportive leadership as one of the most influential leadership approaches for improving teachers' subjective well-being, motivation, mental health, and job satisfaction (Karakus et al., 2026). These findings collectively reinforce the argument that supportive leadership serves as an essential organizational mechanism through which principals can cultivate positive teacher attitudes and improve school effectiveness.

The results also indicate that TWC significantly influences TJS. This finding confirms that teachers' perceptions of their working environment represent a critical determinant of their professional satisfaction. Positive working environments and supportive administrative leadership have been shown to improve teachers' job satisfaction while reducing work-related stress, with teacher self-efficacy serving as an important explanatory mechanism (Jentsch et al., 2023; Nurlaili, 2025; Syarip & Dadang, 2025). Similarly, school climate directly enhances vocational teachers' job satisfaction and indirectly contributes through increased teacher self-efficacy, indicating that organizational environments influence both psychological and professional outcomes (Fang & Qi, 2023).

This finding is consistent with other previous studies emphasizing the importance of school climate in shaping teachers' workplace experiences in multiple situations. Findings reported in educational contexts

experiencing prolonged conflict show that positive school climates continue to predict higher TJS despite challenging external conditions (Agustina & Niron, 2025; Nisak et al., 2025; Noori et al., 2024). Furthermore, organizational climate consistently predicts teachers' job satisfaction across different educational institutions, demonstrating that positive organizational environments remain universally beneficial regardless of school characteristics (Otrębski, 2022). The consistency of these findings across diverse educational contexts strengthens the conclusion that TWC represents one of the most important organizational factors affecting TJS.

Multiple regression analysis revealed that PSL and TWC simultaneously contribute significantly to TJS. These results imply that leadership practices and the organizational climate should be viewed as interconnected factors that together influence teachers' work experiences. School climate has been shown to mediate the influence of instructional leadership on educational outcomes, indicating that leadership often improves organizational performance by creating favorable organizational environments (Dutta & Sahney, 2022; Raharjo et al., 2026; Sudibyo, 2024). Similarly, instructional leadership contributes to higher TJS by improving school climate and teacher self-efficacy (Habibi et al., 2025).

The current results support existing evidence suggesting that leadership, school climate, and teacher outcomes are closely associated. In addition, collective leadership has been recognized as an important determinant of positive school climate and teacher retention, underscoring that leadership practices and organizational climate work together to shape educational organizations (Eckert & Morgan, 2026). Therefore, the present findings extend prior literature by demonstrating that PSL and TWC independently and jointly contribute to TJS in a multiple regression framework.

Implication

This study provides both theoretical and practical implications for educational leadership research. The findings demonstrate that PSL and TWC are significant predictors of TJS, supporting the view that leadership behavior and organizational climate are complementary organizational factors influencing teachers' workplace attitudes. These findings also extend previous research by providing empirical evidence of their individual and simultaneous contributions using simple and multiple regression analyses.

From a practical perspective, the findings suggest that school principals should strengthen supportive leadership practices by fostering open communication, recognizing teachers' contributions, encouraging

participation in decision-making, and providing continuous professional support. At the same time, schools should cultivate a positive work climate characterized by collaboration, trust, fairness, and organizational support. These integrated efforts are expected to enhance teachers' job satisfaction, strengthen organizational commitment, and ultimately improve overall school effectiveness.

Limitation and Future Research

This study has several limitations that should be considered when interpreting the findings. First, the participants were drawn exclusively from public junior high school teachers in a city in West Sumatra, Indonesia. Consequently, the findings may not be fully generalizable to teachers working in other educational levels, private schools, or different geographical and cultural contexts. Second, the study employed a cross-sectional design in which data were collected at a single point in time, limiting the ability to infer causal relationships among the variables. Third, all variables were measured using self-report questionnaires, which may be subject to common method bias and respondents' subjective perceptions.

To improve the generalizability of future findings, subsequent research should incorporate participants from different regions, school types, and educational levels. Employing longitudinal research designs would also enable researchers to examine the development of TJS over time while providing stronger support for causal interpretations. In addition, future studies may extend the proposed model by incorporating other organizational and psychological variables, such as teacher self-efficacy, organizational commitment, teacher engagement, organizational culture, or teacher well-being, to obtain a more comprehensive understanding of the factors influencing TJS.

Conclusion

This study concludes that PSL and TWC are significant predictors of TJS among public junior high school teachers in a city in West Sumatra, Indonesia. Individually, PSL explains 23% of the variance in TJS, while TWC accounts for 55%, indicating that TWC has a stronger individual contribution to teachers' job satisfaction. Simultaneously, PSL and TWC explain 60% of the variance in TJS, demonstrating that supportive leadership and a positive work climate complement each other in enhancing teachers' job satisfaction. These findings highlight the importance of strengthening supportive leadership practices alongside fostering a collaborative and supportive work climate to improve teacher well-being and organizational effectiveness. Future research should investigate additional factors

influencing TJS and employ longitudinal or mixed-methods designs to provide a more comprehensive understanding of teacher job satisfaction across different educational settings.

Acknowledgments

The authors would like to express their sincere gratitude to the Dean of the Faculty of Education, Universitas Negeri Padang; the Head of the Master's Program in Educational Administration; all lecturers of the Master's Program in Educational Administration, Universitas Negeri Padang; and all parties who provided valuable support and assistance throughout this research. Their contributions made the successful completion of this study possible.

Author Contributions

Conceptualization, methodology, R. and A.S.; software, formal analysis, investigation, data curation, writing original draft preparation, project administration, R.; validation, supervision, A.S., I., and S.; resources, writing review and editing, A.S. All authors have read and agreed to the published version of the manuscript.

Funding

This research received no external funding.

Conflicts of Interest

The authors declare no conflict of interest.

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