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The Influence of Sense of Community, Sense of Coherence, and Total Quality Management on Work Engagement Among Public Schools Teachers: A Path Model Analysis

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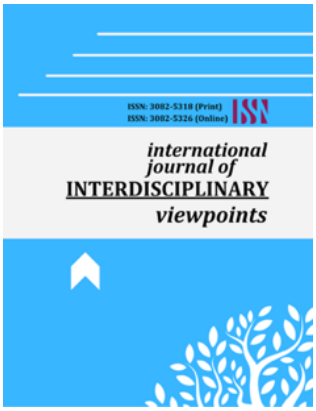

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ABSTRACT

This study looked at how sense of community, sense of coherence, and overall quality management affect work engagement among public elementary school teachers in Region XI, Philippines. Utilizing a descriptive-correlational study design, information was gathered from 400 public elementary school teachers chosen through stratified random sampling. For finding the best-fit model and looking at both direct and indirect relationships between variables, descriptive statistics (mean and standard deviation), Pearson product-moment correlation, multiple regression, and path analysis via Structural Equation Modeling (SEM) in AMOS were used to look at the data. The tools used in the surveys were checked and certified. According to the results, instructors were very engaged at work, while sense of community, sense of coherence, and general quality management were all rated as high. Work involvement was strongly linked to all three outside factors, as shown by regression and correlation analysis. Modell 3 was the best fit model, according to path analysis. Overall quality management had an indirect effect on work engagement through feeling of community. Furthermore, this shows how important psychosocial and meaning-based tools are for keeping teachers interested. In addition to providing an empirically supported model of teacher work engagement, the study helps the Department of Education (DepEd) by supporting the creation of human-centered management methods, encouraging professional collaboration, and enhancing teachers' well-being. Aiming to keep teachers engaged and improve school performance overall in public primary schools, the results provide evidence-based inputs for teacher development programs, school leadership efforts, and quality assurance procedures.

Keywords
work engagement, sense of community, sense of coherence, total quality management, path analysis

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INTRODUCTION

The quality, efficiency, and long-term viability of education systems around the world still depend on teachers. But fast changes in education, new technologies, pressures to be accountable, and rising stakeholder standards continue to make teachers' jobs harder. These days, teacher work engagement—which Mazzetti and Schaufeli (2022) describe as a positive, fulfilling state at work marked by vigor, dedication, and absorption—has become an important sign of both individual well-being and institutional performance. The Job Demands–Resources (JD–R) model (Bakker & Demerouti, 2007; Demerouti et al., 2001) says that workers are engaged at work when they have enough personal and job resources to meet the demands of their job. Research shows over and over that organizational and psychological tools are strong predictors of engagement. As an example, teachers are more likely to be engaged in their work when they have good working conditions (Addimando, 2019). Effective teams and engaged employees are even better when leaders use engaging leadership practices (Mazzetti & Schaufeli, 2022). It has been found that a professional community in schools, which includes working together, sharing responsibility, and trusting each other, is a strong predictor of teacher involvement and self-efficacy (Cai et al., 2022). Also, parts of workplace spirituality like a feeling of community have been linked to teachers' motivation at work (Wu, 2021).

In addition to organizational resources, human psychological resources are also very important. Antonovsky's Salutogenic Theory (Antonovsky, 1996) says that sense of coherence (SOC), which is how much a person thinks their life makes sense, is manageable, and has value, protects them from stress and burnout. González-Siles et al.'s systematic study from 2022 confirmed that SOC is linked to better health and less stress at work. It has been shown that SOC can lessen the effects of bad work outcomes and boost engagement in healthcare situations (Zhang et al., 2023). This suggests that it can be used in other professional fields as well, such as education. It goes on to say that both job resources (like a professional community or helpful management practices) and personal resources (like social support, self-efficacy)

can help motivate people in ways that make them more engaged (Bakker & Demerouti, 2007). Additional parts of the model focus on self-control systems (Bakker & de Vries, 2021) and how important good emotional processes are for keeping people interested (Gross, 1998; Blanke et al., 2020). As a result, engagement shouldn't just be seen as a personal trait, but also as a result of structured organizational processes and measurable psychosocial resources.

Total Quality Management (TQM) practices are structured organizational processes that may affect teacher engagement in addition to psychosocial factors. Continuous growth, participation in management, systematic feedback, and process optimization are all important parts of TQM. Research from the past has shown that good quality management leads to more committed, happy, and productive employees (Adjei & Mensah, 2016; Arunachalam & Palanichamy, 2017; Rao, 2017; Sousa & Rocha, 2022). These results show that structured quality-oriented practices may work as job resources in the JD–R framework, which could make teachers more motivated. Public schools make these relationships even more complicated. As part of their job, teachers have to deal with requirements for inclusive education, parental input, and integrating technology. Recent research shows problems with putting AI into K–12 schools (Cariaga, El Halaissi, et al., 2025), getting parents involved in a way that respects different cultures (Cariaga, Dagunan, et al., 2025), and making it easier for future teachers to learn how to do their jobs (Cariaga, Sabidalas, et al., 2025). These changing situations show how institutional structures and psychological abilities work together in school systems that are very complicated.

Even though research is growing, most of the studies that have been done so far look at sense of community, sense of coherence, or group management practices on their own. Not much real-world research has combined these social, psychological, and organizational factors into a single model that can predict how engaged teachers are at work, especially in public elementary schools. While professional community and a sense of coherence have been linked to engagement (Cai et al., 2022; Wu, 2025) and occupational resilience (González-Siles et al., 2022; Zhang et al., 2023), their structural benefits when combined with Total Quality Management practices are still not well understood. It is based on Bronfenbrenner's Social-Ecological perspective (Zakariya, 2020), the JD–R model (Bakker & Demerouti, 2007; Demerouti et al., 2001), and Salutogenic Theory (Antonovsky, 1996), and it looks at how sense of community, sense of coherence, and Total Quality Management practices affect public school teachers' engagement at work. This study aims to give school leaders, policymakers, and institutions better quality information by combining organizational structures with psychological resources into a single structured framework. Finally, it's important to know how measurable psychosocial and organizational factors affect teacher engagement in order to create interventions that improve teacher health, boost school success, and raise student achievement.

MATERIALS AND METHODS

Design

This study employed a quantitative, non-experimental, descriptive–correlational research design. The design was appropriate because it examined the relationships among sense of community, sense of coherence, total quality management (TQM), and work engagement without manipulating any variables. Structural Equation Modeling (SEM) with path analysis was utilized to determine the direct and indirect effects among the constructs. SEM is recommended for examining complex models involving multiple latent variables and interrelationships.

Setting and Participants

The study was conducted in public elementary schools in Region XI (Davao Region), Philippines, during the School Year 2024–2025. Region XI comprises ten (10) school divisions: Davao del Norte, Davao del Sur, Davao Oriental, Davao Occidental, Davao City, Tagum City, Panabo City, Digos City, Mati City, and the Island Garden City of Samal. The target population consisted of 25,969 public elementary school teachers based on Department of Education (DepEd) Region XI records. Using the Raosoft online sample size calculator with a 5% margin of error, a minimum sample of 400 respondents was determined. This sample size satisfies recommended thresholds for SEM analysis, which typically require at least 200–400 cases for stable parameter estimation (Kline, 2016; Wolf et al., 2013). Stratified random sampling was employed to ensure proportional representation across the ten school divisions. Each division served as a stratum, and respondents were randomly selected within each stratum according to the proportion of elementary teachers in that division. Inclusion criteria required participants to be currently employed public elementary school teachers in Region XI. Teachers from other regions, private schools, and secondary schools were excluded. Participation was voluntary, and respondents were allowed to withdraw at any stage without penalty.

Instruments

Data were collected using four standardized and validated instruments adapted from established scholarly sources. All instruments were measured using a five-point Likert scale ranging from 1 (Very Low) to 5 (Very High). Sense of Community. Sense of community was measured using an adapted version of the Sense of Community Index grounded in the theoretical framework of McMillan and Chavis (1986) and subsequent validation studies (Chavis et al., 2008). The instrument consisted of 20 items distributed across four dimensions: Membership, Influence, Reinforcement of Needs, and Shared Emotional Connection. Sense of Coherence. Sense of coherence was measured using the 13-item Sense of Coherence Scale (SOC-13) developed by Antonovsky (1987) and psychometrically validated by Holmgren and Söderhamn (2004). The scale measures three dimensions: Comprehensibility, Manageability, and Meaningfulness. Total Quality Management (TQM). TQM practices were assessed using an adapted instrument based on Al-Bourini et al. (2013), consisting of 23 items covering four domains: focus on client, focus on worker satisfaction, process improvement, and administrative/technological competitiveness. Work engagement was measured using the Utrecht Work Engagement Scale (UWES-17) developed by Schaufeli and Bakker (2004), which includes 17 items distributed across three dimensions: Vigor, Dedication, and Absorption.

Instrument Validation and Reliability

The instruments underwent content validation by five experts in education and organizational research. Validation ratings ranged from 20 to 34 out of 35, indicating high content validity. Revisions were made based on expert recommendations to ensure contextual appropriateness for public elementary school teachers in Region XI. A pilot study involving 50 public elementary school teachers was conducted to assess internal consistency reliability. Cronbach's alpha coefficients were computed for each scale. The results were as follows: sense of community ($\alpha = 0.946$), sense of coherence ($\alpha = 0.842$), total quality management ($\alpha = 0.960$), and work engagement ($\alpha = 0.941$). All values exceeded the recommended minimum threshold of 0.70, indicating strong internal consistency (Kline, 2016).

Data Collection Procedure

Prior to data collection, approval was secured from the Dean of Professional Schools, the DepEd Regional Director of Region XI, and the respective School Division Superintendents. Ethical clearance was obtained from the University of Mindanao Ethics Review Committee (UMERC Protocol No. 2025-053). Data were collected from March to May 2025. The researcher personally distributed printed questionnaires to selected respondents in public elementary schools. Participants were given one week to complete the survey. All distributed questionnaires were retrieved, yielding a 100% retrieval rate. Completed questionnaires were screened, coded, and prepared for statistical analysis.

Data Analysis

Data analysis was performed using SPSS and AMOS software. Descriptive statistics (mean and standard deviation) were computed to determine the levels of sense of community, sense of coherence, total quality management, and work engagement. Pearson product–moment correlation coefficients were calculated to assess the strength and direction of relationships among variables (Pallant, 2020). Multiple regression analysis was conducted to examine the predictive influence of independent variables on work engagement. Structural Equation Modeling (SEM) with path analysis was performed to test the hypothesized model and evaluate direct and indirect effects among constructs. Model fit was assessed using multiple Goodness-of-Fit indices following recommended thresholds (Hu & Bentler, 1999; Kline, 2016), including Chi-square divided by degrees of freedom (CMIN/DF ≤ 2), Comparative Fit Index (CFI ≥ .95), Tucker-Lewis Index (TLI ≥ .95), Normed Fit Index (NFI ≥ .95), Goodness-of-Fit Index (GFI ≥ .95), Root Mean Square Error of Approximation (RMSEA ≤ .05), and P-close > .50.

RESULTS AND DISCUSSION

The following topics are covered in order: level of sense of community, level of understanding of coherence, level of total quality management, level of work engagement, significance of the relationship between sense of community and work engagement, sense of coherence and work engagement, total quality management and work engagement, the best-fit model for work engagement, as well as the individual and combined effects of the variables.

Sense of Community

Table 1 revealed that respondents have a strong sense of community with an SD of 0.290 and an overall mean score of 4.13. The relatively low SD implies that responses were fairly consistent among participants. Among the individual indicators, Shared Emotional Connection had the highest mean (4.21) and was rated Very High, suggesting that emotional bonds and shared experiences are strong among the teachers surveyed.

Table 1. Level of Sense of Community

Indicator	SD	Mean	Descriptive Equivalent
Membership	0.335	4.12	High
Influence	0.441	4.13	High
Reinforcement of Needs	0.338	4.07	High
Shared Emotional Connection	0.402	4.21	Very High
Overall	0.290	4.13	High

Influence (M = 4.13) and Membership (M = 4.12) both got high scores, which means that teachers think there is strong social integration in their school community. High membership numbers show that teachers know and feel known by most people in the school, which shows a sense of shared identity and belonging. McMillan and Chavis (1986) say that membership, which includes feelings of belonging, mental safety, and identification with the group, is a key part of a sense of community. Being able to talk about work-related issues with co-teachers and enjoying interactions with other teachers are also signs of relational trust and collaborative involvement in the professional community. This result fits with real-world evidence that shows how professional community affects teachers' motivation and self-efficacy in a good way (Cai et al., 2022). The Job Demands–Resources (JD–R) model says that helpful collegial relationships are job resources that make people more motivated and engaged (Bakker & Demerouti, 2007; Demerouti et al., 2001). A feeling of community and other aspects of workplace spirituality have also been shown to be strong predictors of teachers' work engagement (Wu, 2021). Higher participation levels are also linked to good working conditions where people work together and recognize each other's contributions (Addimando, 2019). All of these results support the idea that teachers' feeling of belonging, mutual influence, and collegial support are not just social experiences, but also measurable organizational resources that make them more engaged at work.

Sense of Coherence

Table 2 revealed the overall level of sense of coherence also registered a High descriptive equivalent, with a mean of 3.94 and a standard deviation of 0.275. The data show that meaningfulness obtained the highest mean score (M = 4.16, SD = 0.381), followed by comprehensibility (M = 3.98, SD = 0.413), and manageability (M = 3.68, SD = 0.473). All three indicators were interpreted as High. These findings imply that individuals typically perceive strong coherence among the measured dimensions.

Table 2. Level of Sense of Coherence

Indicator	SD	Mean	Descriptive Equivalent
Comprehensibility	0.413	3.98	High
Manageability	0.473	3.68	High
Meaningfulness	0.381	4.16	High
Overall	0.275	3.94	High

The results show that teachers had a high level of Sense of Coherence (SOC), which means they thought their jobs were clear, manageable, and incredibly important. Some of the people who answered said they had mixed feelings and thoughts about work-related situations, but most said they were able to control and handle their emotions well. The ability to control one's emotions fits with the salutogenic view, which says that people with a high SOC see stressors as understandable and manageable instead of overwhelming (Antonovsky, 1996). Also, teachers' reports of caring about what's going on around them show a strong sense of meaningfulness, which is one of the main aspects of SOC. This shows that teachers have an emotional connection to their work and the school community. There is evidence that links a sense of unity with resilience and job satisfaction, which backs up these results. González-Siles et al.'s systematic review from 2022 found that SOC is reliably linked to less stress at work and better health among professionals. Zhang et al. (2023) also showed that a sense of coherence is a psychological resource that can help people deal with bad results at work and keep them interested. According to the Job Demands–Resources (JD–R) model, these kinds of personal resources help motivate people and make them more interested in their work (Bakker & Demerouti, 2007; Demerouti et al., 2001). According to the study, teachers can control their emotions. This fits with emotion regulation theory (Gross, 1998), which says that adaptive regulation strategies help people function psychologically in difficult situations. Flexible emotional management may also help people do better in their daily lives and feel better about themselves, according to research on emotion control variability (Blanke et al., 2020). It has been shown that mental support and caring about others can motivate people to do well in school. For instance, Shen et al. (2024) discovered that when teachers show emotional support and concern, students develop stronger mastery goals and good academic emotions, which in turn make them more engaged.

Total Quality Management

Table 3 shows an overall mean of 4.10, indicating a high level of Total Quality Management (TQM) in the organization. All indicators also scored high, with Focus on the Client (4.03), Focus on Satisfying the Worker's Needs (4.07), Focus on Improving the Process (4.13), and Focus on Administrative and Technological Needs for Competitiveness (4.18). This shows that the organization effectively emphasizes client satisfaction, employee needs, process improvement, and technological advancement.

Table 3. Level of Total Quality Management

Indicator	SD	Mean	Descriptive Equivalent
Focus on the Client	0.344	4.03	High
Focus on Satisfying the Worker's Needs	0.325	4.07	High
Focus on Improving the Process	0.416	4.13	High
Focus on Administrative and Technological Needs for Competitiveness	0.384	4.18	High
Overall	0.266	4.10	High

The results show that respondents think their company does a good job of putting Total Quality Management (TQM) methods into action. High scores on professional growth and well-being questions show that institutional processes help teachers improve themselves, which is in line with the TQM principle of continuous improvement (Rao, 2017; Sousa & Rocha, 2022). Structured management systems are meant to improve service delivery and company performance. This is shown by the efficient use of administrative procedures, such as cutting down on transaction time and making operational processes better. Systematic planning, tracking, and feedback systems are important for quality management frameworks to make things run more smoothly and keep stakeholders happy (Adjei & Mensah, 2016; Arunachalam & Palanichamy, 2017). Previous study has shown that TQM makes educational institutions much more effective as organizations (Millado et al., 2021). When institutions make quality a strategic goal, they build trust, get better results from operations, and stay competitive. This kind of structured administrative processes and quality-driven practices are seen as job resources from the point of view of the Job Demands–Resources (JD–R) model (Bakker & Demerouti, 2007; Demerouti et al., 2001). These tools make things clearer, less confusing, and more supportive at work, which can boost motivation and engagement. While most research on TQM has been done on how well institutions are doing, this study takes that a step further by looking at how it affects individual results, especially how engaged teachers are in their work. By combining TQM with psychological concepts like sense of community and sense of cohesion, this study expands the ways that quality management can be used, from improving the efficiency of businesses to getting teachers more involved in their work in public schools.

Work Engagement

Table 4 shows the level of Work Engagement among respondents, with an overall mean of 4.21, indicating a very high level of engagement. Looking at the specific indicators, Vigor scored 4.29 (Very High), showing strong energy and resilience at work; Dedication scored 4.19 (High), reflecting a strong sense of pride and involvement in tasks; and Absorption scored 4.16 (High), indicating that employees are intensely focused and immersed in their work. The low standard deviations suggest consistent responses across participants, highlighting strong, stable work engagement.

Table 4. Level of Work Engagement

Indicator	SD	Mean	Descriptive Equivalent
Vigor	0.422	4.29	Very High
Dedication	0.424	4.19	High
Absorption	0.371	4.16	High
Overall	0.324	4.21	Very High

The results show that the people who took part are very engaged at work, especially in terms of how hard they work and how dedicated they are. High scores on things like feeling energized at work, being able to keep up the effort for long amounts of time, and having trouble separating from work show the core aspects of engagement: vigor, dedication, and absorption (Bakker & Albrecht, 2018). According to the Job Demands–Resources (JD–R) model (Bakker & Demerouti, 2007; Demerouti et al., 2001), teachers who are very energetic and persistent probably think they have enough personal and job resources to meet the demands of their jobs well. There is data that shows a link between good working conditions and more engaged teachers. According to Addimando (2019), supportive work settings are a strong indicator of how engaged and effective teachers are at their jobs. Engaging leadership has also been shown to boost staff engagement and team performance by getting people involved and motivated (Mazzetti & Schaufeli, 2022). Professional community also boosts teacher self-efficacy, which is another way it encourages engagement (Cai et al., 2022). This shows how important it is to have structures that allow people to work together and help each other at work to keep up energy. High involvement means that people are highly motivated and committed, but the JD–R framework also stresses how important balance is. When there are enough resources, sustained energy and deep immersion are good. But if there aren't enough chances to recover, being immersed in work for a long time may make you more vulnerable to strain (Bakker & de Vries, 2021). So, these results show how strong teachers' motivation is and how important it is to keep up helpful organizational systems that keep people interested over time.

Relationship between Sense of Community and Work Engagement

Table 5 showed the significance of the relationship between the dimensions of sense of community and work engagement through three main areas: Vigor, Dedication, and Absorption. For Vigor, the average score was 4.29 (SD = 0.422), indicating a Very High level. Dedication had an average score of 4.19 (SD = 0.424), placing it in the High range. Absorption came in with a mean of 4.16 (SD = 0.371), also categorized as High. When we look at the overall mean for work engagement, it is 4.21 (SD = 0.324), placing it in the Very High category.

Table 5. Significance of the Relationship between Sense of Community and Work Engagement

Sense of Community	Vigor r (p)	Dedication r (p)	Absorption r (p)	Overall r (p)
Membership	.145 (.004)*	.390 (.000)*	.121 (.016)*	.280 (.000)*
Influence	.128 (.010)*	.139 (.005)*	.051 (.304)	.137 (.006)*
Reinforcement of Needs	.230 (.000)*	.272 (.000)*	.081 (.104)	.250 (.000)*
Shared Emotional Connection	.156 (.002)*	.178 (.000)*	.056 (.261)	.167 (.001)*
Overall	.212 (.000)*	.306 (.000)*	.098 (.051)	.264 (.000)*

The results show that there is a strong link between feeling like you belong in your neighborhood and being engaged at work. The overall mean score of "Very High" shows that teachers who feel like they belong, have a shared identity, and are influenced by others in their school community are also more engaged. Notably, vigor got the highest mean score. This suggests that teachers who feel a strong sense of community are more likely to be energetic, resilient, and persistent at work. This result fits with the idea that work engagement is a state of motivation marked by vigor, dedication, and immersion (Bakker & Albrecht, 2018). These findings are in line with the Job Demands–Resources (JD–R) model, which says that social support and working relationships with others are job resources that boost drive and engagement (Bakker & Demerouti, 2007; Demerouti et al., 2001). It has been shown that professional community in schools is a good predictor of teacher self-efficacy and involvement (Cai et al., 2022). Also, aspects of workplace spirituality like a feeling of community are strong predictors of teachers' engagement at work (Wu, 2021). Higher levels of involvement are also helped by workplaces that are positive and encourage collaboration (Addimando, 2019). Based on the high mean scores for dedication and absorption, it seems that teachers with strong community ties find their work important and become fully involved in their professional duties. McMillan and Chavis (1986), who argue that involvement and shared emotional connections make people more committed and responsible as a group, backs this up in theory. Teachers are more likely to stay motivated and involved in their work if they feel respected, appreciated, and supported by their coworkers.

Relationship between Sense of Coherence and Work Engagement

Table 6 displays association coefficients indicating the importance of connections among the dimensions of Sense of Coherence (Manageability, Meaningfulness, and Comprehensibility) and the elements of Work Engagement (Vigor, Dedication, and Absorption). Comprehensibility showed significant positive correlations with Vigor ($r = .239$, $p < .001$), Dedication ($r = .109$, $p = .028$), Absorption ($r = .201$, $p < .001$), and Overall Work Engagement ($r = .229$, $p < .001$). Manageability had a significant positive correlation with Vigor ($r = .159$, $p = .001$) and Absorption ($r = .203$, $p < .001$), but a significant negative correlation with Dedication ($r = -.292$, $p < .001$). Further, Work Engagement was not significant ($r = .020$, $p = .695$). Meaningfulness demonstrated significant positive correlations with Vigor ($r = .295$, $p < .001$), Dedication ($r = .440$, $p < .001$), and Overall Work Engagement ($r = .336$, $p < .001$), but not with Absorption ($r = .040$, $p = .427$). The Overall Sense of Coherence was significantly positively correlated with Vigor ($r = .347$, $p < .001$), Absorption ($r = .235$, $p < .001$), and Overall Work Engagement ($r = .281$, $p < .001$), but not with Dedication ($r = .090$, $p = .072$).

Table 6. Significance of the Relationship between Sense of Coherence and Work Engagement

Sense of Coherence	Vigor r (p)	Dedication r (p)	Absorption r (p)	Overall r (p)
Comprehensibility	.239 (<.001)*	.109 (.028)*	.201 (<.001)*	.229 (<.001)*
Manageability	.159 (.001)*	-.292 (<.001)*	.203 (<.001)*	.020 (.695)
Meaningfulness	.295 (<.001)*	.440 (<.001)*	.040 (.427)	.336 (<.001)*
Overall SOC	.347 (<.001)*	.090 (.072)	.235 (<.001)*	.281 (<.001)*

Significant at $p < .05$

The positive link between sense of community and work engagement is in line with Wu's research from 2025, which found that among teachers, work engagement was significantly and strongly linked with workplace spirituality components, such as sense of community. This supports the current finding that relational belonging and collegial closeness are important ways to keep people motivated in the classroom. The findings also show that Sense of Coherence (SOC) is strongly connected to several aspects of job satisfaction, though the strength of these connections changes among the aspects. Antonovsky's (1996) salutogenic theory says that vigor, dedication, and absorption are all better when people feel like their world is structured and easy to understand. When teachers think their work environment is stable and predictable, they are more likely to put effort into their jobs and stay mentally present to them. According to the Job Demands–Resources (JD–R) model (Bakker & Demerouti, 2007; Demerouti et al., 2001), this kind of mental clarity is a personal resource that helps motivate people and makes them more interested in their work. Positive links were found between manageability (the idea that one has enough resources to handle job demands) and vigor and absorption. According to these results, teachers who feel like they can handle problems at work are more motivated and dedicated to their jobs. As Bakker and de Vries (2021) say, this fits with versions of the JD–R model that stress self-regulation and personal resources as key factors in motivation. It's possible that the weaker or non-significant link between manageability and overall engagement means that having enough resources is not enough to promote holistic engagement without a matching sense of meaning. Meaningfulness had the strongest positive relationships with commitment and overall involvement among the SOC dimensions. This emphasizes how important it is to see work as important and useful in order to maintain emotional commitment. Meaningfulness was first thought of by Antonovsky (1996) as the driving force behind SOC. These results show that it is still very important for making teachers feel emotionally invested in their work. This understanding is strengthened by real-world evidence that connects psychological resources to involvement (Zhang et al., 2023; González-Siles et al., 2022).

Relationship between Total Quality Management And Work Engagement

Table 7 presents the correlation coefficients between the dimensions of Total Quality Management (TQM) and the components of Work Engagement (Vigor, Dedication, and Absorption). Focus on the Client showed significant positive correlations with all components of work engagement: Vigor ($r = .319$, $p < .001$), Dedication ($r = .235$, $p < .001$), Absorption ($r = .262$, $p < .001$), and Overall Engagement ($r = .342$, $p < .001$). Focus on Satisfying the Worker's Needs was also significantly and positively correlated with Vigor ($r = .250$, $p < .001$), Dedication ($r = .276$, $p < .001$), and Overall Engagement ($r = .230$, $p < .001$), but not with Absorption ($r = .006$, $p = .903$). Focus on Improving the Process correlated significantly and positively with Vigor ($r = .212$, $p < .001$), Dedication ($r = .108$, $p = .030$), and Overall Engagement ($r = .111$, $p = .026$), but not with Absorption ($r = -.073$, $p = .147$). Focus on the Administrative and Technological Needs for Competitiveness had a significant but weak positive correlation with Vigor ($r = .118$, $p = .018$), and non-significant relationships with Dedication, Absorption, and Overall Engagement. The Overall TQM score was significantly and positively correlated with Vigor ($r = .306$, $p < .001$), Dedication ($r = .209$, $p < .001$), and Overall Engagement ($r = .243$, $p < .001$), but not with Absorption ($r = .051$, $p = .308$).

Table 7. Relationship between Total Quality Management and Work Engagement

TQM Dimension	Vigor r (p)	Dedication r (p)	Absorption r (p)	Overall r (p)
Focus on the Client	.319 (<.001)*	.235 (<.001)*	.262 (<.001)*	.342 (<.001)*
Focus on Satisfying the Worker's Needs	.250 (<.001)*	.276 (<.001)*	.006 (.903)	.230 (<.001)*
Focus on Improving the Process	.212 (<.001)*	.108 (.030)*	-.073 (.147)	.111 (.026)*
Focus on Administrative & Technological Needs	.118 (.018)*	ns	ns	ns

TQM Dimension	Vigor r (p)	Dedication r (p)	Absorption r (p)	Overall r (p)
Overall TQM	.306 (<.001)*	.209 (<.001)*	.051 (.308)	.243 (<.001)*

Significant at p < .05; ns = not significant

The current results are in line with those of other studies that have looked into the link between Total Quality Management (TQM) and employee motivation at work. There is evidence that structured quality management methods lead to better employee attitudes and better results for the company (Rao, 2017; Sousa & Rocha, 2022). Focusing on the client had the strongest and most stable positive relationships with all three types of work engagement (vigor, dedication, and absorption). This means that teachers are more motivated, committed, and involved in their work when schools put the needs of stakeholders and the quality of services first. In the TQM philosophy, focusing on the client leads to clear purpose and shared goals, which may make workers feel like they are making a difference (Adjei & Mensah, 2016; Arunachalam & Palanichamy, 2017). Improvements in technology and administration were linked to more vigor, but they were not strongly linked to other aspects of involvement. This means that even though systematic process optimization and efficiency measures are important for the performance of an institution, they might not always make people feel or think deeply about their job. The Job Demands–Resources (JD–R) model (Bakker & Demerouti, 2007; Demerouti et al., 2001) says that structural improvements are like job resources. But how motivating they are may rely on whether they are paired with supportive and inclusive practices. Specifically, focusing on meeting workers' needs showed strong positive connections with many aspects of engagement, especially dedication. Teachers are more likely to feel emotionally committed and energized when their employers put an emphasis on their support, praise, and well-being. This fits with JD–R ideas that tools at work that encourage independence, support, and praise boost motivation, which leads to engagement (Bakker & Albrecht, 2018; Bakker & de Vries, 2021). There isn't a strong link between absorption and employee-centered practices, which suggests that they mostly boost affective and energetic involvement rather than deep task immersion. Even though the links were not as strong, process improvement projects were also linked to vigor, dedication, and general engagement. A mindset of learning and shared responsibility may grow from efforts to improve things all the time, which can boost motivation. To back up this idea, Millado et al. (2021) showed that TQM is a good way to predict how well a company will do in higher education. In this broader sense, this study looks at whether TQM practices also have an effect on outcomes at the individual level, especially on how engaged teachers are in their work.

Goodness of Fit Measures of Path Analysis Model 1

Presented in Table 8 are the goodness-of-fit indices for Path Analysis Model 1. The model yielded a Chi-square to degrees of freedom ratio (CMIN/DF) of 9.581, which exceeds the commonly recommended threshold of 2 or less for good fit (Hu & Bentler, 1999). The p-value for the Chi-square test was significant (p = .002), indicating a discrepancy between the observed and model-implied covariance matrices. The P-Close value was 0.018, below the recommended threshold of> 0.05, suggesting the model does not have a good fit.

Table 8. Goodness-of-Fit Indices for Path Analysis Model 1

Index	Criterion	Model Fit Value
P-Close	> .05	.018
CMIN/DF	< 2	9.581
GFI	> .95	.988
CFI	> .95	.971
NFI	> .95	.974
TLI	> .95	.859
RMSEA	< .05	.149

Other fit measures, on the other hand, showed better results. The Goodness-of-Fit Index (GFI =.988), the Comparative Fit Index (CFI =.971), and the Normed Fit Index (NFI =.974) all went above the suggested cutoff of.95, which means they were very close to a null model (Bentler, 1990; Bentler & Bonett, 1980; Hu & Bentler, 1999). These indicators show that the suggested structural model explains a lot of the covariance between the variables that have been noticed. The Tucker–Lewis Index (TLI =.859), on the other hand, was below the normal levels of.90 or.95, which means that the fit wasn't quite right. Also, the Root Mean Square Error of Approximation (RMSEA =.146) was much higher than the upper limit of.08 that is suggested, which means that the population covariance matrix was not well approximated (Hu & Bentler, 1999). The model does well in terms of incremental fit (CFI, NFI, and GFI), but not so well in terms of absolute and parsimonious fit, as shown by the mixed pattern of results. The high CMIN/DF ratio and significant Chi-square statistic show that the hypothesized model and the actual data are not matching up. In the literature on structural equation modeling, it is said that the Chi-square statistic changes depending on the size of the sample. It often becomes significant when the sample size is bigger, even when other indicators show that the model fits well (Jackson et al., 2009). Because of this, using various fit indices is suggested for a full assessment of model suitability (Hu & Bentler, 1999). The difference between high incremental fit indices and low absolute fit indices could be due to incorrect model design, missing paths, or problems with complexity. Jackson et al. (2009) stress how important it is to give multiple indices and think about theoretical justification when assessing structural models. In this case, the model does a good job of explaining things compared to a basic model, but the high RMSEA and poor TLI show that it needs to be refined.

Estimates of Variable Regression Weights in Path Analysis Model 1

Table 9 presents the regression weights from Path Analysis Model 1, examining the predictive relationships among Sense of Coherence (SC), Total Quality Management (TQM), Sense of Community Engagement (SCE), and Work Engagement (WE). Sense of Coherence significantly predicts Sense of Community Engagement (B = 0.294, SE = 0.049, C.R. = 6.005, β = 0.311, p < .001).

Table 9.Standardized and Unstandardized Regression Weights for Path Analysis Model 1

Outcome Variable	Predictor Variable	B	SE	CR	β	*p*
SCE	SC	0.294	0.049	6.005	.311	< .001
SCE	TQM	0.326	0.053	6.102	.316	< .001
WE	TQM	0.163	0.073	2.228	.133	.026
WE	SC	0.206	0.067	3.070		

The structural path analysis showed that Total Quality Management (TQM) was a strong predictor of Sense of Community Engagement (SCE) (B = 0.326, SE = 0.053, C.R. = 6.102, β = 0.316, p <.001). This means that schools with better quality management practices have

higher levels of perceived community involvement. There was a strong link between TQM and Work Engagement (WE) (B = 0.163, SE = 0.073, C.R. = 2.228, β = 0.133, p =.026), showing that it had a modest effect on teachers' motivation. In the same way, Sense of Coherence (SOC) was a strong predictor of Work Engagement (B = 0.206, SE = 0.067, C.R. = 3.070, β = 0.184, p =.002), showing how important personal psychological resources are for encouraging engagement. The chi-square value for the model (χ^2 = 9.581, df = 1, p =.002) shows that the hypothesized model and the actual data don't match up exactly. However, structural equation modeling literature says that chi-square is very sensitive to sample size and model complexity. This means that even models that fit pretty well often give significant results (Jackson et al., 2009). So, instead of just using chi-square, interpretation should be based on more than one indicator. Antonovsky's (1996) salutogenic theory says that people are more resilient and motivated if they think their world is understandable, manageable, and meaningful. The significant positive path from SOC to Work Engagement (β =.184, p =.002) backs this up. According to the Job Demands–Resources (JD–R) model (Bakker & Demerouti, 2007; Demerouti et al., 2001), SOC is a personal resource that boosts drive, which leads to vigor, dedication, and focus. There is more proof that psychological resources can help predict interest (Zhang et al., 2023; González-Siles et al., 2022). The strong predictive effect of TQM on Sense of Community Engagement (β =.316, p <.001) shows that quality-focused business practices create environments where people can work together toward common goals and be a part of the process. Previous studies have shown that TQM improves the efficiency of educational organizations (Millado et al., 2021) and makes employees happier (Rao, 2017; Sousa & Rocha, 2022). Structured quality management practices are organizational resources that improve both relational and motivational results from a JD–R point of view. Both SOC (β =.184) and TQM (β =.133) have direct effects on Work Engagement. This shows that both personal psychological resources and group quality practices play a role in explaining teacher engagement. This combined result fits with the JD–R idea that engagement comes from how personal and job resources work together (Bakker & Albrecht, 2018; Bakker & de Vries, 2021). Also, past research in school settings shows that organizational and personal factors affect how involved teachers are in their work, which supports the usefulness of predictive modeling methods (Guhao Jr., 2022). This study moves this line of research forward by using path analysis to look at sense of community, sense of cohesion, and TQM all at the same time within a single structural framework.

Goodness of Fit Measures of Path Analysis Model 2

Table 10 summarizes the goodness-of-fit indices for Path Analysis Model 2. The model yielded a Chi-square to degrees of freedom ratio (CMIN/DF) of 4.305, which exceeds the ideal threshold of less than 2, indicating a moderate fit (Schermelleh-Engel et al., 2003). The p-value associated with the Chi-square test was .038, suggesting a statistically significant difference between the observed and model-implied covariance matrices. However, the P-Close value was .142, exceeding the recommended cutoff of > 0.05, indicating an acceptable close fit of the model in terms of RMSEA confidence intervals (MacCallum, Browne & Sugawara 1996)

Table 10. Goodness-of-Fit Indices for Path Analysis Model 2

Index	Criterion	Model Fit Value
P-Close	> .05	.142
CMIN/DF	< 2	4.305
p-value	> .05	.038
GFI	> .95	.995
CFI	> .95	.991
NFI	> .95	.988
TLI	> .95	.946
RMSEA	< .05	.091

The incremental fit values for Model 2 show that it does very well compared to the other models. The Goodness-of-Fit Index (GFI =.995), the Comparative Fit Index (CFI =.991), and the Normed Fit Index (NFI =.988) are all higher than the suggested cutoff number of.95. This means that the model is fitting well compared to a null model (Bentler, 1990; Hu & Bentler, 1999). It's a little lower than the stricter Tucker–Lewis Index (TLI =.946).95 threshold, which is still higher than the usual.90 standard, means that the model fits well and there is enough parsimony (Hu & Bentler, 1999). By looking at these numbers together, they show that the model explains a lot of the covariance between factors when compared to a baseline model. However, the Root Mean Square Error of estimate (RMSEA =.091) is higher than the upper limit of.06 to.08 that is usually suggested (Hu & Bentler, 1999). This means that there is moderate estimate error and possible places where the model could be improved. Even though RMSEA numbers above.08 usually mean that the absolute fit isn't perfect, model complexity and sample size effects should be taken into account when interpreting the results. A lot of research on structural equation modeling points out that some indices, like chi-square and RMSEA, may change depending on the sample size and the model parameters (Jackson et al., 2009). The P-Close number of.142 means that the null hypothesis of close fit cannot be thrown out, which makes some worries about RMSEA lessened. This pattern of results—strong incremental fit but modest approximation error—occurs a lot in structural models, especially when more than one construct and pathway is given. It is suggested to report more than one fit index to give a more accurate picture of how well the model works (Hu & Bentler, 1999; Jackson et al., 2009).

Estimates of Variable Regression Weights in Path Analysis Model 2

Table 11 presents the estimated regression weights for Path Analysis Model 2, which examines the predictive relationships among Sense of Coherence (SC), Total Quality Management (TQM), Sense of Community Engagement (SCE), and Work Engagement (WE). Sense of Coherence significantly predicts Sense of Community Engagement (B = 0.294, SE = 0.049, C.R. = 6.005, β = 0.311, p < .001).

Table 11. Standardized and Unstandardized Regression Weights for Path Analysis Model 2

Outcome Variable	Predictor Variable	B	SE	CR	β	p
SCE	SC	0.294	0.049	6.005	.311	< .001
SCE	TQM	0.326	0.053	6.102	.316	< .001
WE	TQM	0.167	0.067	2.487	.137	.013
WE	SCE	0.251	0.065	3.855		

On the other hand, Total Quality Management also significantly predicted Sense of Community Engagement (B = 0.326, SE = 0.053, C.R. = 6.102, β = 0.316, p < .001). Total Quality Management significantly predicts Work Engagement (B = 0.167, SE = 0.067, C.R. = 2.487, β = 0.137, p = .013). Sense of Community Engagement significantly predicts Work Engagement (B = 0.251, SE = 0.065, C.R. = 3.855, β = 0.212, p < .001). The model's chi-square value was 4.305 on 1 degree of freedom, with a p-value of .038, indicating a modest but acceptable

fit. The findings from Path Analysis Model 2 indicated that Sense of Coherence (SC) and Total Quality Management (TQM) are significant predictors of Sense of Community Engagement (SCE), which in turn significantly predicts Work Engagement (WE). Additionally, TQM directly predicted WE, highlighting both direct and indirect pathways influencing employee engagement. The significant positive effect of SC on SCE ($\beta = .311$, $p < .001$) suggested that those who perceived their work environment as comprehensible, manageable, and meaningful were more likely to develop a strong sense of community within the workplace. Consistent with recent research, the role of psychological resources in fostering social connectedness and collective engagement has been emphasized (Schäfer et al., 2023; Lee et al., 2023). Also, established by Geolina and Guhao Jr. (2021), the sense of coherence and the sense of community are significantly correlated. In this study, they are positioned as predictors of teachers' work engagement in the proposed path model. TQM significantly predicted both SCE ($\beta = .316$, $p < .001$) and WE ($\beta = .137$, $p = .013$), underscoring its critical role in shaping organizational culture and employee motivation. These results align with contemporary studies showing that quality management practices enhance teamwork, communication, and employee satisfaction, thereby boosting engagement (Alharbi et al., 2021; Sousa & Rocha, 2022). The significant path from SCE to WE ($\beta = .212$, $p < .001$) highlighted the mediating role of community engagement in translating organizational and psychological resources into higher work engagement. According to the Job Demands-Resources (JD-R) model, social resources, such as community engagement, are vital for sustaining employee motivation and energy (Bakker & Albrecht, 2018; Lee et al., 2023). Although the chi-square test indicated a modest fit ($\chi^2 = 4.305$, $df = 1$, $p = .038$), the overall pattern of significant paths suggests the model is a helpful framework for understanding the interplay between SC, TQM, SCE, and WE. Future research might refine the model to improve fit, possibly by including additional moderators. Additionally, companies help workers feel more cohesive by improving the manageability, clarity, and significance of their work. Concurrently, a strong workplace community can be built by implementing excellent TQM practices, thereby increasing engagement. These integrated strategies can lead to a more motivated and productive workforce (Schnell et al., 2020; Alharbi et al., 2021).

Goodness of Fit Measures of Path Analysis Model 3

Table 12 presents the goodness-of-fit indices for Path Analysis Model 3. The model demonstrated excellent fit across multiple indices. The Chi-square to degrees of freedom ratio (CMIN/DF) was 1.555, which is well within the acceptable range of <2, indicating a good fit between the model and the observed data (Kline, 2016). The associated p-value was 0.212, exceeding the conventional threshold of 0.05, suggesting that it does not differ significantly from the observed data.

Table 12. Goodness-of-Fit Indices for Path Analysis Model 3

Index	Criterion	Model Fit Value
P-Close	> .05	.415
CMIN/DF	< 2	1.555
p-value	> .05	.212
GFI	> .95	.998
CFI	> .95	.998
NFI	> .95	.996
TLI	> .95	.991
RMSEA	< .05	.037

Incremental fit indices were also extreme: Goodness of Fit Index (GFI) was .998, Comparative Fit Index (CFI) was .998, Normed Fit Index (NFI) was .996, and Tucker-Lewis Index (TLI) was .991. All these values surpass the recommended cutoff of .95, reflecting excellent model fit (Hu & Bentler, 1999). The Root Mean Square Error of Approximation (RMSEA) was .037, which is below the stringent cutoff of .05, indicating a close approximate fit of the model in the population (Browne & Cudeck, 1993). The P-Close value of .415 further supports the conclusion of a close fit. Model 3 fit indices indicated excellent overall fit, suggesting that the model accurately captures the proposed relationships among the variables. The low CMIN/DF ratio and non-significant Chi-square p-value imply that the model adequately reproduces the observed covariance matrix, minimizing residual error (Schermelleh-Engel et al., 2003). High values of GFI, CFI, NFI, and TLI indicated strong incremental fit, meaning the model explained the data substantially better than a null model with no relationships (Bentler, 1990; Jackson et al., 2009). The RMSEA value of .037, well below the .05 cutoff, confirmed that the model's approximation error is minimal, which is a strong indicator of model robustness (Steiger, 1990). This excellent fit supported the theoretical framework underpinning Model 3 and provides confidence in the validity of the estimated path coefficients. It suggests that the constructs and hypothesized pathways effectively capture the dynamics among the variables studied. Given the strong fit, Model 3 can be reliably used to interpret the structural relationships and inform organizational interventions. The results underscore the importance of the integrated factors within the model in predicting outcomes such as work engagement. Researchers considered this model as a solid base for further exploration, possibly extending it with additional variables or testing its applicability across different contexts.

Estimates of Variable Regression Weights in Path Model 3

Table 13 displayed estimated regression weights for Path Analysis Model 3, which investigated the relationships among Sense of Coherence (SC), Total Quality Management (TQM), Sense of Community Engagement (SCE), and Work Engagement (WE). Sense of Coherence significantly predicted Sense of Community Engagement (B = 0.294, SE = 0.049, C.R. = 6.005, $\beta = 0.311$, $p < .001$). Total Quality Management also significantly predicts Sense of Community Engagement (B = 0.326, SE = 0.053, C.R. = 6.102, $\beta = 0.316$, $p < .001$).

Table 13. Standardized and Unstandardized Regression Weights for Path Model 3

Outcome Variable	Predictor Variable	B	SE	CR	β	p
SCE	SC	0.294	0.049	6.005	.311	< .001
SCE	TQM	0.326	0.053	6.102	.316	< .001
WE	SC	0.184	0.061	2.998	.164	.003
WE	SCE	0.235	0.065	3.629		

Sense of Coherence significantly predicted Work Engagement (B = 0.184, SE = 0.061, C.R. = 2.998, $\beta = 0.164$, $p = .003$). Sense of Community Engagement significantly predicted Work Engagement (B = 0.235, SE = 0.065, C.R. = 3.629, $\beta = 0.199$, $p < .001$). The model fit was decent, with a chi-square value of 1.555 on 2 degrees of freedom and a non-significant p-value of.212. The findings from Path Analysis Model 3 provided strong evidence for the integral roles of Sense of Coherence (SC), Total Quality Management (TQM), and Sense of Community Engagement (SCE) in predicting Work Engagement (WE). SC strongly predicts SCE, in line with earlier studies ($\beta = .311$, $p <$

.001), suggesting that workers are more likely to feel involved and connected to their workplace community when they believe their work environment is understandable, controllable, and meaningful. This aligns with recent studies highlighting the importance of psychological coherence in fostering social bonds and collective engagement within organizations (Schäfer et al., 2023; Lee et al., 2023). Moreover, TQM significantly predicted SCE ($\beta = .316$, $p < .001$), reinforcing the notion that quality management practices cultivate a supportive, collaborative work environment. This finding supported contemporary evidence that TQM enhances teamwork, communication, and employee satisfaction, which collectively strengthen community engagement (Alharbi et al., 2021; Sousa &). Rocha, 2022. Additionally, both SC ($\beta = .164$, $p = .003$) and SCE ($\beta = .199$, $p < .001$) significantly predicted WE, underscoring that employees' psychological resources and their sense of belonging to the community directly contribute to their engagement at work. Also, the non-significant chi-square test ($\chi^2 = 1.555$, $df = 2$, $p = .212$) alongside excellent fit indices (as reported in Table 12) suggests that Model 3 provides a robust representation of the relationships among SC, TQM, SCE, and WE. This supports the theoretical framework that integrates individual psychological factors and organizational practices in explaining work engagement. Therefore, organizations focused on enhancing employees' sense of coherence by fostering clarity, manageability, and meaningfulness in work roles. Simultaneously, implementing an effective TQM practice that builds a strong sense of community further promotes engagement. These integrated strategies improved employee motivation, well-being, and organizational performance (Schnell et al., 2020; Alharbi et al., 2021).

Conclusion and Recommendations

The results show that public elementary school teachers in Region XI are very engaged at work, which is mostly due to strong psychosocial tools. The third and final path model (Model 3) showed that Sense of Community and Sense of Coherence have big, direct effects on Work Engagement. Total Quality Management (TQM), on the other hand, has a secondary effect on engagement through Sense of Community. It seems that meaning-based and relational tools work better to boost teachers' energy, commitment, and focus than structural management systems alone. Antonovsky's Salutogenic Theory and the Job Demands–Resources (JD–R) Theory both say that teachers are more involved in their work when they think it is clear, doable, has meaning, and is part of a helpful professional community. Therefore, the null hypothesis that TQM has no effect on work engagement is partly rejected because it has an effect through community mechanisms. On the other hand, the null hypotheses about Sense of Community and Sense of Coherence are rejected because they have strong predictive effects.

Because of these results, school leaders and the Department of Education should focus on programs that help teachers feel like they are part of a professional community and a feeling of coherence. These are the factors that are most likely to lead to engagement. To help students feel like they fit and have a common goal, schools should set up ways for people to work together, like professional learning communities, peer mentoring systems, and ways for everyone to take part in making decisions. To help teachers feel more mentally stable, professional development programs should also focus on building resilience, making roles clear, and designing jobs that are important. Although TQM practices should be kept up, they should not only be focused on making things run more smoothly, they should also be people-centered and in line with the social and psychological needs of teachers. Also, schools should regularly test teachers' sense of community, coherence, and work involvement using proven tools to spot early signs of stress or disengagement and act quickly with interventions that are based on evidence. By adding these kinds of tracking tools to quality assurance systems, institutions can keep improving in a way that cares about teachers' well-being and keeps them engaged over time.

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