



THE MEDIATING ROLES OF SCHOOL CULTURE AND WORK ENGAGEMENT ON THE RELATIONSHIP BETWEEN ORGANIZATIONAL CITIZENSHIP BEHAVIOR AND TOTAL QUALITY MANAGEMENT IN PUBLIC SCHOOLS

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Abstract:

This study investigated the mediating roles of School Culture (SC) and Work Engagement (WE) in the relationship between Organizational Citizenship Behavior of Teachers (OCBT) and Total Quality Management (TQM) among public elementary school teachers in Region XI, Philippines. Using a quantitative, non-experimental correlational research design, data were gathered from public elementary school teachers through an adapted survey questionnaire, employing stratified random sampling. Statistical tools used included mean, Pearson product-moment correlation, and path analysis. Results revealed that OCBT, SC, WE, and TQM were all demonstrated at a very high level. OCBT has significant positive relationships with SC, WE, and TQM, while both mediators were also significantly related to TQM. Furthermore, path analysis confirmed that SC and WE fully mediated the relationship between OCBT and TQM, indicating that teachers' positive voluntary behaviors were associated with higher TQM indirectly through supportive school culture and stronger work engagement. The findings emphasized the importance of strengthening teachers' positive organizational behaviors and fostering supportive, collaborative school environments to sustain teacher engagement and promote effective TQM practices in public schools. The study supports SDG 4: Quality Education by promoting quality education through positive school culture, teacher engagement, and effective management practices. It also aligns with SDG

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8: Decent Work and Economic Growth by improving teacher motivation and productivity.

SDG Indicator: #4: Quality Education, #8: Decent Work and Economic Growth

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1. Introduction

In basic education, Total Quality Management (TQM) remains inconsistently implemented and weakly institutionalized, despite its recognized role in enhancing educational quality (Siswadhi, Liantifa, & Yelnim, 2023). Furthermore, many schools struggle with inadequate integration of TQM components and uncertain implementation processes, limiting their overall effectiveness (Kumar & Kumar, 2024). Such challenges include limited resources (Rifiyyah & Bahrani, 2025), varying levels of organizational readiness, and weak leadership commitment, which further impede its consistent application (Susilowati & Sumiati, 2025). In practice, TQM is often not fully set in daily school operations, creating a gap between its theoretical principles and practical implementation (Camañero & Paglinawan, 2024). Consequently, limited time and uneven understanding of quality management roles were the hindering factors in implementing TQM in schools (Christine & Raharja, 2025).

Moreover, in the Philippine basic education context, TQM implementation remains uneven and frequently dependent on individual teacher competencies rather than institutional systems, raising concerns about sustainability and integration (Nazareno, Lumanas, Sarillana, & Bauyot, 2024). Also, the lack of standardized and validated tools to measure TQM makes it not easy to evaluate its level and effectiveness across schools (Quimson, Zulueta, & Vadil, 2024). Recent studies further revealed that TQM implementation is present, but some dimensions of it are less developed (Baladad & Naui, 2026). Collectively, these findings highlight a critical issue in investigating TQM as a dependent variable.

In this sense, studying TQM as a dependent variable is essential because it serves as a critical framework for improving educational quality, organizational efficiency, and stakeholder satisfaction in schools (Sazon *et al.*, 2021). Prior studies have established that TQM provides a systematic approach to enhancing teaching effectiveness, school management processes, and continuous improvement, thereby strengthening institutional performance in educational settings (Al-Kahtani & Al-Mekhlafi, 2024). Empirical evidence further shows that effective TQM implementation contributes to improved coordination, accountability, and sustainable school development (Venalia, Dwiningrum, & Burgawanti, 2024; Alauddin & Yamada, 2023). These studies demonstrate that TQM promotes organizational excellence and stakeholder

responsiveness in the academe (Gunawan *et al.*, 2024; Ktebi, 2024). However, existing literature also highlights variations in implementation and contextual application, particularly in basic education settings, indicating the need for further empirical investigation to strengthen its theoretical and practical foundations (Kaiseroglou *et al.*, 2023; Quimson *et al.*, 2024). Hence, the literature establishes TQM as essential to educational quality, organizational performance, and stakeholder satisfaction, but differences in its implementation highlight the need for further research, particularly in basic education settings.

Recent studies establish that Organizational Citizenship Behavior (OCB), School Culture (SC), and Work Engagement (WE) are positively associated with TQM. Zhang *et al.* (2023), Siswadhi *et al.* (2023) and Huynh *et al.* (2024) found that OCB dimensions such as altruism, conscientiousness, sportsmanship, courtesy and civic virtue support quality-oriented practices. Similarly, Samad *et al.* (2024) and Fan *et al.* (2023) emphasized that conscientiousness, civic virtue, courtesy, and altruism promote process management, collaboration, customer focus, communication, and continuous improvement. Moreover, studies by Azzahra *et al.* (2024), Sugiono and Nurhasan (2025), Wang and Huang (2025), Sun *et al.* (2024), and Camacho *et al.* (2024) further demonstrated that supportive school culture strengthens OCB, while Camañero and Paglinawan (2024), Guliban and Tagadiad (2025), Jani (2025), and Shuaib and He (2023) linked positive school culture with stronger quality-management practices.

Likewise, Chen *et al.* (2024), Alzeer (2024), Farisi *et al.* (2024), and Nguyen *et al.* (2025) reported significant relationships between WE and OCB, indicating that vigor, dedication, and absorption encourage discretionary and collaborative behaviors. In relation to TQM, Vanessa *et al.* (2023), Heyns and Boikanyo (2019), Irfan *et al.* (2025), Gepaya and Tan (2023), and Nwanedo (2026) found that work engagement contributes to quality-management effectiveness, while Nini and Guhao (2026) identified an indirect relationship between TQM and work engagement through a sense of community. Despite these established relationships, limited research has simultaneously examined OCB, SC, and WE as interconnected variables explaining TQM, particularly in public elementary education. This gap underscores the need for a comprehensive model examining the mediating roles of school culture and work engagement in the relationship of organizational citizenship behavior and total quality management.

The urgency of this study stems from persistent challenges in TQM implementation in public schools, including limited resources, weak management capacity, varying organizational readiness, insufficient leadership commitment, limited time, and unclear quality-management roles (Chua-Reyes *et al.*, 2022; Faza *et al.*, 2024; Susilowati & Sumiati, 2025; Christine & Raharja, 2025). In the Philippine context, quality initiatives may also depend on individual teacher competencies rather than sustainable institutional systems (Nazareno *et al.*, 2024). Thus, this study examines the levels and relationships of OCB of teachers, school culture, work engagement, and TQM, and determines whether school culture and work engagement mediate the relationship

between OCB of teachers and TQM. The study further supports SDG4 through quality education and SDG8 through improve teacher engagement and workplace conditions.

Anchored on TQM as a systematic approach to continuous improvement, employee involvement, and customer focus (Siswadhi *et al.*, 2023), the study assesses TQM, OCB of teachers, school culture, and work engagement, examines their significant relationships and predictive paths, and tests the mediating roles of school culture and work engagement. The hypotheses are tested at the 0.05 level of significance. The study is substantial because it provides empirical evidence for strengthening sustainable, system-driven quality management in public schools in Region XI. Findings of this study also benefit the Department of Education (DepEd), school leaders, teachers, policymakers, and learners by informing evidence-based strategies for improving school management, instructional quality, and learning environments. It also contributes an empirically tested model for future educational management and quality-assurance research.

2. Literature Review

Organizational citizenship behavior (OCB) comprises five dimensions: altruism, conscientiousness, courtesy, civic virtue, and sportsmanship (Mallory, 2020; Abdullah, 2021; Kataria & Adhikari, 2022). Also, recent empirical studies consistently demonstrate that OCB is a multidimensional construct that positively influences teachers and organizational outcomes in educational contexts. For instance, Roy *et al.* (2024) found a significant association among the dimensions of OCB, which further has implications for practice. Also, Romero and Guhao (2024) reported a very high level of OCB among public school teachers, indicating that teachers frequently manifested extra-role behaviors beyond their usual duties. Likewise, Sadinas and Vadil (2024) and Villan and Quines (2025) reported high levels of OCB among teachers.

Meanwhile, Ismail and Hassan (2024) reported a moderate level of OCB among secondary school teachers in Malaysia, demonstrating that OCB manifestation can vary across educational settings. In contrast, Yusnita *et al.* (2023) found that many secondary school teachers demonstrated low OCB, while Todorović and Jovanović (2025) identified a distinct group of teachers with low OCB. These findings demonstrate that teachers' OCB may differ considerably across various educational contexts.

This study also deals with the parameters of Total Quality Management (TQM) as the dependent variable. Al-Abdali (2021) introduced four dimensions of TQM: leadership commitment, continuous improvement, process management, and customer focus. As such, Anastasiou and Ntokas (2024) describe TQM in education as a leadership-driven, collaborative system focused on continuous improvement, with effectiveness hinging on strong leadership, teamwork, and communication, though implementation challenges persist. Comparatively, Mahmood *et al.* (2024) obtained a very high level of manifestation among 346 teachers from high- and low-performing schools, while Nazareno *et al.* (2024)

found that TQM practices among school heads were strongly manifested. Consequently, Salindog and Montes (2024) reported that TQM implementation in inclusive education in public senior high schools was highly implemented across all aspects of TQM. However, Sumalee and Assalihee (2025) revealed that aspects of TQM, such as customer focus, were moderate, indicating a need for further TQM development. This empirical evidence highlights the varied implementation of TQM practices across schools and educational settings.

School culture is the first mediating variable in this study. Recent studies have established the significant role of school culture in promoting organizational effectiveness and educational outcomes. In particular, Guhao and Sioting (2023) examined school culture through professional collaboration, affiliative collegiality, and self-determination/effectiveness, revealing that these dimensions collectively foster a collaborative and supportive school environment, which enhances teacher performance and school effectiveness. Moreover, Camber-Tambolas *et al.* (2023) showed moderate to relatively strong positive relationships among the variables, indicating that dimensions of school culture are interconnected and interdependent, and play a significant role in shaping the quality of students' educational experiences and well-being within schools. Additionally, Pellogo and Guhao (2024) reported a very high level of school culture among public elementary school teachers in Region XI. Consequently, Nkwatsibwe and Balimuttajjo (2024) revealed that while 77.4% of teachers perceived school culture as strong, 22.6% reported a moderate level, suggesting that not all teachers uniformly experienced positive school culture. More recently, Eisenschmidt and Oppi (2026) identified a low level of improvement-oriented school culture among schools in a large sample of 2,439 teachers. These findings indicate that school culture may be strongly evident in some aspects, while other contexts require improvement.

The second mediating variable is Work Engagement (WE). Han *et al.* (2021) stated that one of the most important factors influencing a broad array of behavioral and attitudinal outcomes in the workplace is work engagement. At the same time, as Guhao (2025) expressed, work engagement is always defined as a positive, satisfying condition of work characterized by vigor, dedication, and absorption. Thus, the concept of work engagement highlights the significance of employees' active and energetic involvement in work processes, which has been shown to lead to increased job satisfaction and overall well-being (Alutaya & Guhao Jr., 2023). Recent studies have comprehensively explored the nature of work engagement across various constructs. As such, Fernandez and Quines (2023) revealed a high level of work engagement among teachers. Their study further illustrated the strong relationship between work engagement and teacher retention.

Additionally, Lingcob and Quines (2025) reveal that all indices of work engagement are positively correlated with teachers' teamwork. This manifestation is consistent with Guhao's (2023) assertion that educators exhibit a high degree of work engagement, as evidenced by their strong sense of pride in their profession, intense work-

related happiness, and inability to disengage from it. Apparently, Maquidato and Bayani (2024) found that teachers demonstrated high levels of vigor and dedication but relatively low levels of absorption. Similarly, Drouin-Rousseau *et al.* (2024) identified a disengaged teacher profile, indicating that engagement varies across teachers and educational settings.

Moreover, in Shang's (2022) structural equation modeling, it was found that work engagement mediates the relationship between job crafting and job performance, both individually and in series. Also, Lu *et al.* (2022) demonstrated that the positive mediating effect of work engagement on the relationship between employee mental health and job performance is significant. Eventually, these studies indicate the dynamic role of work engagement across various models and correlations with other variables. Consequently, these empirical findings support the present study by demonstrating that work engagement is a significant organizational factor linked with positive teacher and school outcomes. Also, building on these findings, the present study explores the mediating role of work engagement in the relationship between OCB of teachers and TQM, providing further evidence of how teacher engagement contributes to the successful implementation of quality management in public schools.

Consequently, Figure 1 presents the conceptual framework, showing the study's variables. The path analysis examines the direct and indirect effects of Organizational Citizenship Behavior of Teachers (OCBT) on Total Quality Management (TQM) through the mediating roles of School Culture (SC) and Work Engagement (WE). This conceptual framework consists of five structural paths that explain how teachers' citizenship behavior contributes to the quality management practices in schools. Furthermore, path c represents the total effect of the independent variable, OCBT, on the dependent variable, TQM. Meanwhile, path a illustrates the hypothesized relationship of OCBT on the first mediating variable – School Culture (SC). Also, path b shows the direct or indirect effect of school culture on TQM. Additionally, path a2 represents the relationship between OCBT and the second mediating variable – work engagement (WE). Lastly, path b2 presents the direct or indirect effect of work engagement on TQM.

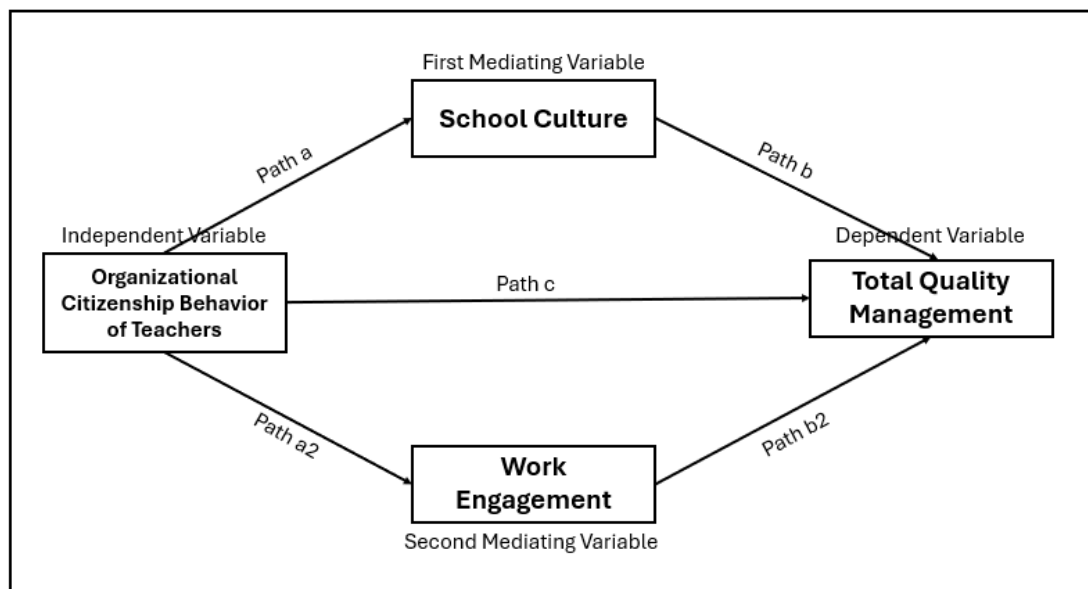


Figure 1: The conceptual framework showing the variables of the study

This study is anchored on Bertalanffy's Systems Theory (1920), which views organizations as interconnected systems where inputs, processes, and outputs work together to produce outcomes. In this study, OCB of teachers serves as the input, school culture and work engagement as internal processes, and TQM as the outcome. This holistic view is supported by Elujekwute *et al.* (2022), who emphasized the interdependence of leadership, behavior of teachers, and organizational conditions in school effectiveness. Moreover, the study is supported by TQM Theory (Deming, 1982), which highlights continuous improvement, customer focus, and leadership commitment, with leadership playing a vital role in sustaining quality practices (Tassanaekjit & Akkawanitcha, 2021; Yadeta *et al.*, 2022; Millado *et al.*, 2021). OCB Theory (Organ, 1990) also explains how teachers' voluntary behaviors promote collaboration, efficiency, and organizational effectiveness (Ma *et al.*, 2021), while Work Engagement Theory (Khan, 1990) highlights how vigor, dedication, and psychological involvement support organizational improvement (Guhao & Alutaya, 2024). Taken together, these theories establish that TQM results from the interaction of behavioral and organizational factors. Thus, OCB of teachers, school culture, and work engagement provide complementary explanations of how quality management can be strengthened and sustained in public schools.

Despite the recognized importance of TQM in improving educational quality, research examining its organizational antecedents remains fragmented. Most studies have investigated OCB of teachers, school culture, work engagement, and TQM independently or through simple bivariate relationships rather than integrating these variables into a single structural model (Silva & Matos, 2022; Anastasiou & Ntokas, 2024). Furthermore, empirical studies in TQM in education have emphasized leadership, continuous improvement, and customer focus while giving limited attention to teachers'

voluntary behaviors and organizational mechanisms that may explain successful TQM implementation (Anastasiou & Ntokas, 2024; Andary *et al.*, 2024). Moreover, this gap is particularly evident in the Philippine basic education setting, where studies have reported that school improvement and quality management initiatives continue to be constrained by leadership, organizational, and resource-related challenges (Reyes *et al.*, 2022), highlighting the need for an integrated model that examines how OCBT influences TQM through the mediating roles of school and work engagement. Apparently, to address such gaps, the present study developed and tested a dual-mediation model using structural equation modeling with path analysis to determine whether school culture and work engagement mediate the relationship between OCBT and TQM among public elementary school teachers in Region XI. Hence, this study extended previous research by moving beyond isolated connections of variables toward an integrated explanation of behavioral and organizational constructs underlying TQM practices in public schools.

3. Material and Methods

The research procedures and methodologies used in this study are described in this section. The components were data collection methods, statistical analysis, study design, research location, population and sample, research tools, and ethical considerations.

3.1 Research Respondents

The study's respondents were the public elementary school teachers in the Department of Education, Regional Office XI. Region XI, also known as the Davao Region, is located in the southern part of Mindanao, Philippines. The Davao Region comprises five provinces, three component cities, and three independent cities: Davao Oriental, Davao de Oro, Davao del Norte, Davao del Sur, and Davao Occidental. The region has 25,808 public elementary school teachers (Department of Education-Region XI) who were qualified as research respondents. However, the researcher chose only the major divisions: Davao City, Davao de Oro, Davao Oriental, and Davao del Sur. The selection of the big divisions was based on predetermined methodological and practical criteria rather than convenience alone. Moreover, the selection considered the relatively large population of public elementary school teachers, the geographic distribution within the region, the availability of an adequate sampling frame, and the feasibility of securing access for data collection. Consequently, Litwok *et al.* (2023) emphasized that systematic approaches for selecting educational districts and schools can improve the generalizability of findings, while Stratton (2024) noted that site selection should be guided by clearly defined attributes relevant to the research objectives. Additionally, the researcher used the Raosoft sample size calculator, which suggests 385 respondents. However, this study included a maximum of 400 public elementary school teachers as respondents.

Furthermore, the Raosoft sample size calculator was used to identify the number of respondents for this study. The Raosoft sample size calculator recommended a minimum of 385 respondents, based on a 95% confidence level, a 5% margin of error, and a 50% response distribution. The researcher increased the sample size to 400 respondents to improve statistical power, enhance the precision of the parameter estimates, and accommodate possible incomplete responses. Accordingly, Kline (2023) suggested that a larger sample size is recommended for a structural equation model; this study utilized path analysis to obtain more stable and reliable estimates. In this regard, Marton Kovacs *et al.* (2022) also highlight that web-based applications for sample size estimation help researchers select appropriate procedures and justify their sample sizes, addressing the common difficulty in manual computation. Additionally, Naing *et al.* (2022) explain that sample size determination relies on key statistical parameters such as confidence level, precision (margin of error), variability, and population size.

In this study, stratified random sampling was employed, with the four selected divisions serving as the strata. The required number of respondents was allocated to each stratum based on the corresponding teacher population, and eligible public elementary school teachers were randomly selected within each division to ensure appropriate representation of the study population. Accordingly, Hair *et al.* (2022) stated that, in educational research, stratified random sampling is appropriate when analyzing mediation models involving school variables, as it ensures representation across categories or units. Doretta *et al.* (2022) further attest that stratified sampling improves the efficiency of mediation analysis by enhancing parameter estimation in both the mediator and outcome models, yielding more precise and less biased estimates than simple random sampling. Hence, to obtain this adequate sample size, 400 research respondents were surveyed. Mediation analysis requires moderate to large sample sizes to ensure sufficient statistical power, as small samples tend to yield unstable and biased estimates of indirect effects; thus, sample sizes of 200 to 500 or more are generally recommended for obtaining reliable and valid mediation results (Sim *et al.*, 2022).

Furthermore, an inclusion criterion is used to identify eligible respondents for this study. Qualified respondents should be public elementary school teachers in Region XI, regardless of rank in the plantilla item, provided they are teaching in a public school and have at least 1 year of teaching experience. Thus, teachers who are employed full-time and hold positions such as Teacher I-III and Master Teachers I-IV with permanent status in DepEd are qualified to participate in this study. Also, public elementary school teachers of various gender orientations are welcome to participate in this study. On the other hand, teachers who do not have regular or permanent plantilla items; substitute teachers; newly hired teachers; Head teachers; or Principals who are not in their first year of teaching service in a public school and are not within the jurisdiction of DepEd Region XI are excluded from this study.

The study explicitly focused on public elementary school teachers in Davao Region. Their participation in this study is further deemed voluntary. Consequently, if

qualified research respondents intend to withdraw from the survey of this study, they have the right to do so. Also, their withdrawal from this study does not impose any penalties or violations related to their job as a public-school teacher, nor does it affect their status for any promotion or career progression they deserve. Moreover, The selection of the Davao Region (Region XI) as the study locale is justified by the fact that Total Quality Management (TQM) in basic education is inconsistently implemented and not fully institutionalized

3.2 Materials and Instrument

The study used four validated instruments to examine the research variables: organizational citizenship behavior of teachers (OCBT), total quality management (TQM), school culture (SC), and work engagement (WE). These research instruments are adapted and modified to fit the context of the research respondents. The total quality management instrument is adapted from Al-Abdali (2021). This tool consists of a 20-item Likert Scale with the following indicators: leadership commitment, process management, continuous improvement, and customer focus. The adapted organizational citizenship behavior tool with 24 items is based on Podsakoff, MacKenzie, Moorman, and Fetter (1990), who examined five indicators: altruism, conscientiousness, civic virtue, courtesy, and sportsmanship. Meanwhile, the school culture instrument, which has 17 items, is based on the Wagner and Masden-Copas' (2002) School Culture Triage Survey (SCTS), which assessed three components, namely: professional collaboration, affiliative collegiality, and self-determination/ efficacy. Moreover, the work engagement tool, a 17-item Likert Scale, measured the following indicators: vigor, dedication, and absorption, which are adapted from the Utrecht Work Engagement Scale developed by Schaufeli and Bakker (2003). Data were collected using structured questionnaires, with all instruments demonstrating excellent reliability coefficients ($\alpha > 0.90$). All survey tools used a 5-point Likert scale to measure responses.

The research instrument underwent validation by six experts, yielding a high average score of 4.76, indicating strong content validity. Furthermore, the pilot test results indicate that the instruments used in the study demonstrate excellent internal consistency and reliability across all major variables. Specifically, Organizational Citizenship Behavior obtained a Cronbach's alpha of .950, School Culture recorded .965, Work Engagement showed .944, and Total Quality Management yielded .975, all of which exceed the commonly accepted threshold of .70 for reliability. These high alpha values suggest that the items within each scale are highly consistent and effectively measure their respective constructs. Moreover, the 50 respondents who participated in the pilot test were excluded from the final sample of this study. Overall, the results confirm that the research instruments are reliable and suitable for data collection, ensuring accuracy and consistency in measuring the study's key variables.

Likewise, the mean score were interpreted as follows: 4.20–5.00 = Very High, indicating that the variable is strongly manifested or consistently practiced; 3.40–4.19 =

High, indicating that the variable is frequently manifested or practiced; 2.60–3.39 = Moderate, indicating that the variable is moderately manifested or practiced; 1.80 – Low, demonstrating that the variable is seldom manifested or practiced; and 1.00 – 1.179 = Very Low, showing that the variable is minimally or not manifested or practiced.

3.3 Research Design and Procedure

This research employed a non-experimental quantitative design, using descriptive analysis and correlational techniques to collect evidence, concepts, details, and knowledge specific to the study. Salmon's (2023) methodological review explains that non-experimental quantitative research involves observing variables as they occur naturally, without manipulation or intervention, thereby distinguishing it from experimental designs. In this study, the variables were not manipulated, and the research locale's context was not controlled. Specifically, this study employed structural equation modeling (SEM) with path analysis. Also, SEM includes the statistical method of path analysis.

In this regard, path analysis was used as a statistical tool in the study. Quines and Maguan (2023) also mentioned that the main goal of path analysis is to compare the strength of direct and indirect relationships between variables. Relative to this, path analysis is suited for this study because it enables the simultaneous examination of the direct and indirect relationships among Organizational Citizenship Behavior of Teachers (OCBT), School Culture (SC), Work Engagement (WE), and Total Quality Management (TQM), particularly in testing the mediating effects of SC and WE on TQM. Thus, path analysis is used to model and test direct and indirect relationships among variables, particularly in complex systems involving mediators and multiple pathways. It is a core component of SEM that helps explain interrelationships among constructs (Harris & Gleason, 2022).

Furthermore, regarding the mediation criteria, the mediating effects of School Culture (SC) and Work Engagement (WE) were evaluated by examining the significance of the indirect and direct effects of Organizational Citizenship Behavior of Teachers (OCBT) on Total Quality Management (TQM). Full mediation was established when the indirect effect of OCBT on TQM through the mediating variables was significant, while the direct effect of OCBT on TQM was no longer significant. Moreover, partial mediation was established when both the indirect and direct effects were statistically significant. Consequently, no mediation was established when the indirect effect was not statistically significant. Collectively, all mediation effects were assessed at the 0.05 level of significance.

In addition, the study utilized descriptive and inferential statistics to address the research objectives. For instance, mean and standard deviation were used to determine the levels of OCBT, WE, SC, and TQM. Also, the Pearson product-moment correlation coefficient (r) was used to determine the strength, direction and significance of the relationships among OCBT, TQM, SC and WE, with correlation coefficients interpreted

as very (0.00-0.19), weak (0.20-0.39), moderate (0.40-0.59), strong (0.60-0.79), and very strong (0.80-1.00) and significance tested at the 0.05 level. Lastly, SEM with path and mediation analyses was employed to examine the direct and indirect relationships among the variables and to determine whether SC and WE significantly mediated the relationship between OCBT and TQM.

The data collection process was conducted over six months, from October 2025 to March 2026, after securing the necessary approval letters and permissions from the Department of Education Regional Office XI and the Schools Division Offices within the region. The researcher personally distributed the printed questionnaires to public elementary school teachers and provided a brief orientation on the purpose of the study, the procedures for answering the questionnaire, and the voluntary nature of participation by the research respondents. Likewise, the respondents were given sufficient time to complete the questionnaires, after which the researcher personally retrieved the completed research instruments through scheduled visits, with prompt coordination with the school head and contact with school personnel. Upon retrieval, the questionnaires were checked for completeness and consistency. The accomplished responses were then encoded, tabulated, and prepared for statistical analysis. Throughout the distribution and retrieval process, the researcher maintained the confidentiality and anonymity of the research respondents and ensured that the collected data were securely managed and kept in accordance with the approved research protocol from UMERG – Certificate No. UMERG-2025-313.

The study strictly adhered to established research ethics protocols to ensure the protection of participants and the integrity of the research process. Prior to data collection, ethical clearance was obtained from the University of Mindanao Ethics Review Committee (UMERG) under Certification No. 2025-313, confirming that the study complied with the university's ethical standards. The researcher ensured that all procedures aligned with approved guidelines, and data collection commenced only after obtaining this certification. Furthermore, key ethical provisions were observed, including voluntary participation, informed consent, and the assurance of confidentiality and anonymity. Respondents were fully informed of the purpose of the study and were given the freedom to withdraw at any stage without any consequences. No personal identifiers or contact information were collected, and all responses were treated with strict confidentiality. Data gathered from the survey were securely stored in protected files accessible only to the researcher and properly disposed of after the study's completion. Likewise, the researcher upheld academic integrity by properly citing all referenced materials in accordance with APA standards and avoiding any form of plagiarism. Authorship was appropriately acknowledged, including the research adviser's contribution. Throughout the study, no conflict of interest was present, and all ethical considerations were carefully observed to maintain the credibility and trustworthiness of the research.

4. Results and Discussion

The data gathered from the respondents examining the Mediating Roles of School Culture and Work Engagement on the Relationship between Organizational Citizenship Behavior and Total Quality Management in Public Schools are thoroughly presented, analyzed, and interpreted in this section, focusing on the assessment of the levels organizational citizenship behavior of teachers, patterns of school culture, work engagement indicators, total quality management practices, the correlations among these variables, and their corresponding mediation analysis results, all aligned with the previously established research objectives.

4.1 Organizational Citizenship Behavior of Teachers

The data presented in Table 1 reveal that the overall level of Organizational Citizenship Behavior of Teachers (OCBT) is very high, with a mean of 4.57, indicating that teachers consistently demonstrate positive citizenship behaviors. Among the indicators, courtesy obtained the highest mean rating of 4.73, interpreted as very high, suggesting that teachers strongly exhibit respect, consideration, and effective interpersonal relationships in the workplace. In contrast, conscientiousness recorded the lowest mean of 4.42, although still interpreted as very high, indicating that while teachers consistently go beyond minimum expectations, this behavior is comparatively less emphasized than other dimensions. Overall, the results suggest that while all aspects of OCBT are highly evident, interpersonal respect and harmony are most strongly manifested among teachers.

Table 1: Level of Organizational Citizenship Behavior of Teachers

Indicators	SD	Mean	D.E.
Altruism	0.448	4.55	Very High
Conscientiousness	0.451	4.42	Very High
Civic Virtue	0.445	4.54	Very High
Courtesy	0.410	4.73	Very High
Sportsmanship	0.453	4.63	Very High
Overall	0.364	4.57	Very High

The findings reveal that the overall level of Organizational Citizenship Behavior of Teachers (OCBT) is very high, indicating that teachers consistently demonstrate behaviors that go beyond their formal roles and contribute to a positive school environment. The highest rating in courtesy suggests that teachers strongly practice respect, consideration, and proactive efforts to avoid workplace conflict, as reflected in behaviors such as avoiding the creation of problems, being mindful of others' work, and preventing issues with co-teachers. Furthermore, this implies that interpersonal harmony and professionalism are key strengths among teachers, fostering a collaborative and supportive school climate.

On the other hand, conscientiousness, although still very high, had the lowest mean, with relatively lower manifestations that may influence specific behaviors, such as not taking extra breaks, indicating slight variation in strict adherence to rules and personal discipline. Despite this, teachers still demonstrate strong responsibility, as shown by their obedience to school regulations and good attendance. Overall, the results suggest that teachers prioritize positive relationships and cooperation, which strengthens teamwork and school functioning, while still maintaining a high level of commitment to their duties.

The findings of the study align with recent research highlighting the mean scores of these related studies. For instance, Masumbid and Apostol (2024) found that organizational citizenship behavior was very high across all dimensions, particularly courtesy, indicating that teachers consistently demonstrate respectful, cooperative, and proactive behaviors in maintaining positive working relationships. Additionally, the results support the findings of Lañojan and Genuba (2025), revealing a very high level of organizational citizenship behavior among teachers, characterized by strong collaboration, professionalism, positive attitudes, and commitment to continuous improvement, which collectively foster a supportive and effective school environment. Meanwhile, it is imperative to note that the results of the present study, particularly the very high level of courtesy as an indicator of OCB, align with those of Villan and Quines (2025). This further indicates that elementary teachers expressed strong agreement that they are conscious of how their actions affect others' work, respect their colleagues' rights, and make efforts to avoid causing difficulties for them.

4.2 School Culture

The data presented in Table 2 reveal that the overall level of school culture is very high, with a mean of 4.45, indicating that positive cultural practices are strongly evident in the school environment. Among the items, the working together of teachers and non-teaching personnel in developing the school schedule obtained the highest mean rating of 4.58, interpreted as very high, suggesting strong collaboration and shared responsibility among the school personnel. In contrast, predicting and preventing problems rather than reacting and repairing when something is not working recorded the lowest mean of 4.21, although still interpreted as very high, indicating that proactive problem-solving practices are present but relatively less emphasized compared to other aspects. Overall, the results suggest that school culture is highly evident, particularly in collaboration and teamwork, although there is slightly less emphasis on anticipatory and preventive practices.

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Table 2: Level of School Culture

Items	SD	Mean	D.E.
Teachers and non-teaching personnel discuss instructional strategies and curriculum issues.	0.551	4.55	Very High
Teachers and non-teaching personnel work together to develop the school schedule	0.533	4.58	Very High
Teachers and non-teaching personnel are involved in the decision-making process with regard to materials and resources	0.582	4.54	Very High
The student behavior code is a result of collaboration and consensus among school personnel.	0.562	4.52	Very High
The planning and organizational time allotted to teachers and staff is used to plan as collective units/ teams rather than as separate individuals.	0.546	4.55	Very High
Teachers and staff tell stories of celebrations that support the school's values.	0.539	4.52	Very High
Teachers and staff visit/ talk/ meet outside of the school to enjoy each other's company.	0.694	4.33	Very High
It reflects a true "sense" of community	0.590	4.45	Very High
The schedule reflects frequent communication opportunities for teachers and non-teaching personnel.	0.620	4.40	Very High
It supports and appreciates the sharing of new ideas by members of our school	0.548	4.51	Very High
There is a rich and robust tradition of rituals and celebration including holidays, special events and recognition of goal attainment.	0.605	4.43	Very High
When something is not working, the faculty and staff predict and prevent rather than react and repair.	0.678	4.21	Very High
The school members are interdependent and value each other.	0.544	4.43	Very High
The members seek alternatives to problems/ issues rather than repeating what we have always done.	0.597	4.40	Very High
The members seek to define the problem/ issue rather than blame others.	0.609	4.43	Very High
The teachers and non-teaching are empowered to make instructional decisions rather than waiting for supervisors to tell them what to do.	0.624	4.37	Very High
The personnel work here because they enjoy and choose to be here	0.596	4.38	Very High
Overall	0.446	4.45	Very High

The findings demonstrate that school culture is strongly established, reflecting a collaborative, supportive, and value-driven environment. Moreover, the high rating for developing school schedules together highlights shared responsibility, teamwork, and active participation in decision-making and instructional planning. On the contrary, the lower rating in predicting and preventing problems suggests a need to strengthen proactive, preventive problem-solving practices. Collectively, collaboration and collegiality are highly embedded, while a greater emphasis on anticipatory approaches could also improve school effectiveness.

Furthermore, these findings align with the results of Acledan and Torotoro (2025), revealing a very high mean score for school culture. They further note that a well-defined school culture has a significant impact on both the effectiveness of classroom management and a school's ability to recover from challenges. Alongside this, the results of the present study align with those of Guhao and Sioting (2023), revealing a very high level of school culture in public elementary schools. Also, the collaboration between teachers and non-teaching personnel in developing the school schedule for this study mirrors the results. Moreover, this finding aligns with Ismail *et al.* (2022), who found that government schools characterized by a positive school culture tend to be more effective than those with less favorable cultural environments. Thus, such a positive culture, characterized by strong leadership, collaborative teamwork, open communication, and a shared vision, can foster a work environment that empowers teachers and enhances student learning (Lañojan & Genuba, 2025).

4.3 Work Engagement

The data presented in Table 3 reveal that the overall level of work engagement is very high, with a mean of 4.39, demonstrating that teachers are highly engaged in their work. Among the items, considering one's job as challenging obtained the highest mean rating of 4.68, interpreted as very high, suggesting that teachers strongly perceive their work as stimulating and motivating. In contrast, forgetting everything else while working recorded the lowest mean of 4.03, interpreted as high, suggesting that, while teachers are engaged, complete absorption in work is less evident than in other aspects. Overall, the results indicate that work engagement among teachers is evident, particularly in dedication and enthusiasm for their work.

The findings show that teachers demonstrate a very high level of work engagement, indicating strong energy, commitment, and involvement in their work. Considering one's job as challenging suggests that teachers view their work as stimulating and motivating, which is reinforced by related responses such as finding their work meaningful, feeling proud of what they do, and being enthusiastic and inspired in their roles. These results imply that teachers possess a strong sense of purpose and dedication, contributing positively to their performance and persistence, as seen in their ability to remain mentally resilient and continue working despite difficulties.

Table 3: Level of Work Engagement

Items	SD	Mean	D.E.
Feel bursting with energy at work	0.580	4.33	Very High
At my job, I feel strong and vigorous.	0.576	4.36	Very High
Feel like going to work when I get up in the morning.	0.612	4.35	Very High
Can continue working for very long periods at a time.	0.693	4.23	Very High
Am very mentally resilient at my job	0.596	4.37	Very High
Persevere at my work always, even when things do not go well.	0.609	4.40	Very High
Find the work that I do is full of meaning and purpose.	0.526	4.60	Very High
Am enthusiastic about my job.	0.531	4.56	Very High

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Am inspired by my job	0.540	4.56	Very High
Am proud of the work that I do.	0.510	4.66	Very High
Consider my job as challenging.	0.493	4.68	Very High
Feel time flies when I am working	0.608	4.47	Very High
When I am working, I forget everything else around me	0.845	4.03	High
Feel happy when I am working intensely.	0.727	4.23	Very High
Immerse in my work.	0.613	4.33	Very High
Get carried away when I am working	0.724	4.18	High
Am difficult to detach myself from my job.	0.791	4.05	High
Overall	0.445	4.39	Very High

However, the lowest-rated item, forgetting everything else while working, along with similar items such as difficulty detaching from work and getting carried away, indicates that full absorption is comparatively less evident. This suggests that while teachers are highly dedicated and energetic, their level of deep immersion in work is slightly lower. Overall, the results indicate that work engagement is strong, particularly in dedication and vigor, while absorption may still be strengthened further.

These findings support the notion posited by Gozon & Yango (2023) that a teacher with a high level of work engagement considers their job as inspiring and stimulating. This further means that teachers exhibit exceptionally high work engagement, characterized more by strong dedication and a sense of purpose than by complete cognitive absorption in their tasks. In addition, the findings of this study align with recent studies (Lopez & Guhao, 2025; Olang & Malonzo, 2026; Nini & Guhao, 2026), demonstrating very high overall ratings among public-school teachers. This also indicates that all dimensions of work engagement were likewise rated very highly, suggesting that teachers remain enthusiastic and continue to persevere even when challenges arise.

4.4 Total Quality Management

The data presented in Table 4 reveal that the overall level of Total Quality Management (TQM) is very high, with a mean of 4.51, indicating that quality management practices are strongly manifested in the schools. Among the dimensions of TQM, customer focus obtained the highest mean rating of 4.55, interpreted as very high, suggesting that schools place strong emphasis on addressing the needs and expectations of stakeholders or customers. On the other hand, process management recorded the lowest mean of 4.48, although still interpreted as very high, indicating that while structured processes are consistently implemented, they are relatively less emphasized compared to other dimensions. Overall, the findings show that all TQM dimensions are highly practiced, with greater focus on stakeholder satisfaction.

Table 4: Level of Total Quality Management

Indicators	SD	Mean	D.E.
Leadership	0.526	4.51	Very High
Process Management	0.521	4.48	Very High
Continuous Improvement	0.505	4.50	Very High
Customer Focus	0.492	4.55	Very High
Overall	0.456	4.51	Very High

The findings indicate that Total Quality Management (TQM) is strongly practiced in schools, reflecting a well-established system of quality-oriented processes and stakeholder-centered practices. The highest-rated dimension, customer focus, highlights that schools consistently prioritize stakeholders' needs by aiming for high stakeholder satisfaction. This suggests that schools are highly responsive and service-oriented, ensuring that parents, learners, and other stakeholders are actively considered in decision-making. Meanwhile, process management, although still very high, obtained the lowest mean, indicating that receiving the needed data and reporting at the right time needs to be enhanced and strengthened. Moreover, this implies a need to further strengthen internal systems and procedural consistency to support quality outcomes. Overall, the results show that while all TQM dimensions are highly evident, schools place stronger emphasis on stakeholder satisfaction than on internal process optimization.

The findings underscore the importance of TQM implementation in education, particularly in public elementary schools. Reflecting on these results, TQM is considered a multi-dimensional system in which all core dimensions are implemented simultaneously and with strong emphasis, contributing to organizational excellence (Nguyun *et al.*, 2022). Moreover, Agotilla and Agustin (2022) noted that high levels of commitment to quality, customer satisfaction, and continuous improvement demonstrate robust and mature TQM implementation. Moreover, the study by Nini and Guhao (2026) revealed that the organization demonstrates a consistently high level of total quality management, effectively prioritizing client satisfaction, employee needs, continuous process improvement, and technological advancement. Furthermore, the very high level of customer focus aligns with the findings of Texeira-Quiros *et al.* (2022), which highlight that customer focus is consistently reported as a central and highly emphasized dimension of TQM, ensuring alignment with stakeholder needs and satisfaction. These studies collectively connote the strong and recognized importance of TQM implementation in the academe.

4.5 Relationships between Levels of Organizational Citizenship Behaviors of Teachers and School Culture

Table 5 shows a significant relationship between teachers' Organizational Citizenship Behavior (OCBT) and school culture in public schools. The overall result, with a correlation coefficient of $r = .739$ and a p-value of 0.000, indicates a strong positive relationship. In line with this, the null hypothesis stating that there is no significant

relationship between OCBT and school culture is rejected. Based on the obtained correlation coefficient of 0.739, there is a strong positive relationship, and the p-value of 0.000, which is less than the 0.05 level of significance, confirms that the relationship between OCBT and school culture is statistically significant.

Table 5: Significance on the Relationship between Levels of
Organizational Citizenship Behavior of Teachers and School Culture

Organizational Citizenship Behavior of Teachers	School Culture Overall
Altruism	.583* (0.000)
Conscientiousness	.600* (0.000)
Civic Virtue	.678* (0.000)
Courtesy	.532* (0.000)
Sportsmanship	.653* (0.000)
Overall	.739* (0.000)

*Significant at 0.05 significance level.

The findings imply that fostering OCBT is essential for cultivating a positive and supportive school culture. Since OCBT demonstrated a strong positive link with school culture, school leaders must implement policies and professional development initiatives that encourage voluntary behaviors such as participation in school activities, collaboration, professionalism, and mutual support. Furthermore, creating avenues for shared decision-making, recognizing teachers' willingness to serve, and promoting collegial relationships among co-teachers can strengthen the school's organizational culture. Generally, this also means that when teachers demonstrate positive behaviors such as helping others, being responsible, participating in school activities, showing respect, and maintaining a positive attitude, the school culture also becomes more positive and supportive.

Accordingly, this finding aligns with the studies by Toren and Cetin (2022) and Sugiono and Nurhasan (2025), which reveal that teachers' organizational citizenship behaviors positively and significantly contribute to the development of a positive school culture. Moreover, the findings corroborated the results of Lañojan and Genuba (2025), demonstrating a significant correlation between teachers' organizational citizenship behaviors and school culture. They further expressed that enhancing teachers' organizational citizenship behavior through stronger collaboration, collegial relationships, and greater self-efficacy can contribute to a more positive school culture.

Furthermore, among the indicators, civic virtue and sportsmanship showed the strongest relationships with school culture, suggesting that active participation in school

affairs and maintaining professionalism contribute greatly to creating a healthy school environment. The findings imply that teachers' willingness to go beyond their required duties helps strengthen collaboration, trust, and unity within the school. This supports the idea that positive teacher behaviors play an important role in developing a strong and effective school culture.

Likewise, this finding supports the claim by Ngo Ndjama and Van Der Westhuizen (2023), who argue that a participative school culture strengthens teachers' organizational citizenship behavior, particularly civic virtue and sportsmanship, by promoting collaboration, active involvement, and positive attitudes toward school-related challenges. Additionally, the study of Shie and Chang (2022) corroborated the present findings of the study, indicating that positive school leadership and organizational culture strengthen teachers' organizational citizenship behaviors, particularly civic virtue and sportsmanship, by encouraging active participation in school activities, cooperation, and positive attitudes in dealing with workplace challenges.

4.6 Relationships between School Culture and Total Quality Management of Public Schools

As revealed in Table 6, school culture has a significant positive relationship with Total Quality Management (TQM) in public schools. The overall result, with a correlation coefficient of 0.712 and a p-value of 0.000, indicates a strong relationship: a positive and supportive school culture is associated with better implementation of quality management practices in schools. Based on this finding, the null hypothesis that there is no significant relationship between school culture and TQM is rejected. The correlation coefficient of 0.712 shows a strong positive relationship. At the same time, the p-value of 0.000, which is less than the 0.05 significance level, confirms that the relationship between school culture and TQM is statistically significant.

Table 6: Significance on the Relationship between Levels of School Culture and TQM

School Culture	Total Quality Management				Overall
	Leadership	Process Management	Continuous Improvement	Customer Focus	
Overall	.583* (0.000)	.680* (0.000)	.640* (0.000)	.640* (0.000)	.712* (0.000)

*Significant at the 0.05 significance level.

The findings imply that strengthening school culture is an essential element for the successful TQM implementation in public schools. Since school culture revealed a strong positive relationship with TQM, school leaders should foster professional collaboration, collegial relationships, and teacher self-efficacy through shared decision-making, teamwork, and continuous professional development. Moreover, creating a supportive and collaborative work environment can improve teachers' commitment to quality management practices, thereby enhancing leadership commitment, process

management, continuous improvement, and customer focus. Apparently, educational leaders and policymakers should prioritize initiatives that build a positive school culture as a strategic mechanism in achieving sustained school improvement and effective quality management practices.

Furthermore, this overall correlation parallels Jani (2025), which shows that schools with strong quality-oriented cultures demonstrate higher student satisfaction and better perceived school quality, indicating that school culture enhances customer focus and continuous improvement in TQM. Moreover, among these areas, process management showed the strongest relationship, suggesting that schools with a healthy culture are more organized and effective in managing school processes and operations. This finding corroborated the results of Parveen *et al.* (2024), suggesting that a positive school culture strengthens process management in TQM by supporting effective monitoring, feedback systems, evaluation practices, and continuous improvement within the school organization. In this sense, the findings imply that when teachers and school leaders share positive values, teamwork, trust, and collaboration, schools are better able to maintain high-quality services and continuously improve educational practices. This further emphasizes the importance of building a strong school culture to support effective school management and overall school performance.

4.7 Relationships between Levels of Organizational Citizenship Behaviors of Teachers and Work Engagement

Table 7 shows a significant positive relationship between teachers' Organizational Citizenship Behavior (OCBT) and work engagement. The overall result, with a correlation coefficient of 0.732 and a p-value of 0.000, indicates a strong relationship, meaning that teachers who willingly take on extra responsibilities and demonstrate positive behaviors in school tend to be more engaged in their work. Also, based on the findings, the null hypothesis stating that there is no significant relationship between OCBT and work engagement is rejected. The correlation coefficient of 0.732 indicates a strong positive relationship; however, the p-value of 0.000, which is below the 0.05 significance level, confirms that the relationship between OCBT and work engagement is statistically significant.

Table 7: Significance on the Relationship between Levels of Organizational Citizenship Behavior of Teachers and Work Engagement

Organizational Citizenship Behavior of Teachers	Work Engagement Overall
Altruism	.618* (0.000)
Conscientiousness	.682* (0.000)
Civic Virtue	.631* (0.000)
Courtesy	.481*

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	(0.000)
Sportsmanship	.600* (0.000)
Overall	.732* (0.000)

*Significant at 0.05 significance level.

Moreover, the findings reveal that all indicators of OCBT are significantly related to work engagement, with conscientiousness showing the strongest relationship, followed by civic virtue, altruism, sportsmanship, and courtesy. This further suggests that teachers who are responsible, cooperative, involved in school activities, and supportive of their colleagues are more likely to feel motivated, dedicated, and committed to their work. Alongside this, the overall results suggest that teachers who willingly go beyond their actual and prescribed duties are more likely to be energetic, dedicated, and fully engaged in their work.

Additionally, the findings entail that promoting organizational citizenship behavior among teachers can enhance their work engagement, leading to a more motivated, dedicated, and committed teaching workforce. Because conscientiousness displayed the strongest relationship with work engagement, school leaders must cultivate responsibility, dependability, and initiative through recognition programs, collaborative professional learning communities such as the Learning Action Cells (LAC), and opportunities for active participation in school activities. Furthermore, encouraging teachers to support colleagues voluntarily, participate in school improvement initiatives, and contribute beyond their prescribed duties can enhance their vigor, dedication, and engagement at work. Consequently, school leaders and administrators should integrate strategies that foster OCB into school management and professional development programs to sustain high levels of teacher engagement and improve overall school performance.

This result also aligned with Farisi *et al.* (2024), demonstrating a positive and significant relationship between work engagement and organizational citizenship behavior. Likewise, the present finding supports the study by Jufrizen, Khair, and Sari (2023), which revealed that work engagement has a significant positive relationship with organizational citizenship behavior, indicating that highly engaged employees are more likely to engage in voluntary behaviors such as helping others and contributing beyond their formal responsibilities. In parallel, Chen *et al.* (2024) found a strong positive relationship between organizational citizenship behavior and work engagement, indicating that employees with higher levels of vigor, dedication, and absorption are more likely to engage in helping behaviors, civic virtue, and conscientiousness.

Furthermore, the study of Nguyen *et al.* (2025) substantiated the present study, indicating that employees with high vigor, dedication, and absorption are more likely to exhibit altruism, courtesy, and civic virtue. Complementing the results of the present study, these findings imply that highly engaged teachers tend to become more active,

cooperative, and committed in contributing beyond their formal responsibilities, thereby strengthening positive organizational behavior within the school environment. Thus, higher work engagement strengthens organizational citizenship behavior, as engaged employees are more likely to demonstrate positive voluntary behaviors and contribute beyond their formal responsibilities (Park & Kim, 2024).

4.8 Relationships between Levels of Work Engagement and Total Quality Management

Table 8 revealed that work engagement has a significant positive relationship with Total Quality Management (TQM) in public schools. The overall result, with a correlation coefficient of 0.632 and a p-value of 0.000, indicates a strong relationship: teachers who are more engaged, dedicated, and enthusiastic in their work also contribute to better quality management practices in schools. Based on the findings, the null hypothesis that there is no significant relationship between work engagement and TQM is rejected. The correlation coefficient of 0.632 indicates a strong positive relationship, and the p-value of 0.000 confirms that the relationship is statistically significant.

Consequently, the findings imply that improving teachers' work engagement is essential for strengthening the implementation of TQM in public schools. Also, because work engagement demonstrated a strong positive relationship with TQM, school leaders should create a supportive work environment that promotes teachers' vigor, dedication, and absorption through professional development, recognition programs, participative leadership, and employee well-being initiatives. By promoting high levels of engagement, schools can encourage teachers to participate actively in quality improvement efforts, maintain high-performance standards, and sustain continuous improvement practices. Additionally, educational leaders and policymakers should consider teacher engagement a key strategy for achieving effective quality management and long-term school excellence.

Table 8: Significance on the Relationship between Levels of Work Engagement and Total Quality Management

Work Engagement	Total Quality Management				Overall
	Leadership	Process Management	Continuous Improvement	Customer Focus	
Overall	.516* (0.000)	.571* (0.000)	.602* (0.000)	.567* (0.000)	.632* (0.000)

*Significant at 0.05 significance level.

From the overall results, it can be inferred that teachers who are more vigorous, dedicated, and absorbed in their work are more likely to contribute to effective quality management initiatives and continuous improvement mechanisms in schools. Moreover, this result is consistent with the study by Vanessa *et al.* (2023), which reveals that work engagement significantly enhances Total Quality Management by improving employee

involvement, commitment to quality standards, and continuous improvement practices. Additionally, the present finding substantiated the results of Gepaya and Tan (2023) and Casteleiro and Mendes (2022), demonstrating a positive relationship between work engagement and Total Quality Management, indicating that highly engaged employees contribute to the effective implementation of quality management practices.

Meanwhile, work engagement is significantly related to leadership, process management, continuous improvement, and customer focus. Among these indicators, continuous improvement obtained the highest relationship, suggesting that engaged teachers are more willing to support innovation, improvement, and effective school practices. Hardworking and focused employees are the secret to keeping a company improving. Because they care about their roles, they actively participate in teamwork and follow through on quality checks to make everyday processes better ([Boikanyo & Heyns, 2019](#)). Also, the findings imply that when teachers are emotionally connected and committed to their work, they become more active in helping the school achieve quality education and effective management. Moreover, employees involved in improvement initiatives demonstrate stronger organizational engagement and commitment (Hidayat & Zami, 2022). This further highlights the importance of promoting teacher engagement to strengthen overall school performance and continuous school improvement. Thus, work engagement contributes to the continuous enhancement of work processes and organizational outcomes (Yao, Qiu, Yang, Han, & Li, 2022).

4.9 Relationships between Levels of Citizenship Behavior of Teachers and Total Quality Management

Table 9 shows that Organizational Citizenship Behavior of teachers (OCBT) has a significant positive relationship with Total Quality Management (TQM) in public schools. The overall result has a correlation coefficient of 0.619 and a p-value of 0.000. In this regard, the null hypothesis stating that there is no significant relationship between OCBT and TQM is rejected. The obtained correlation coefficient of 0.619 indicates a strong positive relationship. Meanwhile, the p-value of 0.000, which is less than the 0.05 significance level, confirms that the relationship is statistically significant.

Furthermore, the findings imply that fostering organizational citizenship behavior among teachers is a practical strategy for strengthening TQM in public schools. Since OCBT showed a strong positive relationship with TQM, school leaders should foster a culture that inspires voluntary behaviors such as cooperation, professionalism, responsibility, and active participation in school improvement initiatives. Likewise, acknowledging teachers' extra-role contributions, providing opportunities for collaborative decision-making, and supporting professional growth can boost these positive behaviors. Moreover, cultivating organizational citizenship behavior among teachers can enhance leadership commitment, process management, continuous improvement, and customer focus, thereby contributing to more effective quality management and sustained school excellence.

Table 9: Significance on the Relationship between Levels of Organizational
Citizenship Behavior of Teachers and Total Quality Management

Organizational Citizenship Behavior of Teachers	Total Quality Management				Overall
	Leadership	Process Management	Continuous Improvement	Customer Focus	
Altruism	.410* (0.000)	.449* (0.000)	.463* (0.000)	.411* (0.000)	.486* (0.000)
Conscientiousness	.427* (0.000)	.451* (0.000)	.501* (0.000)	.499* (0.000)	.525* (0.000)
Civic Virtue	.480* (0.000)	.534* (0.000)	.525* (0.000)	.493* (0.000)	.570* (0.000)
Courtesy	.370* (0.000)	.376* (0.000)	.388* (0.000)	.406* (0.000)	.431* (0.000)
Sportsmanship	.470* (0.000)	.457* (0.000)	.527* (0.000)	.467* (0.000)	.538* (0.000)
Overall	.524* (0.000)	.550* (0.000)	.584* (0.000)	.552* (0.000)	.619* (0.000)

*Significant at the 0.05 significance level.

Meanwhile, all dimensions of OCB—altruism, conscientiousness, civic virtue, courtesy, and sportsmanship—are significantly related to all areas of TQM, including leadership, process management, continuous improvement, and customer focus. This finding parallels several recent studies confirming that organizational citizenship behavior (OCB) directly drives Total Quality Management (TQM). Specifically, [Siswadhi et al. \(2023\)](#) and [Zhang et al. \(2023\)](#) established that OCB dimensions positively influence TQM, while [Huynh et al. \(2024\)](#) proved that all five OCB traits—altruism, conscientiousness, sportsmanship, courtesy, and civic virtue—strongly support TQM-aligned performance systems. Hence, strong organizational citizenship behaviors (helping, civic virtue, sportsmanship) improve quality management processes and continuous improvement systems (Lim, Hsien, Ooi, Foo, & Tan, 2024).

Alongside this, the present finding aligns with [Samad et al. \(2024\)](#), who demonstrate that organizational citizenship behavior, particularly conscientiousness and civic virtue, is significantly associated with TQM, as evidenced by employees' voluntary compliance with procedures and active participation in quality improvement initiatives. On the other hand, courtesy shows the weakest but still significant relationship ($r = .431$), implying that even simple, respectful, and considerate behaviors play a role in improving school quality. Moreover, even when less dominant than other dimensions, courtesy still plays a supportive role in sustaining quality systems (Lim et al., 2024).

Overall, the findings suggest that when teachers consistently go beyond their basic duties and demonstrate positive workplace behaviors, they strengthen leadership, improve school processes, support continuous improvement, and enhance customer focus in schools. Additionally, this shows that high-quality systems depend on consistent, disciplined, and participative workforce behavior (Ibrahim et al., 2023). This

further highlights the importance of encouraging teachers' organizational citizenship behavior to achieve better TQM in public schools.

4.10 Mediating Effects: Path Analysis

The study conducted a path analysis to examine the mediating effects of School Culture (SC) and Work Engagement (WE) on the relationship between Organizational Citizenship Behavior of Teachers (OCBT) and Total Quality Management (TQM) in public schools. Presented in Table 10 are the results of the path analysis showing the mediating effects of School Culture (SC) and Work Engagement (WE) on the relationship between Organizational Citizenship Behavior of Teachers (OCBT) and Total Quality Management (TQM).

Table 10: Mediating Effect: Path Analysis

Path	Estimates		SE	C.R.	P
	Unstandardized	Standardized			
OCBT → SC	.905	.739	.041	21.932	***
OCBT → WE	.895	.732	.042	21.465	***
SC → TQM	.496	.493	.051	9.687	***
OCBT → TQM	.123	.100	.077	1.592	.111
WE → TQM	.227	.225	.051	4.471	***

The results indicate that OCBT has a strong and significant influence on School Culture (SC), as revealed by a standardized estimate of 0.739, suggesting a strong positive influence, with a critical ratio of 21.932 and a p-value of less than 0.001 (***), indicating statistical significance. This result further stressed that the null hypothesis, stating that OCBT has no significant influence on school culture, is rejected. Hence, based on the standardized estimate of 0.739, the critical ratio of 21.932, and the p-value of 0.001, OCBT has a strong, significant influence on school culture, thereby rejecting the null hypothesis. In addition, this finding implies that teachers who demonstrate positive voluntary behaviors such as cooperation, professionalism, and active participation help create a more supportive, collaborative, and productive school environment. This finding aligns with Hsieh, Chien, Yen, and Li (2022), who emphasize that teachers with higher organizational citizenship behavior contribute to stronger collaboration, positive relationships, active participation, and organizational harmony, which help create a healthier and more supportive school culture. Additionally, Gamliel and Shapira-Lishchinsky (2023) highlight that positive citizenship behaviors foster collaborative school norms and a sense of shared responsibility.

Alongside this, the path analysis results further reveal that OCBT has a strong and significant influence on Work Engagement (WE), as demonstrated by a standardized estimate of 0.732 (strong positive), a critical ratio of 21.465, and a p-value of less than 0.001 (***), indicating statistical significance. Based on this, the null hypothesis that OCBT has no significant influence on work engagement is rejected. On the other hand, based on the

standardized estimate of 0.732, the critical ratio of 21.465, and the p-value of less than 0.001, OCBT has a strong, significant influence on work engagement, rejecting the null hypothesis. This finding further indicates that teachers who exhibit positive voluntary behaviors significantly contribute to building a positive school environment and higher engagement at work.

In parallel, Malik *et al.* (2023) demonstrated that organizational citizenship behavior significantly boosts work engagement. Specifically, they found that engaging in extra-role behaviors builds an employee's psychological capital and organizational commitment, which in turn fuels and sustains their active engagement on the job. Relatedly, Saengchai and Sawasdee's (2018) study is substantiated by the present results, which show that a teacher's OCB directly predicts their work engagement. Specifically, the OCB dimensions of conscientiousness (volunteering for extra duties) and courtesy serve as the explicit structural drivers that keep teachers energized and dedicated. On the other hand, the current findings contrast with Farisi *et al.* (2024) and Park and Kim (2024), who found that work engagement significantly impacts OCB. In this study, however, OCBT was revealed to have a highly significant influence on work engagement.

Correspondingly, regarding the mediators, school culture significantly affects TQM, as indicated by a standardized estimate of 0.493, a critical ratio of 9.687, and a p-value of less than 0.001 (**), indicating a statistically significant influence. This result indicates rejection of the null hypothesis and acceptance of the alternative hypothesis, which claims that school culture significantly influences TQM. Furthermore, this result aligns with the claim of Parveen *et al.* (2024), who found that school culture significantly mediates the relationship between quality management practices and school performance, indicating that TQM initiatives are substantially more effective when supported by a positive organizational culture. Thus, school culture serves as the foundational structural pillar for implementing TQM principles in complex educational environments (Gkotsis, 2026).

Likewise, Work Engagement significantly influences TQM, as demonstrated by the standardized estimate of 0.225, a critical ratio of 4.471, and a p-value of less than 0.001 (**), indicating a statistically significant influence on the dependent variable – TQM. Considering this, the null hypothesis stating that work engagement does not significantly influence TQM is rejected. Based on the standardized estimate of 0.225, the critical ratio of 4.471, and a p-value of less than 0.001, the results indicate that work engagement significantly influences TQM, thereby accepting the alternative hypothesis.

Consequently, this finding is consistent with Els and Meyer (2025), confirming that TQM cannot be viewed solely as a technical checklist; rather, work engagement is a foundational behavioral mechanism that directly influences and enhances an organization's capacity to deploy and sustain TQM frameworks successfully. Also, the present finding complements the assertion by Boikanyo and Heyns (2019), demonstrating that organizations with highly engaged workforces inherently minimize errors, adhere to process management rules more effectively, and drive customer satisfaction. In

totality, the mediating effects of school culture and work engagement signify that both a positive school culture and highly engaged teachers help improve the implementation of quality management practices in schools.

However, the direct effect of Organizational Citizenship Behavior of teachers (OCBT) on TQM is not significant, with a standard estimate of 0.100, a critical ratio of 1.592, and a p-value of 0.111 ($p = .111$), suggesting that OCBT alone does not directly improve TQM. Based on this result, OCBT does not significantly and directly influence TQM. This would mean that the null hypothesis is not rejected because the evidence is insufficient to establish a statistically significant effect of OCBT on TQM. Instead, the effect of OCBT becomes meaningful only when it passes through School Culture and Work Engagement. Overall, the findings indicate a full mediation effect. This means that School Culture and Work Engagement fully explain how teachers' positive behaviors lead to better Total Quality Management. In simple terms, teachers' extra efforts improve school quality not directly but by creating a positive school culture and increasing their engagement in their work.

4.11 Total, Direct and Indirect Effects

Presented in Table 11 are the total, direct, and indirect effects of Organizational Citizenship Behavior of Teachers (OCBT) on Total Quality Management (TQM) through the mediating variables under the full mediation model. The results show that the total effect of OCBT on TQM was significant, with an estimate of 0.7747, indicating that OCBT has an overall positive influence on TQM since the confidence interval of 0.6779 and 0.8719 did not overlap with zero. Supporting this, Zhang *et al.* (2024) demonstrate that OCB is not merely a passive by-product of a good workplace but a primary driver that actively builds and sustains TQM. It further justifies the study's finding by showing that TQM systems cannot function optimally without the baseline of voluntary employee cooperation provided by OCB.

On the contrary, the direct effect of OCBT on TQM became non-significant, as revealed by the confidence interval of -0.0152 to 0.2616, which included zero, and by the estimate of 0.1232. This further confirmed the non-significant influence of OCBT on TQM presented in Table 10. Moreover, this result indicates that OCBT no longer directly affects TQM when the mediating variables are included in the model. Consistent with the findings of Subramanian, Srikanth, and Thakur (2022) and Dai *et al.* (2022), the results suggest that the effect of organizational citizenship behavior is mediated by essential organizational mechanisms rather than exerting a direct influence on organizational outcomes.

Table 11: Total, Direct, and Indirect Effects

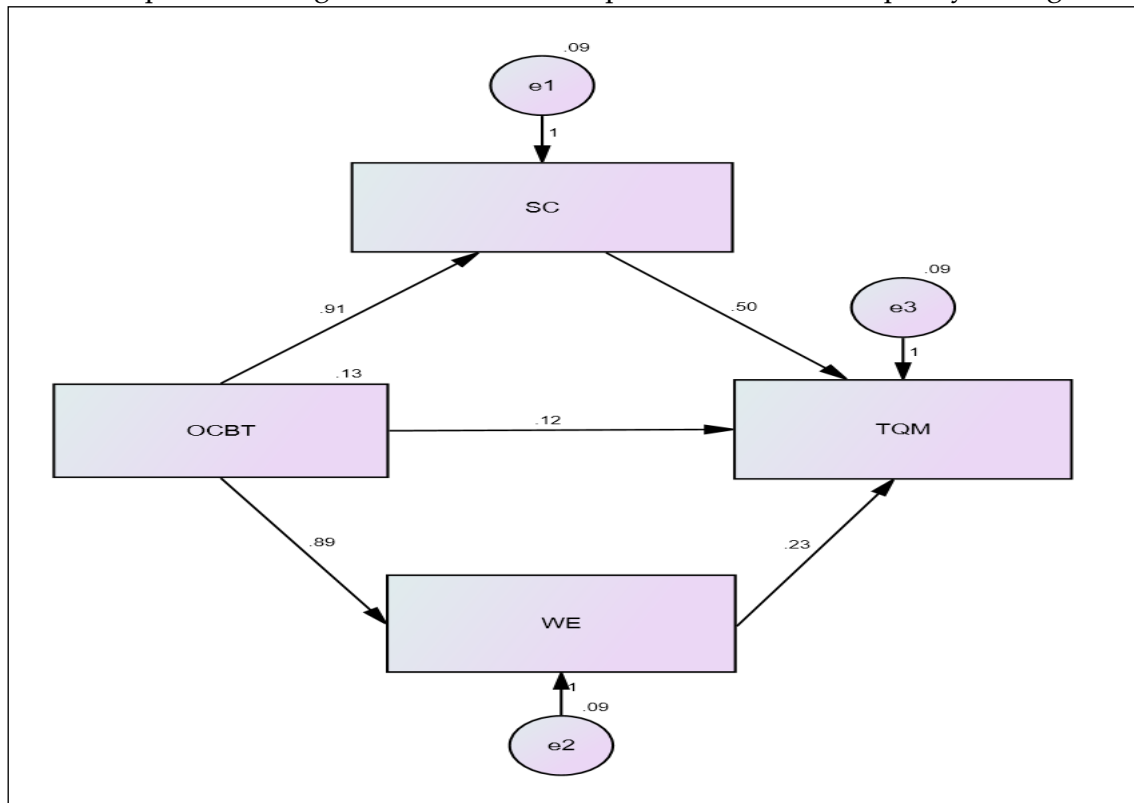
Effect	<i>b</i>	95% CI	
		Lower	Upper
Total	.7747	.6779	.8716
Direct	.1232	-.0152	.2616
Indirect (mediation)	.2461	.0669	.4213

Meanwhile, the indirect effect (mediation) was significant, with an estimate of 0.2461 and a confidence interval of 0.0669 to 0.4213 that did not include zero. This confirms that the relationship between OCBT and TQM is mediated by school culture and work engagement, supporting the presence of full mediation. This further confirms the criteria: full mediation was established when the indirect effect of OCBT on TQM through the mediating variables was significant, whereas the direct effect of OCBT on TQM was not. Consistent with this, Widodo *et al.* (2024) exclaimed that OCB must first be synthesized and absorbed into the institution's collective values (school culture). Once a quality-oriented culture is solidified, it fully carries the effect forward, driving TQM.

Relatedly, Jo and Shin (2025) further explained that voluntary employee behaviors (OCB) must be channelled through focused work engagement (vigor, dedication, and absorption) to build and support a disciplined total quality framework systematically. Thus, the results also confirmed that TQM cannot be directly forced through OCB alone, but must be fully transmitted through an engaged, culturally aligned workplace (Zhang *et al.*, 2024).

The path diagram shows how Organizational Citizenship Behavior of Teachers (OCBT) influences Total Quality Management (TQM) through School Culture (SC) and Work Engagement (WE). The results show that OCBT has a profoundly positive impact on the institution, yielding a very strong positive effect of 0.91 on school culture and a strong positive effect of 0.89 on work engagement. Aligned with this, Toren and Cetin (2022) found that teachers who display organizational citizenship behaviors contribute significantly to the development of a positive school culture by strengthening cooperation, trust, and shared organizational values. Similarly, Sugiono and Nurhasan (2025) reported that teachers' citizenship behaviors significantly predict a collaborative school culture. On the other hand, the strong positive effect of OCBT on work engagement is substantiated by Guhao (2023), who reports that teachers who voluntarily participate beyond their required duties and responsibilities are reported to have higher vigor, dedication, and absorption towards their work. This is also parallel to the study by Lingcob and Quines (2025), which found that teachers exhibiting citizenship behaviors demonstrated significantly greater teamwork and work engagement.

Figure 2: The mediating roles of school culture and work engagement on the relationship between organizational citizenship behavior and total quality management



Legend: IV- Organizational Citizenship Behavior of Teachers (OCBT); DV - Total Quality Management (TQM), MV1 - School Culture (SC), MV2 - Work Engagement (WE).

Moreover, the path diagram also illustrates the significant effect of school culture on TQM. Empirical studies yielded findings consistent with those of the present study. For instance, Anastasiou and Ntokas (2024) concluded that schools with collaborative cultures achieve stronger TQM implementation through teamwork, communication, and shared leadership. Also, Guhao and Sioting (2023) expressed that professional collaboration and collegiality, which are elements of school culture, strengthen school effectiveness and quality improvement initiatives. Likewise, it is presented that teachers' work engagement significantly affects TQM in public schools. Ojieh *et al.* (2025) revealed that TQM continuous improvement practices are enhanced when teachers exhibit high work engagement. Moreover, Joseph *et al.* (2024) stressed that teacher commitment and engagement improve customer focus and organizational performance under TQM. This further demonstrates that when teachers voluntarily display helpfulness and responsibility, they significantly reinforce the school's shared values and increase task involvement.

In turn, both variables serve as positive mediators for total quality management, with school culture exerting a strong positive effect of 0.50 and work engagement contributing a positive effect of 0.23. This suggests that a healthy school culture plays a greater role in improving quality management practices than work engagement,

although both are important contributors. Meanwhile, the direct effect of OCBT on TQM is very weak, with a positive effect of 0.12, indicating that teachers' citizenship behaviors alone do not strongly influence TQM when taken directly. Thus, the direct effect of OCBT on TQM suggests that organizational excellence and TQM rely heavily on the teachers' voluntary behaviors, cooperation, and commitment.

Generally, the findings suggest that organizational citizenship behavior among teachers contributes to improved total quality management by enhancing key school-related factors, such as school culture and work engagement. In simple terms, teachers' positive behaviors alone may not directly improve total quality management unless these behaviors help create a supportive school environment and increase teachers' engagement in their work. This implies that schools should strengthen programs and practices that promote positive school culture and teacher engagement, as these factors are important pathways to better quality management in schools.

5. Recommendations

The findings emphasize the importance of strengthening School Culture and Work Engagement as essential factors in achieving effective Total Quality Management in public schools. Since School Culture showed a stronger influence on Total Quality Management compared to Work Engagement based on the path coefficients, school leaders and administrators should strengthen school culture by establishing regular problem-prevention and problem-solving sessions where teachers and staff identify possible issues, examine their causes, and develop preventive actions rather than merely addressing problems after they occur. They should also strengthen process management to foster TQM implementation by ensuring that school processes are properly documented, standardized, regularly monitored, and periodically reviewed for improvement.

Additionally, teachers should strengthen their conscientiousness by maintaining consistent professional discipline, particularly by adhering to appropriate work schedules and minimizing unnecessary breaks. Furthermore, teachers should sustain work engagement by adopting strategies that promote focused, meaningful work while maintaining healthy boundaries between work and non-work activities. School-based workload planning, protected preparation time, short restorative breaks, and wellness activities may help teachers remain engaged without becoming excessively absorbed in their work. Consequently, DepEd officials may develop and strengthen technical assistance programs focused on process standardization, documentation, monitoring, and continuous review of school processes, while providing schools with appropriate tools and templates for quality management. Also, capacity-building initiatives may likewise address professional accountability, problem prevention, and sustainable teacher engagement.

In addition, future researchers may replicate the study among teachers from other educational levels, regions, or private institutions to examine the consistency and generalizability of the findings across various contexts. They may also investigate other organizational factors, such as transformational leadership, organizational commitment, teachers' work behavior towards innovative teaching, or the integration of technology and artificial intelligence, as possible predictors or mediators of TQM. Lastly, longitudinal and mixed-methods designs may further be used to examine changes over time and provide deeper explorations and explanations of the mechanisms and contextual factors underlying the relationship among OCBT, school culture, work engagement, and TQM.

6. Conclusion

The objective of this study was to determine the mediating roles of School Culture (SC) and Work Engagement (WE) on the relationship between Organizational Citizenship Behavior of Teachers (OCBT) and Total Quality Management (TQM) among public elementary school teachers in Region XI. The findings revealed that OCBT, SC, WE, and TQM were all manifested at a very high level, indicating consistent positive behavior among teachers, a strong and supportive school culture, high work engagement, and well-established quality management practices. Overall, these descriptive findings demonstrate favorable organizational conditions among public elementary schools, providing a strong setting for examining the relationships and mediating effects among the variables.

Furthermore, the results revealed that OCBT was significantly and positively related to SC, WE, and TQM. Likewise, SC and WE were significantly related to TQM, indicating that positive teacher behaviors, supportive school culture, and strong work engagement are connected with better quality management practices. However, the mediation analysis demonstrated that the direct path from OCBT to TQM became non-significant after SC and WE were included in the model, confirming a full mediation effect. Moreover, this indicates that the relationship between OCBT and TQM operates indirectly through school culture and work engagement.

The findings of the study support Bertalanffy's Systems Theory (1920), which posits that schools function as interconnected systems in which organizational and behavioral factors interact to influence outcomes. In this study, Organizational Citizenship Behavior of Teachers served as the input. At the same time, School Culture and Work Engagement functioned as internal processes that influenced the outcome: Total Quality Management. The findings also support Organizational Citizenship Behavior Theory (Organ, 1990), which emphasizes that voluntary positive behaviors contribute to organizational effectiveness, and Work Engagement Theory (1990), which explains that engaged employees become more productive and committed in their work. Furthermore, the study validates the Total Quality Management Theory (Deming, 1982)

by showing that quality management practices are more effective when supported by a positive school culture and highly engaged teachers. Thus, the study supports the view that Total Quality Management is not only dependent on organizational systems but also on the interaction among teacher behaviors, school culture, and work engagement within the school setting.

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Conflict of Interest Statement

The authors declare no conflicts of interest.

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