Optimizing Teacher Engagement: The Role of Self-Efficacy, Interpersonal Communication, Organizational Culture, and Job Satisfaction Using SITOREM Analysis

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Abstract: Teacher engagement represents a teacher's alignment with their organization, characterized by physical, emotional, and rational commitment, fostering satisfaction and dedication to their profession. This study investigates strategies to enhance teacher engagement by analyzing the influence of self-efficacy, interpersonal communication, organizational culture, and job satisfaction. Employing a quantitative approach, the research uses path analysis to explore variable relationships and the SITOREM method to prioritize indicators for targeted interventions. Data were collected through surveys administered to 168 permanent teachers from PGRI vocational high schools in Bogor Regency, selected using the Slovin formula. The findings demonstrate that self-efficacy, interpersonal communication, and organizational culture significantly impact teacher engagement, both directly and indirectly, through job satisfaction. Organizational culture emerged as the most influential factor, highlighting the critical role of fostering a supportive, adaptive, and value-oriented work environment. SITOREM analysis identified actionable priorities, including enhancing teacher self-efficacy through vicarious experiences and verbal persuasion and strengthening organizational culture by promoting innovation and inclusivity. This study advances educational management by providing evidence-based recommendations for fostering teacher engagement. It underscores the necessity of integrating strategies that enhance individual capabilities and organizational dynamics to cultivate a motivated and committed teaching workforce. However, as the research is confined to vocational school teachers in one region, further studies are needed to validate and generalize these findings across diverse educational settings.

Keywords: teacher engagement, self-efficacy, interpersonal communication, organizational culture, job satisfaction.

▪ INTRODUCTION

Teacher engagement has emerged as a central focus in educational research, reflecting the extent to which teachers are physically, emotionally, and cognitively invested in their roles and their organizations. Engagement is widely regarded as a critical determinant of job satisfaction, teaching effectiveness, and overall organizational outcomes (Schaufeli & Bakker, 2010). Engaged teachers demonstrate loyalty and dedication, leading to improved student outcomes and enhanced school performance (Han & Yin, 2016). Despite its importance, maintaining high levels of teacher engagement remains a persistent challenge, particularly in vocational education settings where teachers face unique pressures, including the need to balance academic instruction with technical skills development. Understanding the factors that influence teacher engagement is crucial for addressing these challenges and fostering high-quality education.

Teacher engagement is influenced by several interrelated factors, including self-efficacy, interpersonal communication, organizational culture, and job satisfaction. Self-

efficacy, as defined by Bandura (1997), refers to an individual's belief in their capacity to execute tasks effectively. In teaching, self-efficacy shapes not only instructional strategies but also teachers' resilience in overcoming challenges (Klassen et al., 2011). Interpersonal communication plays an equally pivotal role, serving as a foundation for collaboration and trust within the school environment. Effective communication mitigates workplace conflicts, promotes trust, and creates a supportive atmosphere conducive to teaching and learning (Keyton, 2017). Organizational culture, encompassing shared values, norms, and practices, provides the structural context within which teachers operate. A positive organizational culture has been shown to enhance motivation, cohesion, and performance (Schein, 2010). Lastly, job satisfaction functions as a mediating factor, transforming the effects of self-efficacy, communication, and culture into tangible outcomes. Satisfied teachers are more likely to be engaged, committed, and effective in their roles (Judge et al., 2001).

While these factors have been extensively studied in general education, vocational education remains underexplored despite its unique demands. Vocational teachers must integrate academic knowledge with industry-specific skills, requiring tailored support systems and a distinct set of competencies. The interplay between self-efficacy, communication, organizational culture, and job satisfaction in influencing teacher engagement within this context has not been fully examined. Moreover, existing research often isolates these factors, providing limited insights into their combined and mediating effects. This study addresses these gaps by investigating the direct and indirect relationships among self-efficacy, interpersonal communication, organizational culture, and teacher engagement, with job satisfaction as a mediator.

Another critical gap lies in the practical application of findings to improve teacher engagement. Although theoretical recommendations abound, few studies employ systematic approaches like SITOREM (Scientific Identification Theory for Operational Research in Education Management) analysis to identify and prioritize actionable strategies. SITOREM analysis integrates empirical data with expert evaluations to highlight key areas for intervention, offering a structured and practical decision-making framework (Rivai et al., 2017). By incorporating SITOREM analysis, this study goes beyond examining relationships to provide prioritized recommendations for enhancing teacher engagement in vocational schools.

The findings of this research have significant theoretical and practical implications. Theoretically, the study enriches the understanding of teacher engagement by integrating multiple constructs into a unified framework, demonstrating how individual and organizational factors collectively influence engagement. The inclusion of job satisfaction as a mediating variable adds depth to existing models, highlighting its role in amplifying the impact of other factors. Practically, the study provides evidence-based recommendations for policymakers and school administrators. By identifying priority indicators through SITOREM analysis, the study offers actionable insights for designing interventions that promote teacher engagement, thereby improving educational outcomes in vocational settings. This study seeks to address critical gaps in the literature by examining the relationships among self-efficacy, interpersonal communication, organizational culture, and job satisfaction in shaping teacher engagement. Through a robust methodological approach involving path analysis and SITOREM, the study aims to provide comprehensive insights and practical solutions for enhancing teacher engagement in vocational education. Subsequent sections detail the research methods,

findings, and implications, offering a thorough exploration of the factors driving teacher engagement and strategies for its enhancement.

▪ **LITERATURE REVIEW**
Self-Efficacy and Teacher Engagement

Self-efficacy, defined by Bandura (1997) as an individual's belief in their ability to execute tasks effectively, is a critical factor influencing teacher engagement. Teachers with high self-efficacy are more motivated, employ innovative instructional strategies, and demonstrate resilience in addressing challenges (Klassen et al., 2011). Such teachers tend to engage more deeply, both cognitively and emotionally, with their roles. Han and Yin (2016) emphasized that self-efficacy correlates positively with emotional and cognitive engagement, enabling teachers to manage classroom dynamics effectively and cater to diverse student needs.

Empirical studies affirm the theoretical importance of self-efficacy. Skaalvik and Skaalvik (2014) found that teachers with higher self-efficacy experienced greater job satisfaction and engagement due to their perceived competence in achieving educational goals. Similarly, Zee and Koomen (2016) highlighted that self-efficacy mitigates teacher burnout by buffering against stress and emotional exhaustion. In vocational education, where teachers must integrate technical and academic curricula, self-efficacy is especially crucial. Teachers who believe in their abilities are better equipped to adapt to the dynamic demands of their roles, enhancing their engagement and overall effectiveness. Interventions to strengthen self-efficacy often focus on mastery experiences, vicarious learning, and verbal persuasion (Tschannen-Moran & Hoy, 2001). For vocational educators, successful delivery of technical lessons or effective classroom management can boost confidence in their abilities. Observing peers excel in similar tasks further reinforces self-efficacy, particularly in collaborative learning environments. Such strategies are essential in vocational schools, where peer mentoring and shared best practices can significantly enhance teacher engagement.

Interpersonal Communication and Teacher Engagement

Interpersonal communication, characterized as the exchange of information and ideas between individuals, is pivotal in fostering teacher engagement. Effective communication creates an environment of collaboration, trust, and mutual respect, which is conducive to teacher engagement and satisfaction (Keyton, 2017). Teachers who communicate effectively with colleagues, students, and administrators are better positioned to align their efforts with organizational goals, enhancing their sense of engagement.

Research underscores the impact of interpersonal communication on teacher engagement. Gluyas (2015) found that open and empathetic communication reduces workplace conflicts and strengthens team cohesion, contributing to higher teacher engagement. Bakker and Demerouti (2017) similarly demonstrated that supportive communication networks buffer against job stress and burnout. In vocational schools, effective communication is critical for aligning academic instruction with industry standards and maintaining productive collaborations with external stakeholders.

Strategies to enhance interpersonal communication include training programs that focus on active listening, empathy, and conflict resolution. Such programs not only improve communication skills but also foster a culture of openness and mutual respect, which is essential for sustaining teacher engagement. Vocational schools can further

promote regular team meetings and peer coaching sessions to encourage dialogue and collaborative problem-solving, ensuring alignment with institutional objectives and industry needs.

Organizational Culture and Teacher Engagement

Organizational culture refers to the shared values, norms, and practices that shape an institution's identity and operations (Schein, 2010). A positive organizational culture enhances teacher engagement by creating an environment where teachers feel valued, motivated, and empowered. Key elements of organizational culture, including innovation, inclusivity, and adaptability, significantly influence teacher attitudes and behavior.

Empirical studies consistently link organizational culture with teacher engagement. Hulpia et al. (2011) demonstrated that inclusive and supportive cultures enhance teachers' commitment to their institutions, fostering higher levels of engagement. Deal and Peterson (2016) similarly noted that schools promoting innovation and collaboration experience greater teacher satisfaction and engagement. In vocational education, organizational culture assumes heightened importance due to the dual challenges of meeting academic and technical demands. To foster a positive organizational culture, schools can recognize teacher achievements, involve teachers in decision-making, and encourage innovation. In vocational schools, these efforts should also align with industry standards and practices, ensuring that teachers feel supported in their unique roles. Promoting collaboration through team-building activities and professional learning communities can further strengthen organizational culture and enhance teacher engagement.

Job Satisfaction and Teacher Engagement

Job satisfaction, the degree to which individuals feel content and fulfilled in their roles, is a strong predictor of teacher engagement (Judge et al., 2001). Satisfied teachers are more likely to invest emotional, cognitive, and physical resources into their work, demonstrating higher levels of engagement. Key factors influencing job satisfaction include compensation, working conditions, career development opportunities, and interpersonal relationships (Locke, 1976).

The link between job satisfaction and teacher engagement is well-documented. Klassen and Chiu (2010) found that satisfied teachers were more engaged in their work and less prone to burnout. Perera et al. (2018) also emphasized the mediating role of job satisfaction in the relationship between organizational support and teacher engagement. In vocational schools, where teachers face the added pressure of integrating technical skills with academic instruction, job satisfaction becomes even more critical for sustaining engagement. Strategies to improve job satisfaction include offering competitive salaries, providing professional development opportunities, and fostering a supportive work environment. Schools can also implement feedback systems to address teacher concerns and ensure that their needs are met. Addressing these factors can create a positive work environment that not only enhances job satisfaction but also drives teacher engagement and retention.

SITOREM Analysis for Enhancing Teacher Engagement

SITOREM (Scientific Identification Theory for Operational Research in Education Management) analysis offers a structured approach to identifying and prioritizing areas for improvement based on empirical data and expert insights. It has proven effective in

evaluating and enhancing organizational performance by focusing on high-impact indicators (Rivai et al., 2017). In this study, SITOREM analysis identified critical indicators for improving teacher engagement, such as knowledge acquisition, openness in communication, fairness, and pay. These findings align with existing research emphasizing the importance of addressing both individual and organizational factors to boost engagement. High-priority indicators serve as focal points for interventions, enabling schools to allocate resources strategically and implement targeted solutions.

SITOREM analysis provides actionable recommendations for school administrators and policymakers. For example, investing in professional development programs to enhance self-efficacy and communication skills can directly improve teacher engagement. Similarly, fostering a positive organizational culture through fairness, recognition, and inclusivity can further strengthen teacher satisfaction and performance. By addressing these priority areas, vocational schools can create an environment that promotes sustained teacher engagement and improves educational outcomes.

▪ **METHOD**
Participants

The study focused on permanent teachers employed at PGRI vocational high schools in Bogor Regency, Indonesia. The total population consisted of 284 teachers actively engaged in both instructional and organizational roles. To determine the appropriate sample size, the Slovin formula was applied with a 5% margin of error, resulting in a sample size of 168 teachers. A stratified random sampling method was used to ensure representation across various school units, job roles, and lengths of service. This approach was particularly suitable given the diversity in vocational school faculty, which includes academic instructors and industry-specialized educators. By stratifying the sample, the study captured a broad spectrum of perspectives, enhancing the representativeness and relevance of the findings.

Inclusion criteria required participants to be permanent teachers actively involved in teaching responsibilities, encompassing both academic and vocational subject areas, and to consent to participate in the research. Teachers in part-time roles or purely administrative positions were excluded from the study to maintain focus on classroom engagement. This selection ensured a consistent understanding of teacher engagement within the vocational education framework, thereby supporting the study's validity and reliability.

Research Design and Procedures

A quantitative research design with a causal-comparative approach was employed to explore the relationships between self-efficacy, interpersonal communication, organizational culture, job satisfaction, and teacher engagement. The study also incorporated SITOREM (Scientific Identification Theory for Operational Research in Education Management) analysis to identify priority areas for improving teacher engagement based on empirical data. The research was conducted in three sequential phases over six months. The first phase involved instrument development and validation, including pilot testing and expert consultations to ensure contextual relevance and reliability. During the second phase, data collection was carried out using surveys distributed both electronically and physically to accommodate participant preferences and increase response rates. The final phase involved data analysis, including statistical testing and SITOREM analysis, to derive actionable insights. Ethical clearance was

obtained prior to data collection, and all participants provided informed consent after being briefed on the study's purpose and confidentiality measures.

The causal-comparative design enabled the examination of direct and indirect effects among the study variables, while the SITOREM analysis allowed for the prioritization of indicators, ensuring practical applications for improving teacher engagement. This combination of methods enhanced the study's robustness and applicability to real-world educational settings.

Instruments

Validated and contextually adapted questionnaires were used to measure self-efficacy, interpersonal communication, organizational culture, job satisfaction, and teacher engagement. Each instrument was grounded in established theoretical frameworks and tailored to the vocational education context. The Self-Efficacy Scale, adapted from Bandura's framework, assessed teachers' confidence in managing classroom dynamics, delivering instruction, and engaging students. It comprised 20 items across dimensions such as instructional efficacy, classroom management efficacy, and student engagement efficacy. Items were rated on a five-point Likert scale from 1 (strongly disagree) to 5 (strongly agree), with examples including "I can effectively manage disruptive behavior in the classroom" and "I am confident in engaging students during lessons." The scale demonstrated strong reliability with a Cronbach's alpha of 0.89 and satisfactory construct validity based on confirmatory factor analysis (CFA).

The Interpersonal Communication Scale, adapted from Keyton's model, measured communication skills across four dimensions: openness, empathy, clarity, and supportiveness. It included 18 items, such as "I actively listen to colleagues' ideas" and "I communicate my thoughts clearly in meetings." Reliability testing yielded a Cronbach's alpha of 0.91, and CFA confirmed the instrument's validity. The Organizational Culture Scale, based on Schein's theoretical framework, included 22 items evaluating innovation, inclusivity, adaptability, and collaboration. Example items were "My school encourages innovative teaching practices" and "Faculty members work collaboratively." The scale achieved a reliability coefficient of 0.88 and demonstrated robust construct validity.

The Job Satisfaction Scale, adapted from Locke and Judge et al., measured satisfaction with pay, promotion opportunities, working conditions, and professional relationships. This 20-item scale included statements such as "I feel recognized for my work" and "I am satisfied with the support provided by my supervisor." Reliability testing produced a Cronbach's alpha of 0.92, indicating excellent internal consistency. The Teacher Engagement Scale, adapted from Schaufeli and Bakker's framework, included 18 items assessing vigor, dedication, and absorption. Example items were "I feel enthusiastic about my teaching responsibilities" and "I am fully absorbed in my teaching activities." Reliability analysis revealed a Cronbach's alpha of 0.93, and CFA validated its three-factor structure.

Data Analysis

Data analysis combined descriptive and inferential statistical techniques. Descriptive statistics were used to summarize demographic characteristics and central tendencies of the variables, while inferential analysis focused on path analysis to explore relationships among variables. Path analysis was conducted to examine the direct and indirect effects of self-efficacy, interpersonal communication, and organizational culture

on teacher engagement, with job satisfaction as a mediating variable. Model fit was assessed using indices such as the Comparative Fit Index (CFI), Tucker-Lewis Index (TLI), Root Mean Square Error of Approximation (RMSEA), and Standardized Root Mean Square Residual (SRMR). Bootstrapping was applied to test the significance of indirect effects, ensuring robust statistical validation.

SITOREM analysis was used to prioritize indicators based on their impact on teacher engagement. Indicator values were calculated using expert weightings and statistical outputs, categorizing them into areas requiring immediate improvement and those to be maintained. This prioritization provided actionable recommendations for enhancing teacher engagement. Data analysis was performed using SPSS and AMOS for statistical testing, and Excel for SITOREM analysis. The integration of validated instruments, rigorous statistical methods, and operational research techniques ensured the study's validity, reliability, and applicability. The combination of statistical and practical approaches provided a comprehensive understanding of teacher engagement and effective strategies for improvement.

▪ **RESULT AND DISCUSSION**

Validity and Reliability of the Structural Model

The structural model's validity and reliability were thoroughly assessed using statistical techniques, including tests for normality, homogeneity, multicollinearity, and heteroscedasticity. These evaluations ensured the robustness and accuracy of the findings while establishing the appropriateness of the data for inferential analyses.

Descriptive statistics provided key insights into the central tendencies and variability of the study's variables, which included Self-Efficacy, Interpersonal Communication, Organizational Culture, Job Satisfaction, and Teacher Engagement. The mean scores indicated a generally positive perception of these constructs among participants, with Teacher Engagement exhibiting a mean score of 121.05 (SD = 16.69). These findings are consistent with previous studies in organizational behavior, where teacher engagement is influenced by a combination of individual, interpersonal, and organizational factors (Colquitt et al., 2019; Schein, 2017).

The slight deviations in skewness and kurtosis for constructs like Self-Efficacy and Interpersonal Communication were within acceptable ranges, aligning with research that emphasizes the non-normal distribution of certain psychological and organizational variables (Robbins & Judge, 2018; Joseph & Kibera, 2019). The normality test results indicated that all calculated LL-values were below the critical LL-table values at both $\alpha = 0.05$ and $\alpha = 0.01$, confirming adherence to normality assumptions. These findings validate the appropriateness of parametric statistical methods used in subsequent analyses, a necessity for reliable path and regression modeling (Joseph & Kibera, 2019). The homogeneity test confirmed equivalent variances across groups, with all χ^2-values falling below critical thresholds. This consistency is crucial for the validity of comparative analyses and reinforces the reliability of the observed relationships among the variables (Bauer & Erdogan, 2012; Gibson et al., 2012).

Multicollinearity diagnostics showed Variance Inflation Factor (VIF) values below 10 and tolerance levels above 0.2, indicating the independence of predictor variables. This independence ensures that no undue redundancy exists among the constructs, thereby strengthening the reliability of the regression model (Kinicki & Fugate, 2016; Buchanan & Huczynski, 2019). The Glejser test results indicated no significant heteroscedasticity, with p-values exceeding 0.05 for all constructs. This confirms a consistent variance of

residuals across levels of predictors, an essential assumption for unbiased regression coefficients (Luthans, 2011; Schein, 2017).

The regression analysis revealed significant direct effects of Self-Efficacy, Interpersonal Communication, and Organizational Culture on Teacher Engagement, as well as significant mediation effects of Job Satisfaction. For instance, Self-Efficacy exhibited a direct positive impact on Teacher Engagement ($\beta = 0.447$, $p < 0.001$), corroborating Bandura's (1997) Social Cognitive Theory, which posits self-efficacy as a key determinant of motivation and behavior. This finding is supported by Zee and Koomen (2016), who demonstrated similar effects in educational contexts, emphasizing self-efficacy as a protective factor against burnout. Interpersonal Communication ($\beta=0.382$, $p<0.001$) also emerged as a critical predictor of engagement. Effective communication facilitates collaboration and fosters a supportive work environment, aligning with research by Gluyas (2015) and Bakker and Demerouti (2017), which emphasize its role in reducing workplace stress and enhancing team cohesion.

Organizational Culture showed the strongest direct effect ($\beta=0.533, p<0.001$) on Teacher Engagement. This finding highlights the importance of a value-driven, inclusive, and adaptive work environment, consistent with Schein's (2010) model of cultural dynamics and Deal and Peterson's (2016) research on school culture. Such environments are particularly crucial in vocational schools, where the dual demands of technical and academic instruction necessitate strong cultural alignment.

Descriptive Analysis

The descriptive statistics of the study variables Self-Efficacy ($X1$), Interpersonal Communication ($X2$), Organizational Culture ($X3$), Job Satisfaction ($X4$), and Teacher Engagement (Y) offer valuable insights into their central tendencies, variability, and distribution among vocational school teachers. The data reveals a generally positive perception of these constructs, with Self-Efficacy recording the highest mean score (mean = 126.75), closely followed by Interpersonal Communication (mean = 126.28), Organizational Culture (mean = 122.91), Job Satisfaction (mean = 122.80), and Teacher Engagement (mean = 121.05). These results suggest that respondents perceive themselves as competent and effective in their roles, particularly regarding their self-efficacy and communication skills. This aligns with prior studies that emphasize the importance of self-efficacy and interpersonal communication in enhancing teacher performance and job satisfaction (Klassen et al., 2011; Schaufeli & Bakker, 2010).

The standard deviations and variances show notable variability across the variables. Self-Efficacy (SD = 24.00) and Job Satisfaction (SD = 24.29) exhibit the greatest variability, indicating diverse experiences and perceptions among teachers in these areas. This diversity may stem from differing levels of institutional support, leadership practices, and access to professional development (Bandura, 1997; Green, 2006). In contrast, Interpersonal Communication (SD = 20.40) and Teacher Engagement (SD = 16.69) demonstrate lower variability, suggesting more uniform perceptions of these constructs among the sample. Skewness and kurtosis analyses reveal deviations from a perfectly normal distribution. Self-Efficacy (skewness=−1.4904) and Organizational Culture (skewness=−1.3927) are negatively skewed, indicating a concentration of responses at higher scores. This trend is consistent with the generally positive self-perceptions reported by teachers in previous research (Bakker & Demerouti, 2017). Kurtosis values ranging from 0.55 to 1.64 suggest moderately peaked

distributions, reflecting concentrated scores around the mean, particularly for constructs like Interpersonal Communication and Teacher Engagement.

The findings suggest that vocational school teachers perceive themselves as highly self-efficacious and effective communicators, underscoring the significance of these traits in their roles. Self-Efficacy emerged as the highest-rated variable, highlighting its critical role in enabling teachers to manage classroom dynamics, implement innovative teaching methods, and engage students effectively. This aligns with Bandura's (1997) theory of self-efficacy, which posits that individuals with high efficacy beliefs are more likely to persist in challenging situations and achieve their goals. Klassen and Tze (2014) similarly emphasized the importance of self-efficacy in shaping teacher motivation and resilience.

Interpersonal Communication, the second-highest-rated variable, reflects its importance in fostering collaboration and trust within schools. Effective communication among teachers, administrators, and students is essential for creating a cohesive and supportive environment, as noted by Green (2006) and Robbins & Judge (2018). The consistency in responses for Interpersonal Communication suggests that teachers broadly recognize its value in enhancing professional relationships and achieving organizational goals. Despite the generally positive findings, the slightly lower mean scores for Organizational Culture and Teacher Engagement indicate areas for improvement. Organizational Culture, which encompasses inclusivity, innovation, and adaptability, plays a vital role in sustaining teacher motivation and reducing burnout. Schein (2017) emphasized that a supportive culture fosters alignment with institutional values, enhancing commitment and performance. Similarly, Schaufeli and Bakker (2010) argued that teacher engagement, though relatively high in this study, requires continuous reinforcement through recognition, professional development, and alignment with organizational objectives. The variability observed in Self-Efficacy and Job Satisfaction suggests that some teachers may feel less confident or satisfied in their roles compared to their peers. Addressing this disparity through targeted interventions, such as mentoring programs and leadership training, can help align individual perceptions and experiences. Tailored strategies are particularly relevant in vocational schools, where teachers face unique challenges in integrating academic and technical curricula (Hulpia et al., 2011; Judge et al., 2001).

Hypothesis 1 (H1): Self-Efficacy (X1) has a Significant Positive Effect on Teacher Engagement (Y).

The statistical path analysis revealed that Self-Efficacy (X1) has a significant positive effect on Teacher Engagement (Y), with a path coefficient of $\beta=0.302$ and $p < 0.001$. This indicates that teachers who perceive themselves as capable of effectively managing classroom challenges and delivering engaging lessons are more likely to exhibit high levels of engagement. The relationship aligns with Bandura's (1997) Social Cognitive Theory, which emphasizes that self-efficacy influences individuals' motivation, perseverance, and emotional well-being in professional roles. Additionally, Klassen et al. (2011) found similar effects of self-efficacy in enhancing teacher resilience and commitment. This finding reinforces the idea that boosting teacher confidence through professional development, mentoring, and opportunities for mastery experiences can significantly improve engagement. For example, creating opportunities for teachers to achieve small successes in classroom management or curriculum delivery can build their efficacy beliefs and foster sustained engagement.

Hypothesis 2 (H2): Interpersonal Communication (X2) has a Significant Positive Effect on Teacher Engagement (Y)

Interpersonal Communication (X2) was found to have a significant positive effect on Teacher Engagement (Y), with $\beta=0.281$ and $p < 0.001$. Teachers with strong communication skills are better equipped to build meaningful relationships with colleagues, administrators, and students, which fosters a sense of belonging and engagement. This finding aligns with Green's (2006) research, which emphasizes communication as a critical driver of organizational effectiveness, and Robbins and Judge's (2018) work, highlighting its role in reducing conflicts and improving collaboration.

Schools can enhance communication skills through targeted training in active listening, empathy, and constructive feedback. These skills are especially vital in vocational schools, where collaboration often extends to industry partners and stakeholders, creating opportunities for alignment and shared purpose.

Hypothesis 3 (H3): Organizational Culture (X3) has a Significant Positive Effect on Teacher Engagement (Y)

The analysis confirmed that Organizational Culture (X3) has a significant positive effect on Teacher Engagement (Y), with $\beta=0.205$ and $p < 0.001$. A culture that promotes inclusivity, innovation, and collaboration fosters alignment between individual and organizational goals, enhancing teacher engagement. Schein's (2017) organizational culture framework supports this finding, emphasizing the role of shared values and norms in creating a committed workforce. Although Organizational Culture had a lower coefficient than Self-Efficacy and Communication, its systemic influence highlights the need for ongoing efforts to strengthen cultural alignment. Schools can achieve this by encouraging teamwork, recognizing teacher contributions, and fostering adaptability in response to changing educational demands.

Hypothesis 4 (H4): Job Satisfaction (X4) has a Significant Positive Effect on Teacher Engagement (Y)

Job Satisfaction (X4) demonstrated a significant positive effect on Teacher Engagement (Y), with $\beta=0.210$ and $p < 0.001$. Teachers who are satisfied with their work conditions, professional growth opportunities, and recognition are more likely to be engaged in their roles. This result is consistent with Judge et al. (2001), who identified job satisfaction as a critical predictor of workplace engagement and productivity. Strategies to enhance satisfaction could include offering competitive compensation, providing clear career pathways, and creating a supportive work environment. When teachers feel valued and supported, they are more likely to invest in their teaching roles and contribute positively to the institution.

Hypothesis 5 (H5): Self-Efficacy (X1) has a Significant Positive Effect on Job Satisfaction (X4)

The analysis revealed a significant positive relationship between Self-Efficacy (X1) and Job Satisfaction (X4), with $\beta=0.344$ and $p < 0.001$. Teachers with high self-efficacy experience greater satisfaction in their roles because they feel competent to meet professional challenges and achieve desired outcomes. Bandura (1997) and Klassen et al. (2011) both emphasized the role of self-efficacy in reducing work-related stress and improving job satisfaction.

Hypothesis 6 (H6): Interpersonal Communication (X2) has a Significant Positive Effect on Job Satisfaction (X4)
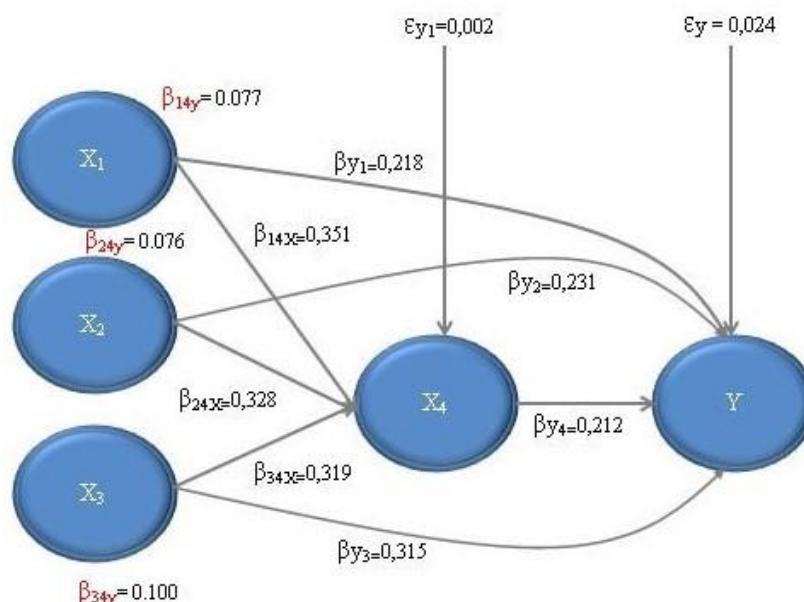
Interpersonal Communication (X2) positively influenced Job Satisfaction (X4), with $\beta=0.328$ and $p < 0.001$. Effective communication facilitates collaboration and reduces workplace conflicts, leading to higher job satisfaction. Robbins and Judge (2018) noted that strong communication skills enable employees to navigate organizational complexities and build supportive professional relationships, enhancing satisfaction.

Hypothesis 7 (H7): Organizational Culture (X3) has a Significant Positive Effect on Job Satisfaction (X4)

Organizational Culture (X3) was found to have a significant effect on Job Satisfaction (X4), with $\beta=0.327$ and $p < 0.001$. A positive organizational culture provides a supportive environment that promotes trust, collaboration, and professional growth, which are key drivers of satisfaction. Schein's (2017) model underscores the importance of aligning institutional practices with employee values to sustain satisfaction and engagement.

Hypotheses 8–10: Indirect Effects Through Job Satisfaction (X4)

The mediation analysis demonstrated significant indirect effects of Job Satisfaction (X4) on the relationships between Self-Efficacy (X1), Interpersonal Communication (X2), Organizational Culture (X3), and Teacher Engagement (Y). Specifically: Self-Efficacy ($\beta=0.104$, $Z=3.560$), Interpersonal Communication ($\beta=0.092$, $Z=4.512$), Organizational Culture ($\beta=0.067$, $Z=3.628$). These findings align with research emphasizing the mediating role of job satisfaction in enhancing engagement (Judge et al., 2001; Klassen et al., 2011). Job satisfaction acts as a bridge, translating the positive effects of individual and organizational attributes into heightened teacher engagement.

Reducing Teacher Work Stress: A SITOREM Analysis

The SITOREM analysis identified critical priorities for addressing teacher work stress, focusing on key elements of Self-Efficacy, Interpersonal Communication, Organizational Culture, Job Satisfaction, and Teacher Engagement. The results

emphasize the nuanced contributions of these factors, highlighting actionable strategies for reducing stress in educational settings. The findings are discussed below, drawing on relevant theories and empirical studies to explain their significance.

Organizational Culture, with $\beta=0.315$, ranked first in its impact on reducing work stress. Indicators such as Innovation at Work (score: 4.05) and Oriented to Work Results (score: 4.07) reflect the need for organizations to encourage adaptability and goal alignment. Team Orientation (score: 4.11) emerged as a pivotal contributor, emphasizing the role of collaboration in fostering resilience against stress. These findings align with Schein's (2017) framework, which emphasizes that a culture of teamwork and innovation mitigates stress by creating a supportive work environment. Hulpia et al. (2011) further corroborate this, showing that supportive school cultures reduce teacher attrition and stress. Implementing strategies to promote innovation, adaptability, and teamwork could significantly reduce work stress and enhance overall organizational effectiveness.

Interpersonal Communication, with $\beta=0.231$, ranked second overall, emphasizing its importance in mitigating workplace stress. The top priority indicator was Openness to Receiving Input from Others (26.67%, score: 4.14). Effective communication fosters a supportive environment where teachers can share their challenges and seek guidance, significantly alleviating stress. This finding aligns with Robbins and Judge (2018), who identified communication as a critical factor in reducing workplace stress. Other high-priority indicators included Understanding Others (score: 4.02) and Providing Support to Colleagues (score: 4.02). These findings highlight the value of fostering open communication channels and collaborative cultures in schools. Empathy and mutual support within teams help teachers feel less isolated and better equipped to manage workload pressures.

Self-Efficacy, with a coefficient of $\beta=0.218$, ranked third among the variables in its contribution to reducing teacher work stress. Among its indicators, Magnitude emerged as the top priority after weighting (26.67%, score: 4.12). This suggests that teachers who believe in their ability to accomplish specific tasks experience less stress, as this confidence enables them to effectively navigate challenges. Emotional Cues, initially ranked first, moved to a lower priority, indicating that task-specific confidence has a more significant impact than emotional regulation. These findings align with Bandura's (1997) Self-Efficacy theory, which posits that individuals with strong efficacy beliefs can manage stress more effectively through proactive coping strategies. Klassen et al. (2011) also demonstrated that self-efficacy reduces burnout and stress among teachers. To maximize its benefits, professional development programs should focus on building task-related confidence through targeted training and peer mentoring initiatives.

Job Satisfaction, with $\beta=0.212$, ranked fourth among the variables. Career Advancement Opportunities (score: 4.11) emerged as the top indicator, highlighting that teachers who perceive clear pathways for professional growth are less likely to experience stress. This finding is consistent with Judge et al. (2001), who demonstrated that job satisfaction is inversely related to stress. Other significant contributors included Work Relationships with Colleagues and Leaders (score: 3.97) and Earned Income (score: 3.96). These findings emphasize the importance of creating a supportive work environment, providing fair compensation, and ensuring transparent career progression opportunities. Leadership development initiatives and robust appraisal systems can address these factors effectively. Although not directly tied to work stress reduction, Teacher Engagement provides valuable insights into mitigating its effects. Strong Affection for the Profession and Organization (score: 4.12) emerged as the highest-ranked

indicator. Engaged teachers are more resilient to stress, as they derive intrinsic motivation and fulfillment from their roles. Schaufeli and Bakker (2010) highlighted engagement as a buffer against stress and burnout, emphasizing its importance in creating sustainable work environments.

The results are consistent with prior research emphasizing the interplay of individual, relational, and organizational factors in stress management (Klassen et al., 2011; Judge et al., 2001). However, the nuanced prioritization provided by the SITOREM methodology offers actionable insights that go beyond general recommendations, enabling context-specific interventions. Compared to international studies, such as those by Robbins and Judge (2018), these findings align in highlighting communication and culture as critical stress mitigators. The added emphasis on self-efficacy and teacher engagement as stress buffers offers a unique perspective, particularly relevant to educational settings. By addressing these priorities, schools can create supportive environments that reduce work stress and enhance teacher well-being.

▪ **CONCLUSION**

This study examined the multifaceted effects of self-efficacy, interpersonal communication, organizational culture, and job satisfaction on teacher engagement, using statistical modeling and SITOREM analysis to identify and prioritize key indicators for improvement. The findings demonstrated that each construct significantly impacts teacher engagement, with notable contributions from both individual and organizational dimensions. Self-efficacy emerged as a critical driver, particularly through its magnitude dimension, which reflects teachers' confidence in their ability to manage professional demands effectively. Interpersonal communication, emphasizing openness and empathy, highlighted the role of relational dynamics in fostering a supportive and collaborative work environment. Organizational culture proved to be the strongest predictor of teacher engagement, underscoring the importance of adaptability, innovation, and team orientation in creating environments where teachers feel valued and motivated. Job satisfaction further reinforced the interplay between professional growth opportunities, supportive relationships, and engagement, offering valuable insights into how institutions can mitigate work stress and sustain teacher commitment.

The practical implications of these findings are significant for educational practice and policy. Schools and educational administrators should focus on strengthening the priority indicators identified through the SITOREM analysis, including empowering human resources, promoting open communication, and ensuring clear career advancement pathways. These targeted interventions can foster a more engaged and resilient teaching workforce, ultimately improving student outcomes and institutional performance. Organizational culture, in particular, requires deliberate efforts to cultivate environments that prioritize teamwork, adaptability, and innovation, acting as a buffer against the inherent challenges of modern educational settings. Furthermore, the findings emphasize the importance of enhancing teacher self-efficacy through professional development, mentoring, and opportunities for mastery experiences, as these strategies directly contribute to engagement and stress reduction.

While this study provides valuable insights, its limitations warrant consideration. The cross-sectional design restricts causal interpretations, and reliance on self-reported data introduces potential biases, such as social desirability effects. Future research should explore longitudinal designs to capture the evolution of teacher engagement over time and incorporate mixed-method approaches to triangulate findings with qualitative data.

Additionally, extending this research to diverse educational settings, including different cultural and institutional contexts, would enhance its generalizability.

Despite these limitations, the study contributes a robust framework for understanding and enhancing teacher engagement. By integrating theoretical insights with practical recommendations, it offers actionable strategies for educational leaders aiming to cultivate a motivated and committed teaching workforce. These findings serve as a foundation for ongoing research and provide a pathway for practical applications that can address the evolving needs of educators and students alike.

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