

Transformational School Leadership, Psychological Empowerment, Organizational Climate, and Work Engagement: A Structural Equation Model on Organizational Innovation among Public School Teachers

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ABSTRACT

This study established the best-fitting model of organizational innovation as influenced by transformational school leadership, psychological empowerment, organizational climate, and work engagement using Structural Equation Modelling (SEM). The results showed that the best-fit model was Structural Equation Model 3, which demonstrated good fit indices. This affirms the strong influence of transformational school leadership, psychological empowerment, organizational climate, and work engagement. Thus, the retained indicators now define the variables. Majority of the variables retained their indicators, with exemption to psychological empowerment, which retained only two indicators: meaning and impact. The study contributes a validated structural model that informs leadership development, organizational capacity building, and evidence-based policymaking aimed at fostering innovation in public elementary schools.

INTRODUCTION

The issue on the academe's organizational innovation became particularly apparent during the pandemic when quite a number of teachers failed to innovate to cope with the urgent and unprecedented shift to distance learning (Hess, 2020; Nelz, 2020; Tate, 2020). Further, despite the teachers' efforts to innovate, they frequently encounter impediments while trying to contribute to organization innovation due to common issues such as, but not limited to the existing organizational culture, resource limitations, and leadership (Kaya, 2021). Though the study in Mindanao, the outcome of the teachers' level of teaching performance is high (Picaza, et al, 2022) but concurrently, Birasnav et al. (2023) revealed in their findings that when teachers cease to innovate, they become stagnant in their instructional practices, leading to the failure of the academe to achieve its targets. Similarly, low organizational innovation among teachers prevents the productive transformation of both schools and communities (Sodergren et al., 2023).

Concurrently, organization innovation among teachers is seen to be one of the most important aspects to ensure success among schools, yet teachers have not received adequate and ample support from school principals to enhance this skill (Turker, 2021). Given the increasingly turbulent environments, heightened competition, and unpredictable technological change, more and more school leaders are coming to realize that organizations should encourage their teachers to foster organizational innovation (Shalley & Gilson, 2004). Louis (2006) suggested that the capacity for innovation and reform in a school depended on its ability to collectively process, understand, and apply knowledge about teaching and learning. Organizational innovations in education can significantly improve learning outcomes and the quality of education provision; innovations could also help enhance equity in the access to and use of education, as well as equality in learning outcomes (OECD, 2016).

In the report of McMillan (2021), organizational innovation in education can lead to better overall outcomes in the school environment. Innovative classrooms are filled with students who are developing stronger communication skills and building engagement capacity amongst their peers; personalized learning and differentiated opportunities for students due to innovative practices in the school are key components in preparing students for a global, competitive workforce in the 21st century (McMillan, 2021).

Evidently, transformational leadership drives organizational innovation among the teachers (Asbari et al, 2020). Recent findings showed that transformational leadership has a significant influence on the promotion of organizational innovation, particularly in the context of the academe (Kılınç et al., 2024). In support, Al-Husseini et al. (2021) presented in their findings that there is a positive and direct influence of transformational leadership and innovation as evident in the teachers' adaption of instructional strategies appropriate for the current learning conditions.

Transformational leadership is particularly important in public schools, where school heads often face systemic challenges such as resource limitations and diverse student needs. When school heads adopt transformational leadership practices, they foster collaboration and empower teachers (Ampler &

Guhao, 2024). Evidence from recent studies shows that such leadership motivates staff to engage in innovative instructional practices, enhancing both teaching quality and student outcomes (Wilson Heenan et al., 2023). Moreover, by promoting a shared vision and offering individualized support, transformational leaders in public school build sustainable systems that encourage teacher empowerment and long-term growth (Deliarte-Ramos, 2025).

Equally important is the role of empowerment leadership to organizational innovation among the teachers. Yao et al. (2020) argued that the essence of psychological empowerment is found in the distribution of power by leaders and the cognitive perception empowerment. Empowerment involves the sharing of authority which necessitates effective communication between leaders and members. The findings of Celik and Atik (2020) revealed that psychological empowerment significantly predict the teachers' organizational innovation as evident in their demonstration of readiness to adapt instructional changes.

A further vital aspect of empowerment leadership is that it promotes participatory decision-making and encourages teachers to take initiatives that contribute to organizational improvement. Recent studies highlight that empowerment strategies strengthen professional commitment and resilience among teachers, enabling them to respond effectively to systemic challenges and resource constraints (Lagman, 2024). Evidence also shows that when principals embed empowerment practices into daily school management, collaboration among staff is enhanced, leading to more innovative instructional approaches and improved school performance (Mendoza, 2024). Furthermore, professional development initiatives guided by empowerment leadership have been found to systematically increase teachers' capacity for innovation and classroom excellence, reinforcing the long-term sustainability of educational reforms (Herrero & Despi, 2023).

THEORETICAL REVIEW

Organizational climate measures the social environment of the school (Erturk & Ziblim, 2020). Undeniably, organizational climate influences the organizational innovation of teachers. Khun-inkeeree et al. (2021) revealed in their findings that the establishment of positive organizational climate led to the teachers' desire for innovation. Similarly, Newman et al. (2020) showed that organizational climate promotes organizational innovation in schools without conflicting cultures. Moreover, Vos and Page (2020) concluded that organizational climate significantly influences teachers' organizational innovation as evident in their ability to develop innovative instructional practices and take risks in implementing them.

In essence, a supportive organizational climate helps sustain innovation within public schools, as it shapes the attitudes and behaviors of teachers toward change. Recent studies emphasize that when school leaders cultivate trust, collegiality, and open communication, teachers are more likely to engage in collaborative practices that foster creativity and innovation (Ampler & Guhao, 2024). Evidence further suggests that positive organizational climates enhance teachers' professional commitment, enabling them to adapt instructional

strategies and integrate new approaches that respond to evolving educational demands (Wilson Heenan et al., 2023). In addition, empowerment within a constructive climate has been linked to greater resilience among educators, allowing them to take risks and pursue innovative solutions that strengthen overall school performance (Herrero & Despi, 2023).

Another critical aspect is the concept that teachers' work engagement and organizational innovation are correlated (Hosseini & Haghighi Shirazi, 2020). This is supported in the finding that showed positive and significant relationship of work engagement and teachers' innovativeness (Koroglu, & Ozmen, 2022). With this finding, school leaders are encouraged to provide sufficient resources for the teachers to be naturally engaged in their work and eventually, their innovativeness would come in.

Further, recent scholarship further emphasizes that work engagement serves as a critical driver of innovation in educational settings. When teachers experience high levels of vigor, dedication, and absorption in their work, they are more likely to generate creative instructional practices and contribute to organizational improvement (Bakker et al., 2023). Evidence also indicates that engaged educators demonstrate greater resilience and adaptability, enabling them to respond effectively to evolving classroom demands and institutional challenges (Schaufeli, 2021). In this regard, fostering work engagement through supportive leadership and adequate resources has been shown to enhance teachers' innovative behaviors and strengthen the overall capacity of schools to sustain educational reforms (Kim & Park, 2024).

This study is anchored on Innovation Diffusion Theory (IDT) originally introduced by its proponent Roger (2003), where the definition of innovation refers to the utilization of ideas in solving problems, developing processes, and improving the way we do things in creating new products, services and organizations. The theory is an appropriate anchor for this study because it explains how transformational leadership, empowerment strategies, and engagement mechanisms are adopted and sustained within social systems like schools.

In support of the anchor theory, this study draws on Bridges' (2003) Transition Theory, which explains how individuals psychologically navigate change. This framework highlights the emotional and cognitive adjustments required when adopting innovations, making psychological empowerment and work engagement essential to sustaining change.

Additionally, Organization Theory by Jones (1995) provides a structural lens for understanding how institutional systems influence innovation outcomes. It emphasizes the role of leadership, communication, and control strategies in shaping organizational behavior. Together, these theories affirm that innovation is both a personal journey and a systemic process, validating the multidimensional pathways modeled in this study.

Recent studies affirm the relevance of the theories in modeling organizational innovation. Das (2020) found that innovation adoption improves when leadership promotes clarity, trust, and shared vision which are the core traits of transformational school leadership. Kurt (2023) further highlighted that

the perceived attributes of innovation are shaped by organizational climate and leadership practices, reinforcing the theory's multidimensional influence on institutional behavior. Similarly, Pandey et al. (2022) proposed a dynamic framework for innovation diffusion in educational institutions, emphasizing the role of collaborative environments and systemic support. Further, Shukla and Siddiqui (2023) found that innovation uptake in schools was significantly influenced by leadership communication and staff empowerment.

Empirical literature consistently underscores the role of psychological empowerment and work engagement as critical enablers of innovation. For instance, Nguyen et al. (2021) found that employees who experience meaning and impact in their roles are more likely to adopt and sustain innovative practices. Similarly, Ergun et al. (2023) demonstrated that psychological empowerment and work engagement significantly predict innovative work behavior, especially when reinforced by organizational support. Moreover, Dogan and Aykan (2025) confirmed that psychological empowerment mediates the relationship between leadership and innovation, suggesting its centrality in shaping institutional change.

Building on these, Pandey et al. (2022) advanced a dynamic innovation diffusion framework that links technological and human factors, emphasizing that institutional capacity-building and collaboration accelerate adoption. Extending this perspective, Alka'awneh et al. (2025) applied IDT in conjunction with the Technology–Organization–Environment (TOE) framework, demonstrating that organizational culture and leadership communication are critical drivers of educational innovation.

This study focused on organizational innovation as the endogenous variable influenced by four exogenous variables: transformational school leadership, psychological empowerment, organizational climate, and work engagement. Transformational school leadership, based on Liu (2013), is measured through four indicators: *setting direction, developing people, redesigning organization, and managing the instructional program*. Psychological empowerment, drawn from Spreitzer (as cited in Chan, 2003), includes *meaning, competence, self-determination, and impact*. Organizational climate, as presented by Hoy, Smith, and Sweetland (2002), is described through *institutional vulnerability, collegial leadership, professional teacher behavior, and achievement press*. Work engagement, based on Dyson (2021), is assessed through *vigor, dedication, and absorption*. The endogenous variable, organizational innovation, follows Jaffer (2013) and includes *leadership, ownership, norms for diversity, continuous development, and consistency*.

Recent studies on organizational innovation in schools have primarily focused on isolated predictors without integrating them into a unified structural model. For instance, Ampler and Guhao (2024) examined the influence of transformational leadership, teamwork skills, and teacher empowerment on organizational commitment, but did not extend the analysis to innovation outcomes. Heenan et al. (2023) conducted a systematic review of transformational school leadership and its impact on staff and school culture, yet

the review did not examine how leadership interacts with psychological or organizational factors to drive innovation.

Similarly, Pascale et al. (2024) investigated the role of transformational leadership in promoting organizational resilience, emphasizing collective teacher efficacy but not work engagement or innovation behavior. These studies affirm the relevance of leadership and empowerment constructs but reveal a gap in modeling their combined influence alongside organizational climate and work engagement. There remains limited empirical evidence on how these variables interact to shape innovation within basic education institutions.

Given the increasing demand for innovation-driven school systems, there is an urgent need to empirically validate a multidimensional model that captures both individual and institutional enablers of innovation. This study responds to that need by testing a best-fit structural model that integrates transformational school leadership, psychological empowerment, organizational climate, and work engagement as predictors of organizational innovation.

This study endeavored to determine the best fit model of organization innovation among the public school teachers. Specifically, it intended to ascertain the level of the variables transformational school leadership, psychological empowerment, organizational climate, work engagement, and organizational innovation. It also examined the significance of the relationships between transformational school leadership and organizational innovation, psychological empowerment and organizational innovation, organizational climate and organizational innovation, and work engagement and organizational innovation. Finally, the study explored the structural relationships among these variables using structural equation modeling to determine the best-fit model for organizational innovation among public school teachers. In line with these objectives, the study hypothesized that transformational school leadership, psychological empowerment, organizational climate, and work engagement each have a significant influence on organizational innovation. It was further hypothesized that a structural model integrating these four exogenous variables would provide a statistically valid and best-fitting framework for predicting organizational innovation in public school settings.

Simultaneously, the null hypothesis listed below were examined at a significant threshold of 0.05. First, there were no significant correlation between transformational school leadership and organizational innovation, psychological empowerment and organizational innovation, organizational climate and organizational innovation, and work engagement and organizational innovation. Consequently, no model best fits the organizational innovation among public school teachers.

Holistically, the study's results may benefit society in general, considering personal effectiveness plays an essential role in developing the skills and attitude of public-school teachers towards organizational innovation. On a global scale, the study supports Sustainable Development Goal 4 (SDG 4): Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all. SDG 4 emphasizes the transformative power of education and its role in fostering sustainable development. Further, this study will give benefits to some

entities. The study's findings may help the Department of Education (DepEd) officials identify factors that significantly contribute to the development of teachers' organizational innovativeness to achieve more outstanding teaching outcomes. On the other hand, school heads can also benefit from having an overall lookout at the teachers to help them guide and administer educators in enhancing their teaching skills. Teachers, who are the primary purpose of this study, may gain from this research as it contributes to the development of themselves, students, and the academy.

Finally, future researchers can obtain relevant information to conduct follow-up studies on organizational innovation, which will serve as a model to solve other issues and problems.

METHODOLOGY

This study utilized a quantitative non-experimental design employing Structural Equation Modeling (SEM) to examine the relationships among transformational school leadership, psychological empowerment, organizational climate, work engagement, and organizational innovation among 400 public elementary school teachers in Region XI, Philippines, selected through stratified random sampling from 26,010 teachers under the Department of Education-Region XI; participants were permanent teachers with at least five years of service and voluntarily participated after securing necessary approvals and informed consent. Data were collected in February 2025 using five adapted and validated instruments with acceptable reliability (Cronbach's alpha ranging from .669 to .911) and measured through a five-point Likert scale. Statistical analyses included mean, standard deviation, Pearson correlation, linear regression, and SEM to determine the best-fitting model, while ethical standards set by the University of Mindanao Ethics Review Center (UMERC) and the Data Privacy Act of 2012 were strictly observed.

RESULTS AND DISCUSSION

Transformational School Leadership

The overall mean level of Transformational School Leadership of public elementary school teachers in Region XI with an overall mean score of 4.15, described as *high* with a standard deviation of 0.331. The indicator *setting direction* has the highest mean rating of 4.19, described as *high*; followed by *redesigning organization* with a mean score of 4.17, categorized as *high*; *managing instructional program* obtained a score of 4.17, also described as *high*; and *developing people* is reported with the lowest mean score of 4.13, still with a descriptive equivalent of *high* yet implying that this indicator warrants further strengthening.

The reported consistently high ratings in all indicators is indicative that the school heads are viewed by the teachers as actively embodying the principles of transformational leadership. The teachers perceived that the school leaders are effective in setting directions, providing vision, and guidance, ensuring clarity in the goals of the school. They develop the capacity of individuals through professional development and mentoring. Organizational structures are redesigned to support the continuous improvement of teaching and learning,

while managing instructional programs is focused on enhancing students' outcomes. This type of leadership cultivates a culture of responsive and empowered teachers. Modeling leadership behaviors that foster collaboration are vital in producing dynamic and future-responsive teachers.

Teachers perceived that school leaders are effective at setting direction-by providing vision and guidance, ensuring clarity in the school's goals. This finding aligns with Day et al. (2020), who posited that one of the measures of effective school leadership is the capacity to set direction, with enhanced teaching quality and positive learning conditions as priority outcomes. Hallinger (2021) similarly emphasized that transformational school leaders inspire teachers to commit to the realization of school goals, which is evident in the high score for this indicator.

Although Developing People received the lowest mean among the indicators, it still reflects a high level of agreement, suggesting that school heads are perceived to support teacher growth through professional development and mentoring. This supports the findings of Zivkovic (2024), who argued that transformational leaders prioritize professional growth and innovation, and Robinson et al. (2023), who emphasized the role of leadership in enhancing teacher development.

Psychological Empowerment

The summary of the level of Psychological Empowerment among public elementary school teachers. The overall mean score is 4.17, described as *high*, and a standard deviation of 0.373. The overall mean is obtained from the following indicators in descending mean scores: *meaning* recorded a mean score of 4.20, categorized as *very high*; *self-determination*, and *impact* both obtained a mean score of 4.18, described as *high*; while *competence* recorded the lowest mean of 4.13, it is still interpreted as high.

The findings are indicative that in general, Psychological Empowerment is frequently evident. The very high rating on *meaning* implies that the public school teachers feel a strong sense of purpose in their roles. This strong belief shapes their commitment to students' success. Building upon their purpose, teachers demonstrate a solid belief in their *competence* which is evident in their effective application of pedagogical skills. Further, teacher's express *self-determination* with their demonstration of autonomy in making sound judgment on which works best for their students. Finally, the strong sense of *impact* is a manifestation that their actions contribute to the institutional goals.

The very high rating on Meaning implies that teachers perceive their work as purposeful and aligned with their personal values. This sense of meaning shapes their commitment to student success and deepens their engagement with instructional tasks. Spreitzer et al. (2023) emphasized that individuals who find meaning in their work demonstrate an innate drive to perform, while Llorente-Alonso et al. (2024) found that a strong sense of meaning contributes to resilience amid organizational challenges. Ergun et al. (2025) further noted that meaningful work encourages deeper task engagement and alignment with institutional goals.

Although Competence received the lowest mean among the indicators, it still reflects a high level of confidence among teachers in their ability to perform effectively. Ryan and Deci (2020) argued that competence is a key driver of engagement and performance, and Aziz et al. (2024) affirmed that employees who feel capable are more likely to contribute positively to their organizations.

Organizational Climate

The level of organizational climate of the public elementary school teachers. Descriptive statistics revealed that the overall level of organizational climate is 4.16, described as *high* and a standard deviation of 0.299. *Collegial relationship* has the highest mean rating of 4.18, categorized as *high*; followed by *achievement press* obtained a mean score of 4.16, interpreted as *high*; *professional teacher behavior* is recorded a mean score of 4.15, depicted as *high*; whereas *institutional vulnerability* turned out to have the lowest mean of 4.14, still described as *high*.

The sustained high responses on all indicators in organizational climate reflects that teachers work in a positive climate across school settings. Teachers feel that decision-making is just which gives them a sense of security which are vital in mitigating *institutional vulnerability*. Moving forward, the strong collaboration and mutual support built on professional interactions led the teachers to experience strong *collegial relationships*. In addition, the finding reveals the consistency of the *professional teacher behavior* which points out the adherence and dedication in upholding the ethical standards expected from a public school teacher. Further, the reported strong sense of *academic press* promotes high expectations for academic performance and pursuance to excellence.

Notwithstanding its position as the lowest-rated indicator, Institutional Vulnerability was still described as high. Teachers feel protected from undue external influence, which is essential for maintaining institutional stability. Albahouth and Tahir (2025) cautioned that unchecked stakeholder involvement can undermine school autonomy, while Banwo et al. (2022) stressed the importance of balancing external pressures with internal governance to sustain a positive climate.

Work Engagement

The level of work engagement among the public school teachers. The data shows that the overall mean score is 4.16, interpreted as *high*, and a standard deviation of 0.317. Among the indicators, *vigor* emerged with the highest mean score of 4.20, categorized as *very high*. This is followed by absorption which recorded a mean score of 4.18, while *dedication* reflected a mean score of 4.10, both are interpreted as *high*.

The marked consistency in the level of work engagement suggests that this behavior is frequently evident, with employees investing their energy, commitment, and focus into their work. The *very high* level of *vigor* reflects the sustained energy and resilience of the public school teachers in fulfilling their professional functions. Along with this, the teachers' demonstration of strong sense of concentration and immersion in their task is evident. Further, the high

level of *dedication* indicates the significant level of emotional investment they have for their work. The public school teachers' generally high level of work engagement, may be attributed to their motivational drive and their perceived purpose within the organization.

Organizational Innovation

The level of organizational innovation as perceived by the public school teachers. Overall, the level of *organizational innovation* obtained a mean score of 4.16, interpreted as high, and a standard deviation of 0.326. Specifically, *norms of diversity* is rated the highest, with a mean score of 4.19, described as high. This is followed by *leadership*, and *continuous development*, both recorded a mean score of 4.16, categorized as high; *ownership* acquired a mean score of 4.15 classified as *high*; although the lowest is obtained in the indicator *consistency* with a mean score of 4.13, this is still categorized as high.

The indicator *leadership* suggests that the teachers viewed the school heads as enablers of innovation. The high level of *ownership* reflects the teachers' sense of accountability as evident in their proactive practices in sustaining innovative instructional practices. With *norms for diversity* recording very high level, it implies that the organization support inclusiveness by respecting varied viewpoints, and cultural perspectives. Reinforcing the presence of structured growth initiatives, professional learning are among the few means of achieving high level of *continuous development*. Finally, *consistency* reflects the organization's alignment and cohesion of the innovative strategies and their implementation.

Considering all of the indicators of organizational innovation, the findings reflect the demonstration of the strong and consistent innovation culture. It is in this aspect that employees actively contribute to and value organizational efforts toward creativity and improvement is frequently evident. Moreover, the findings reflect the teachers' diversity-related practices.

Relationship between Levels of Transformational School Leadership and Organizational Innovation

The significance of the relationship between transformational school leadership and organizational innovation across different dimensions. In the context of this research, the significance of the relationship was tested at 0.05 level of significance.

Each of the indicators of transformational school leadership has a positive, and significant relationship with the indicators of organizational innovation ($p < 0.05$). The strongest correlation ($r = 0.758$) is between overall transformational leadership practices and overall innovation, highlighting that transformational leadership is a key driver of fostering creativity and innovation within the organization.

The finding signifies that the level of transformational school leadership strongly influences organizational innovation, with the most substantial effects observed in setting direction, and developing people with correlation coefficients of 0.642 and 0.638, respectively. Further, this implies that by targeting specific

transformational school leadership dimensions, schools can enhance their ability to innovate and adapt to changing demands in education.

The finding can be referred in Asbari et al. (2020) with the assertion that transformational leadership fosters creativity and innovation among teachers. Building on this, Kılınç et al. (2024) found that transformational leadership substantially influences the promotion of organizational innovation, highlighting its capacity to enhance adaptability and modernization within the schools. Supporting these findings, Al-Husseini et al. (2021) demonstrated that transformational leadership positively impacts innovation through teachers' ability to adapt instructional strategies to current learning conditions.

Apparently, the finding is supported in the Diffusion of Innovation Theory (Rogers, 2003) which underscores how innovations spread within the organization. In this sense, transformational school leadership facilitates the introduction of new ideas, initiating the drive for innovation (Asbari et al., 2020).

Relationship between Levels of Psychological Empowerment and Organizational Innovation

The relationship between the levels of psychological empowerment and organizational innovation. The results show that overall, there is a strong, positive, and significance relationship between psychological empowerment and organizational innovation as evident in the correlational coefficient value of 0.632 and a p-value of 0.000. Across all indicators, there is a consistent p-value of 0.000 which signifies that the relationships are statistically significant at the 0.05 level.

The finding is indicative that the level of psychological empowerment is a significant driver of organizational innovation. It can also be implied that when the teachers feel empowered, they are more likely to demonstrate and adapt innovative practices for the organization; making them valued contributors for the sustained progress of the organization.

The finding is in cognizance with the insights of Yao et al. (2020) with the argument that empowering the members of the organization through distribution of power, and effective communication, school leaders share authority and promote cognitive perception empowerment. The sense of empowerment creates an environment where members feel capable, motivated, and ready to adapt to changes (Celik & Atik, 2020).

Relationship between Levels of Organizational Climate and Organizational Innovation

The relationship between the levels of organizational climate and organizational innovation. The overall correlation coefficient of 0.767 and a p-value of 0.00 suggest a strong, positive and significant relationship between organizational climate and organizational innovation across all indicators.

Looking at each indicator singly, it can be seen that all relationships are statistically significant as evident in the consistent p-value of 0.000. The finding indicates that a favorable organizational climate significantly enhances the overall capacity for innovation, making it a critical factor in organizational development. Across all indicators, there is a consistent p-value of 0.000 which

signifies that the relationships are statistically significant at the 0.05 level. Further, Collegial Relationships, Professional Teacher Behavior, and Achievement Press showed strong correlations with overall organizational climate, highlighting the value of interpersonal trust, professionalism, and shared goals.

The finding aligns well with Erturk and Ziblim (2020) who emphasize that organizational climate is a critical factor in shaping innovative environment of schools. Its ability to influence the creativity and innovation of teachers is undeniable. As highlighted by Khun-inkeeree et al. (2021), a positive organizational climate fosters a desire for innovation among teachers. Similarly, Newman et al. (2020) demonstrated that a positive organizational climate is conducive in the promotion of organizational innovation in schools. Vos and Page (2020) further emphasized that the organizational climate significantly influences teachers' capacity to develop innovative instructional practices and their willingness to take risks in implementing these innovations.

Relationship between Levels of Work Engagement and Organizational Innovation

The relationship between the levels of work engagement and organizational innovation. Statistical analysis shows that overall, the level of work engagement has a strong, positive, and significant relationship with the overall level of organizational innovation, as evident in the correlation coefficient of 0.689; p-value is 0.000. Among the indicators in Work Engagement, the indicators Vigor, and Absorption show the strongest relationships with the overall innovation as shown in the correlation coefficients of 0.600, and 0.593 respectively. On the other hand, Dedication shows weaker relationships with organizational innovation, particularly with indicators norms for diversity ($r = .232$) and leadership ($r = .315$).

The finding implies that teachers who are highly engaged in their work is integral in fostering the culture of innovation in the organization. Moreover, those who demonstrate high energy levels and resilience, and those who are deeply focused in their work are pivotal to organizational innovation. While the influence of the indicator Dedication remains significant, its weak influence suggest it may not directly translate into innovative practices in the organization as compared to *vigor and absorption*.

The finding is closely associated with Hosseini and Haghighi Shirazi (2020) who emphasized that teachers who are engaged in their work are more likely to exhibit innovative behaviors, directly impacting their instructional practices. This concept is further supported by Koroglu and Ozmen (2022), whose findings demonstrate a positive and significant relationship between work engagement and teachers' innovativeness. These studies suggest that providing sufficient resources and a supportive work environment can naturally enhance teachers' engagement, leading to increased innovation.

Best Fit Model on Organizational Innovations

To determine the best fit model on organizational innovations, the patterns of influence was examined using path analysis. The researcher utilized the suggested indices and criteria as bases in evaluating the goodness of fit of the models: P of close Fit (PCLOSE) of >0.05 (Joreskog & Sorbom, 1996); CMIN/DF should be $0 < \text{value} < 2$ with a $p\text{-value} > 0.05$ (Tabachnick & Fidell, 2007);), Goodness of Fit Index (GFI) should be >0.95 (Kline, 2018); Comparative Fit Index (CFI) should be >0.95 (West, Taylor & Wu, 2012 Normative Fit Index (NFI); Tucker-Lewis Index (TLI) should be >0.95 , should be >0.95 (Schumacker & Lomax, 2004), and Root Mean Square Error of Approximation (RMSEA) should be <0.05 (MacCallum, Browne, & Sugawara, 1996).

Generated Model 1 Figure 2 shows the generated structural model involving the exogenous variables transformational school leadership, psychological empowerment, organizational climate, and workplace engagement. The figure depicts that transformational school leadership to organizational innovation has a β -coefficient of -0.11 ; psychological empowerment to organizational innovation with β -coefficient of -0.15 ; organizational climate having β -coefficient of 1.14 ; and workplace engagement with β -coefficient of 0.11 .

Meanwhile, looking at the model in terms of the significant observed indicators and their latent variables, the following are the key significant observations for transformational school leadership (TSL): setting direction, with β -coefficient of 0.773 ($p < 0.001$); redesigning organization, β -coefficient of 0.718 ($p < 0.001$); and developing people, β -coefficient of 0.725 ($p < 0.001$). For psychological empowerment (PE), the indicator competence has β -coefficient of 0.586 ($p < 0.001$) indicating its significant influence of PE. For organizational climate (OC), the indicator collegial relationship (CR) with a β -coefficient of 0.722 ($p < 0.001$) suggests a strong role as on OC indicator. Workplace Engagement's (WE) vigor (VIG) shows a β -coefficient of 0.693 ($p < 0.001$) indicating a highly significant measure as indicator of WE. Finally, for organizational innovation (OI), the indicator continuous development (CD) shows its significant contribution in OI with its β -coefficient of 0.745 ($p < 0.001$).

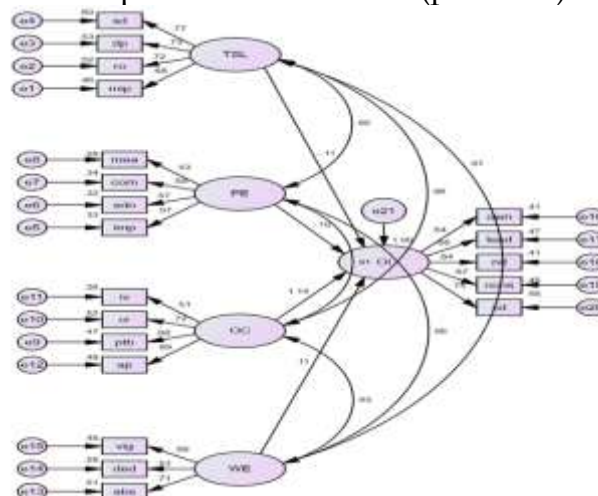




Figure 1. Structural Equation Model 1 in Standardized Solution

It can be gleaned that in terms of the following indices P-Close is 0.98; Chi-Square/Degrees of Freedom (CMIN/DF) is 1.480; Comparative Fit Index (CFI) is 0.973; Tucker-Lewis Index (TLI) is 0.968; and Root Mean Square Error of Approximation (RMSEA) is 0.037, these falls within the criterion which signifies that the model does not deviate from the ideal structure. However, in terms of the indices P-value (0.000), Goodness of Fit Index (GFI =0.936), and Normed Fit Index (NFI =0.922) the model fails to reach the baseline the criteria for the best fit model.

Generated Model 2 Figure 2 shows the generated structural model involving the exogenous variables transformational school leadership, psychological empowerment, organizational climate, and workplace engagement. The figure depicts that transformational school leadership to organizational innovation has a β -coefficient of -.10; psychological empowerment to organizational innovation with β -coefficient of -.22; organizational climate having β -coefficient of 1.10; and workplace engagement with β -coefficient of .21.

Meanwhile, looking at the model in terms of the significant observed indicators and their latent variables, the transformational school leadership (TSL) data highlights the indicator *setting direction*, with β -coefficient of 0.773 ($p < 0.001$). For psychological empowerment (PE), the indicator *meaning* has β -coefficient of 0.529 ($p < 0.001$) indicating its significant influence of PE. For organizational climate (OC), the indicator *collegial relationship* (CR) with a β -coefficient of 0.718 ($p < 0.001$) suggests a strong role as on OC indicator. Workplace Engagement's (WE) *vigor* (VIG) shows a β -coefficient of 0.695 ($p < 0.001$) which signifies its highly significant measure as indicator of WE. Finally, for organizational innovation (OI), the indicator *continuous development* (CD) shows its significant contribution in OI with its β -coefficient of 0.745 ($p < 0.001$).

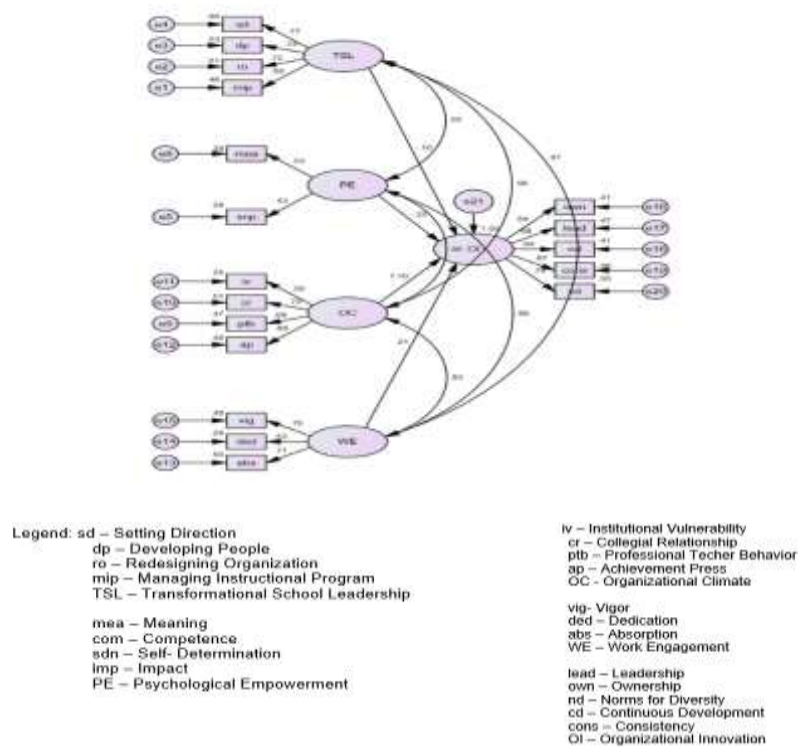


Figure 2. Structural Equation Model 2 in Standardized Solution

The following indices and computed model fit value compared with the set criteria support that the model can be considered a good fit: P-Close is 0.955; Chi-Square/Degrees of Freedom (CMIN/DF) is 1.531; Comparative Fit Index (CFI) is 0.975; Tucker-Lewis Index (TLI) is 0.969. However, there are indices whose computed model fit value fall short of the recommended threshold which implies that the model is not a perfect fit and demonstrates minimal approximation error. To wit: P-value = 0.000 (Criterion: > 0.05); Goodness of Fit Index (GFI = 0.941, Criterion: > 0.95); Normed Fit Index (NFI = 0.931, Criterion: > 0.95); and Root Mean Square Error of Approximation (RMSEA = 0.039, Criterion: < 0.05).

Generated Model 3 Figure 3 shows the generated structural model involving the exogenous variables transformational school leadership, psychological empowerment, organizational climate, and workplace engagement. The figure depicts that transformational school leadership to organizational innovation has a β -coefficient of -.48; psychological empowerment to organizational innovation with β -coefficient of .74; organizational climate having β -coefficient of 1.17; and workplace engagement with β -coefficient of -0.49.

Subsequently, looking at the model in terms of the significant observed indicators and their latent variables, the transformational school leadership (TSL) data highlights the indicator *setting direction*, with β -coefficient of 0.771 ($p < 0.001$) as a highly reliable measure, while setting direction, and redesigning organization indicate strong relationships with TSL as evident in the β -coefficient values of 0.732, and 0.713 respectively. For psychological empowerment (PE), the

indicator *meaning* has β -coefficient of 0.528 ($p < 0.001$) indicating a significant influence in PE.

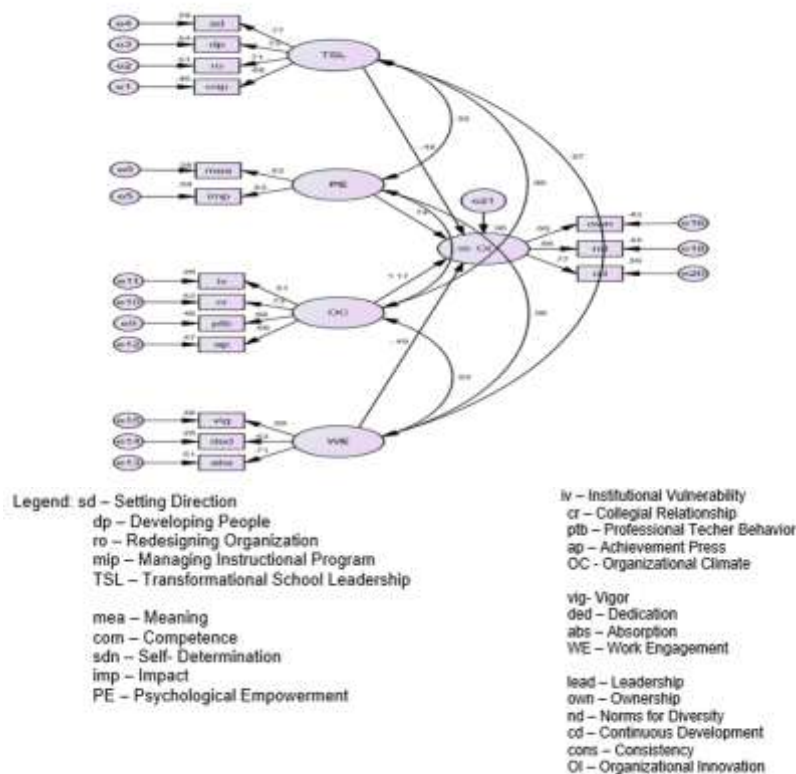


Figure 3. Structural Equation Model 3 in Standardized Solution

Based on the Structural Equation Model 3 suggests that Organizational Climate, Psychological Empowerment are pivotal variables for Organizational Innovation as evident in the β -coefficient value of 1.17 and 0.74, respectively. Cohen (1988) suggested a general threshold of 0.50 and above to signify strong effect size. On the other hand, the variables Transformational Leadership and Workplace Engagement show weak, and inverse relationships with Organizational Innovation, and were not statistically significant as evident in the β -coefficient values of -0.48 and -0.49, respectively. Although these variables are not statistically significant, the model's goodness-of-fit indices suggests that indirect effects, mediators, or untested variables may play a critical role. This implies that while direct effects may be limited, Transformational Leadership and Workplace Engagement could still play a role in driving innovation when supported by other organizational mechanisms.

The observation that the model demonstrates excellent fit yet yields non-significant structural paths is consistent with the findings in Hair et al. (2021) emphasizing that while global fit indices are necessary for assessing model adequacy, they are insufficient for validating theoretical assumptions embedded in the structural paths. More recent empirical studies in organizational behavior and innovation research have also underscored the complexity of innovation-related outcomes, which are often shaped by indirect effects, contextual contingencies, or latent interactions rather than direct linear relationships (Anderson & Gasteiger, 2022; Köhler & Cortina, 2021). For instance,

transformational leadership and psychological empowerment have been shown to influence innovation primarily through mediators such as psychological safety, team learning behaviors, or knowledge-sharing climate (Lee, Kim, & Yun, 2020; Newman et al., 2020). Similarly, organizational commitment and work engagement may exert their effects on innovation through affective mechanisms or social exchange processes that are not captured in direct-effect models (Bakker & van Wingerden, 2021).

CONCLUSION AND RECOMMENDATION

Based on the findings, the following conclusions and recommendations are framed:

The level of transformational school leadership is High. Psychological empowerment is also High, with meaning rated Very High and the other indicators, competence, self-determination, and impact, rated High. The organizational climate is High across all indicators. Similarly, work engagement is High, and organizational innovation is likewise High. In terms of the relationship between variables, the data are conclusive on the strong, positive, and significant relationships of the following: transformational school leadership and organizational innovation; psychological empowerment and organizational innovation; organizational climate and organizational innovation; and work engagement and organizational innovation. Finally, the goodness-of-fit measures for Structural Equation Model 3 demonstrate that the model aligns exceptionally well with the data. All indices meet the criteria for a good fit, reflecting strong agreement between the model and the observed data. The closeness of fit is evident with excellent results, including the impressive suitability indicated by the low root mean square of error approximation. Additionally, the statistical acceptability of the model is confirmed, ensuring its reliability and validity in representing the relationships among the analyzed variables.

Considering the abovementioned conclusions, it is imperative to recommend that regular leadership training workshops be scheduled at least once per academic year to enhance transformational leadership practices. The main focus may be on practical modules that cover innovative strategies for classroom management and instructional delivery.

Another recommendation is to sustain and leverage psychological empowerment. Considering that the indicator *meaning* is already at a very high level, sustaining this momentum while enhancing *competence* through structured professional development sessions focused on decision-making and problem-solving skills. Programs that boost self-efficacy and autonomy may also be valuable such as mentorship initiatives and peer coaching activities.

FURTHER STUDY

Future research may explore additional mediating and moderating variables, such as organizational trust or digital leadership, and employ longitudinal or mixed-method designs to further validate and extend the structural model of organizational innovation among teachers.

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REFERENCES

- Aboramadan, M., Albashiti, B., Alharazin, H., & Zaidoune, S. (2020). Organizational culture, innovation and performance: A study from a non-western context. *Journal of Management Development*, 39(4), 437–451.
- Al-Husseini, S., El Beltagi, I., & Moizer, J. (2021). Transformational leadership and innovation: The mediating role of knowledge sharing. *International Journal of Leadership in Education*, 24(5), 670–693.
- Ampler, F. C., & Guhao Jr, E. S. (2024). Transformational leadership of school heads, teamwork skills, and teacher empowerment. *IJMCER*.
- Anderson, N., & Gasteiger, R. M. (2022). Managing innovation and change in organizations: A review and research agenda. *Journal of Management Studies*, 59(6), 1489–1516.
- Asbari, M., et al. (2020). The role of transformational leadership and organizational learning on innovation capability. *International Journal of Control and Automation*, 13(1), 19–32.
- Bakker, A. B., & Albrecht, S. (2018). Work engagement: Current trends. *Career Development International*, 23(1), 4–11.
- Bakker, A. B., & van Wingerden, J. (2021). Job demands–resources theory: Taking stock and looking forward. *Journal of Occupational Health Psychology*, 26(3), 170–189.
- Bentler, P. M., Yuan, K.-H., & Eu, L. (2010). Structural equation modeling with small samples. *Multivariate Behavioral Research*, 45(2), 264–294.
- Celik, O. T., & Atik, S. (2020). Psychological empowerment and readiness for change. *Cukurova University Faculty of Education Journal*, 49(1), 73–97.
- Ergun, E., et al. (2023). Psychological empowerment, work engagement, and innovative work behavior. *Journal of Organizational Behavior*, 44(4), 587–603.

- Hair, J. F., et al. (2021). Partial least squares structural equation modeling (PLS-SEM) using R. Springer.
- Heenan, I. W., et al. (2023). The impact of transformational school leadership on school staff and school culture. *Societies*, 13(6), 133.
- Hoy, W. K., & Miskel, C. G. (2013). *Educational administration: Theory, research, and practice* (9th ed.). McGraw-Hill.
- Hoy, W. K., Smith, P. A., & Sweetland, S. R. (2002). Organizational Climate Index for high schools. *The High School Journal*, 86(2), 38–49.
- Jaffer, M. (2013). Measuring organizational innovation in educational institutions. *International Journal of Educational Management*, 27(3), 256–271.
- Kılınç, A. Ç., et al. (2024). Transformational leadership, trust, and innovative practices. *Educational Management Administration & Leadership*, 52(2), 455–474.
- Kline, R. B. (2016). *Principles and practice of structural equation modeling* (4th ed.). Guilford Press.
- Liu, S. (2013). Transformational leadership and school effectiveness. *Educational Management Administration & Leadership*, 41(2), 207–223.
- Llorente-Alonso, M., et al. (2024). A meta-analysis of psychological empowerment. *Current Psychology*, 43(2), 1759–1784.
- Logroño, O. C., Darang, K. L. T., & Picaza, R. R. (2023). College Students' Experiences in the Use of Technology in Virtual Classrooms.
- MacCallum, R. C., et al. (1996). Power analysis and sample size for covariance structure modeling. *Psychological Methods*, 1(2), 130.
- Newman, A., et al. (2020). Innovation climate: A systematic review. *Journal of Occupational and Organizational Psychology*, 93(1), 73–109.
- Picaza, R. R., Geroche, J. N., & Gindap, R. A. L. (2022). Regression analysis on perceived stressors and teaching practices of teachers towards teaching performance. *İlköğretim Online*, 21, 68-75.
- Ravand, H., & Baghaei, P. (2016). Partial least squares structural equation modeling with R. *Practical Assessment, Research & Evaluation*, 21(11), 1–16.
- Ryan, R. M., & Deci, E. L. (2020). Self-determination theory perspective.

Contemporary Educational Psychology, 61, 101860.

Schaufeli, W. B., & Bakker, A. B. (2004). Job demands, job resources, and engagement. *Journal of Organizational Behavior*, 25(3), 293–315.

Spreitzer, G. M. (1995). Psychological empowerment in the workplace. *Academy of Management Journal*, 38(5), 1442–1465.

West, S. G., et al. (2012). Model fit and model selection in SEM. In *Handbook of Structural Equation Modeling*. Guilford Press.

Zhang, Y., et al. (2020). Sampling strategies and group homogeneity in educational research. *Educational Research Review*, 30, 100322.