

The Role of Total Quality Management (TQM) Dimensions in Predicting Organizational Citizenship Behavior (OCB) and Work Engagement among Elementary School Teachers

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ABSTRACT

The present study aimed to explain the role of Total Quality Management (TQM) dimensions in predicting organizational citizenship behavior (OCB) and work engagement among elementary school teachers, and to examine the structural relationships among these variables in Aligoudarz. This quantitative study employed a descriptive–correlational survey design. The statistical population consisted of all elementary school teachers in Aligoudarz during the 2024–2025 academic year ($N = 412$), from which 199 teachers were selected using stratified random sampling based on Cochran's formula. Data were collected using the TQM questionnaire developed by Mittal et al. (1999), the OCB questionnaire by Organ and Konovsky (1996), and the Work Engagement scale by Schaufeli et al. (2002). Cronbach's alpha coefficients demonstrated acceptable reliability for TQM (0.885), OCB (0.801), and work engagement (0.831). Data analysis was conducted using SPSS-24. After verifying the normality of distributions through the Kolmogorov–Smirnov test, Pearson correlation, univariate General Linear Models (GLM), and Multivariate Analysis of Variance (MANOVA) were applied to test the hypotheses. The results revealed a strong and positive relationship between OCB and work engagement ($r = 0.799$, $p < 0.01$). Moreover, TQM significantly predicted both OCB and work engagement, with the leadership dimension showing the greatest effect size. Overall, the findings suggest that effective implementation of TQM—particularly in leadership and human resource management—can enhance extra-role behaviors and increase work engagement among teachers.

Introduction

In recent decades, schools around the world have faced increasing pressure to enhance the quality of teaching and learning, improve accountability to stakeholders, and maintain teachers' motivation and professional well-being. Under such circumstances, the concept of “quality” in public education has moved beyond outcome-based indicators and has come to be understood as a managerial and cultural philosophy grounded in continuous improvement, employee participation, organizational learning, procedural justice, and responsiveness to stakeholder needs (Bouranta et al., 2021; Wang & Smith, 2023). Experiences from leading educational systems demonstrate that school quality ultimately manifests in the quality of teachers' work experiences; even the most advanced educational standards cannot produce sustainable performance without teachers' motivation, engagement, and professional agency (Shirbegi et al., 2016).



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One of the fundamental indicators for understanding the quality of teachers' work experience is work engagement. Work engagement is defined as a positive, motivational, and enduring state of mind characterized by vigor, dedication, and absorption ([Schaufeli et al., 2002](#)). Extensive research has shown that highly engaged teachers experience greater job satisfaction, stronger organizational commitment, and better psychological well-being, while being less prone to burnout and less likely to consider leaving their jobs ([Mirhashemi, 2021](#); [Hosseini et al., 2023](#)). The Job Demands–Resources (JD-R) model also emphasizes the critical role of “job resources”—such as support, feedback, learning opportunities, organizational justice, and supportive leadership—in activating the motivational pathway and increasing work engagement ([Demerouti et al., 2001](#); [Bakker et al., 2023](#)).

Within school environments, work engagement is not merely an individual experience but a driver of professional behaviors. Studies have shown that higher work engagement is more likely to lead to voluntary actions, extra effort, collaboration, colleague support, and participation in school activities ([Kashanizadeh, 2024](#); [Zhang, 2023](#)). According to [Katz and Kahn's \(2018\)](#) performance theory, job performance results from the interaction between work engagement and organizational citizenship behavior.

Accordingly, organizational citizenship behavior (OCB) is one of the most influential behavioral constructs in organizations, playing a determining role in interaction quality, social efficiency, shared learning, and organizational social capital. OCB comprises voluntary, extra-role behaviors such as altruism, conscientiousness, sportsmanship, courtesy, and civic virtue ([Organ, 1988](#); [Podsakoff et al., 2000](#)). In schools, educational quality often develops through these voluntary behaviors, including instructional support beyond formal duties, constructive professional interactions, and active participation in school programs. Previous research has also emphasized that OCB contributes to improving school climate, reducing friction, facilitating collaboration, and fostering innovation ([Runhaar et al., 2013](#); [Zardashtian et al., 2015](#)). Furthermore, OCB serves as a key mechanism for enhancing work engagement by strengthening meaning, belonging, positive relationships, and social self-efficacy.

In recent years, Total Quality Management (TQM) has gained significant attention as an effective approach for improving school quality and teachers' work experiences. TQM is a long-term managerial philosophy that emphasizes continuous improvement, employee participation, organizational learning, effective leadership, empowerment, a strong quality culture, and efficient communication ([Lee, 2022](#); [Khan & Torres, 2023](#)). Research has shown that the “soft dimensions” of TQM—such as supportive leadership, continuous training, quality culture, and communication—have the greatest impact on employees' attitudes and behaviors, and by increasing fairness, trust, participation, learning opportunities, and perceived influence, they enhance the likelihood of extra-role behaviors and positive job outcomes ([Glaveli et al., 2022](#); [Shafiei-Rad, 2022](#)). Numerous studies have also reported that TQM can strengthen job satisfaction, affective commitment, and employees' OCB ([Kiani & Bahrami, 2020](#); [Katbi et al., 2022](#); [Mervin et al., 2023](#)).

Despite these findings, a significant research gap remains. Most studies have examined the effects of TQM on individual outcomes or explored the relationship between OCB and work engagement separately, while the role of OCB as a behavioral mechanism linking quality-oriented school practices to teachers' motivational experiences has rarely been tested within an integrated model. The systematic review conducted by [Bouranta et al. \(2021\)](#) also highlights the need for models that explain the mechanisms through which quality practices influence human outcomes.

Alongside its theoretical importance, this issue holds substantial practical significance for schools. Implementing quality-based approaches cannot be achieved solely through program design; rather, their success depends on teachers' understanding, acceptance, and demonstration of these principles through voluntary and professional behaviors. Identifying which dimensions of TQM can enhance teachers' motivation, enthusiasm, and psychological presence through the strengthening of OCB can help school leaders select more effective strategies—such as supportive leadership, professional development, and enhanced participation—and more effectively institutionalize a culture of quality.

Moreover, the educational context of Aligoudarz County, characterized by cultural diversity, dispersed schools, and limited resources, further underscores the necessity of examining such a model. Few studies have simultaneously analyzed the direct effects of TQM and the mediating role of OCB in

explaining teachers' work engagement in such contexts. Therefore, the findings of the present study can provide a practical foundation for improving professional interactions, enhancing school social capital, and designing localized human resource development policies.

In light of the above, the main objective of the present study is to examine the role of TQM dimensions in predicting organizational citizenship behavior and work engagement among primary school teachers in Aligoudarz County, with a particular focus on the mediating role of OCB in the relationship between TQM and work engagement.

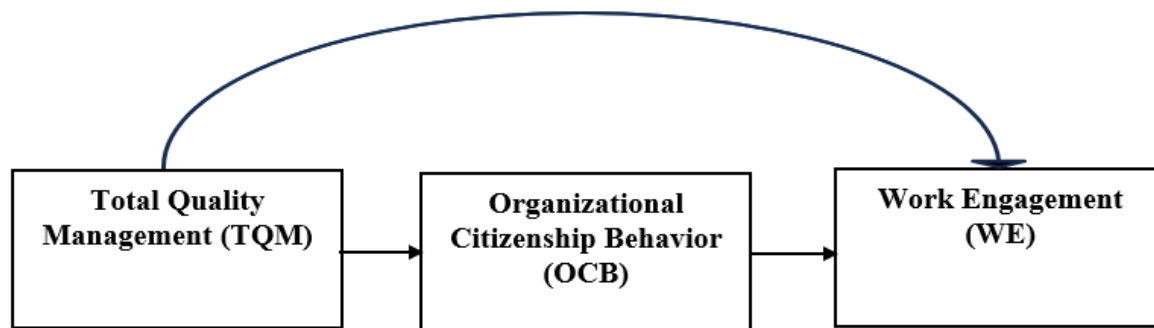


Figure 1. Conceptual Model of the Study: The Mediating Role of Organizational Citizenship Behavior in the Relationship between Total Quality Management Dimensions and Work Engagement

Method

Sample and Sampling Method

The statistical population comprised all primary school teachers in Aligoudarz County during the 2024–2025 academic year. According to the local Department of Education, the population size was reported as 412 teachers. To select the sample, stratified random sampling was used to ensure appropriate representation of the population strata/subgroups (in line with the stratified structure used by the education system). The sample size was determined using Cochran's formula, assuming a 95% confidence level and a 5% margin of error. Based on the population size of 412 teachers, 199 participants were included in the final analysis.

Tools Used

Total Quality Management (TQM) Questionnaire

The Total Quality Management (TQM) questionnaire developed by Mehta et al. (2011) consists of 35 items measuring seven dimensions: leadership, human resource management, continuous training and learning, process management, information management and data analysis, customer orientation, and supplier quality management. The questionnaire is scored on a five-point Likert scale ranging from 1 to 5, where 1 = low importance, 2 = slightly important, 3 = important, 4 = very important, and 5 = critical. The reliability of this instrument was reported as 0.87 using Cronbach's alpha in the study by Alizadeh and Salimi (2007). This questionnaire has been widely used in various studies as a valid tool for assessing TQM dimensions. In the present study, the reliability of the instrument was re-estimated using Cronbach's alpha and yielded a value of 0.88, indicating satisfactory internal consistency.

Organizational Citizenship Behavior (OCB) Questionnaire

The standardized Organizational Citizenship Behavior (OCB) questionnaire by Organ and Konovsky whose widely used 15-item version was first introduced and applied in their 1996 article

encompasses five core dimensions: altruism, conscientiousness, sportsmanship, civic virtue, and courtesy. The conceptual foundation of the instrument originates from Organ's seminal 1988 work, which outlined the fundamental dimensions of OCB. The Persian translation of this questionnaire was provided by Hassan Eslami (2007), and it has been extensively utilized in domestic studies. Evidence from previous research has supported its validity and reliability. In the study by Poursoltani Zarandi et al. (2013), content validity was confirmed through expert review in the field of sport management. Furthermore, a pilot study conducted on 30 physical education teachers in Mashhad reported a Cronbach's alpha of 0.76. In the present study, the internal consistency of the instrument was reassessed, yielding a Cronbach's alpha of 0.80, indicating acceptable reliability.

Utrecht Work Engagement Scale (UWES)

The Utrecht Work Engagement Scale (UWES), developed by Schaufeli et al. (2002), consists of 17 items assessing three core dimensions: dedication, vigor, and absorption. The instrument uses a five-point Likert scale ranging from "1 = always" to "5 = never." In Iran, Hailoo (2013) examined the validity of this questionnaire using factor analysis as well as convergent–discriminant and concurrent validity, all of which were confirmed. In the present study, the internal consistency of the instrument was evaluated using Cronbach's alpha, yielding a coefficient of 0.83, indicating acceptable reliability.

Procedure

This study was conducted through both library-based and field methods. In the library phase, relevant scholarly books, peer-reviewed articles, and academic theses were reviewed to establish the theoretical foundations, research background, and conceptual model of the study. In the field phase, the target population consisted of all primary school teachers in Aligudarz during the 2024–2025 academic year. The sample size was determined using Cochran's formula, and participants were selected through stratified random sampling. Necessary permissions were obtained from the Department of Education, and coordination with school principals was carried out before data collection.

Inclusion criteria required teachers to have at least two years of teaching experience, active employment during the study year, and willingness to participate. Exclusion criteria included incomplete or invalid responses, teaching experience of less than two years, and withdrawal at any stage of the process. After providing preliminary explanations and obtaining informed consent, data were collected individually in school settings. The data were coded and analyzed using SPSS-24. Descriptive statistics, correlation analysis, and regression analysis were performed to evaluate the study variables. To examine the indirect effects and test the mediation hypotheses, the PROCESS Macro for SPSS (Model 4) was utilized, with a 95% bootstrap confidence interval based on 5,000 resamples to assess the significance of the mediation paths.

Results

Preliminary analyses

Before testing the research hypotheses, the data were examined for normality using the Kolmogorov–Smirnov test. The results showed that the significance values for the variables were greater than 0.05, indicating that the assumption of normality was not violated. Therefore, parametric statistical procedures were deemed appropriate for further analyses.

Correlation analysis

Pearson correlation analysis was conducted to examine the relationship between organizational citizenship behavior (OCB) and work engagement. The results indicated a strong and positive relationship between the two variables.

Table- 1: Pearson correlation between OCB and work engagement

Variable 1	Variable 2	r	Sig.
Organizational Citizenship Behavior	Work Engagement	0.799	0.000

As shown in Table 1, OCB and work engagement were strongly and positively correlated ($r = 0.799, p < 0.001$). This finding suggests that higher levels of organizational citizenship behavior are associated with higher levels of work engagement.

Effects of TQM dimensions on OCB

To examine the direct effects of total quality management (TQM) dimensions on OCB, a GLM analysis was performed. The results indicated that all TQM dimensions had positive and significant effects on OCB.

Table -2: Effects of TQM dimensions on OCB

TQM dimension	Effect size / B	Significance
Leadership	0.046	Significant
Human Resource Management	0.038	Significant
Information/Data Analysis	0.032	Significant
Supplier Quality Management	0.016	Significant

Table 2 shows that all examined dimensions of TQM significantly predicted OCB. Among them, leadership had the strongest effect on OCB, followed by human resource management and information/data analysis. Supplier quality management had the weakest, though still significant, effect.

Effects of TQM dimensions on work engagement

A second GLM analysis was conducted to examine the effects of TQM dimensions on work engagement. The findings showed that all TQM dimensions were positively and significantly associated with work engagement.

Table -3: Effects of TQM dimensions on work engagement

TQM dimension	Effect size / B	Significance
Leadership	0.058	Significant
Customer Orientation	0.046	Significant
Process Management	0.043	Significant
Information/Data Analysis	0.028	Significant

Table 3 indicates that all dimensions of TQM significantly influenced work engagement. Leadership exerted the strongest effect, followed by customer orientation and process management. Information/data analysis had the smallest effect, but the relationship remained significant.

MANOVA results

A multivariate analysis of variance (MANOVA) was performed to assess the joint effect of TQM dimensions on the combined dependent variables of OCB and work engagement. The results showed that all dimensions had statistically significant multivariate effects.

Table -4:MANOVA results for the effect of TQM dimensions on OCB and work engagement

TQM dimension	Sig.	Partial effect size
Leadership	0.000	0.142
Human Resource Management	0.000	0.116
Information/Data Analysis	0.000	0.109
Other dimensions	0.000	—

The MANOVA results indicate that TQM dimensions jointly had a significant effect on the combined dependent variables. Leadership showed the largest partial effect size, followed by human

resource management and information/data analysis. These findings confirm that TQM dimensions are important predictors of both OCB and work engagement.

Mediation analysis

To test the mediating role of OCB in the relationship between TQM and work engagement, bootstrapping with 5,000 resamples was applied. The analysis showed that the direct path from TQM to OCB was significant, and OCB also significantly predicted work engagement while controlling for TQM. In addition, the total effect of TQM on work engagement was significant. After including OCB in the model, the direct effect of TQM on work engagement remained significant, indicating a partial mediation effect.

Table- 5: Path coefficients in the mediation model

Path	Coefficient (B)	p-value
TQM → OCB (<i>a</i>)	0.520	< 0.001
OCB → Work Engagement (<i>b</i>)	0.605	< 0.001
Total effect: TQM → Work Engagement (<i>c</i>)	0.579	< 0.001
Direct effect: TQM → Work Engagement (<i>c'</i>)	0.264	< 0.001

As shown in Table 5, all structural paths were statistically significant. The significant *a* path confirms that TQM positively predicts OCB. The significant *b* path indicates that OCB positively predicts work engagement when TQM is controlled. The total effect *c* was significant, and the direct effect *c'* also remained significant after including the mediator. This pattern confirms partial mediation of OCB in the relationship between TQM and work engagement.

Bootstrap indirect effect

The bootstrapped indirect effect of TQM on work engagement through OCB was tested using a 95% confidence interval. According to the study's logic, mediation is supported if the confidence interval does not include zero.

Table- 6: Bootstrap test of the indirect effect

Indirect path	LLCI	ULCI	Result
TQM → OCB → Work Engagement	0.242	0.392	Significant

Because the 95% bootstrap confidence interval did not include zero (*LLCI* = 0.242, *ULCI* = 0.392), the indirect effect was significant. Therefore, OCB significantly mediates the relationship between TQM and work engagement.

Discussion & Conclusion

The present study was conducted to explain the role of Total Quality Management (TQM) dimensions in predicting teachers' Organizational Citizenship Behavior (OCB) and Work Engagement, as well as to examine the pattern of relationships among these constructs. Based on the results of the normality test, the use of parametric statistical procedures in subsequent analyses was justified; therefore, statistical inferences were made based on reliable methodological assumptions. At the bivariate level, a positive and very strong relationship was observed between organizational citizenship behavior and work engagement. This finding is consistent with the theoretical logic of the work engagement literature, which conceptualizes engagement as a positive and motivational state associated with constructive organizational outcomes (Schaufeli et al., 2002). It is also aligned with empirical evidence in school contexts reporting links between teachers' work engagement and citizenship behaviors (Runhaar et al., 2013). In other words, the results of this study suggest that in schools, voluntary and extra-role behaviors—such as professional collaboration, participation in school affairs, and instructional support beyond formal requirements—may be associated with higher levels of vigor, dedication, and absorption in work. This

theoretical alignment is understandable because, according to the OCB literature, citizenship behaviors facilitate cooperation and reduce social friction within organizations ([Podsakoff et al., 2000](#)), and such functions in the school context may strengthen the social and meaningful resources required to enhance work engagement.

Furthermore, the GLM results indicated that all dimensions of total quality management had positive and significant effects on organizational citizenship behavior. This finding is consistent with a substantial body of literature on quality management in public education, as studies on TQM in educational environments emphasize that the “soft side of TQM” (such as supportive leadership, participation, communication, and a culture of quality) can enhance employees’ behavioral outcomes ([Glaveli et al., 2022](#)). In the present study, among the dimensions examined, leadership demonstrated the largest effect size on organizational citizenship behavior, followed by human resource management and information management/data analysis. This pattern can be explained based on prior literature: quality-oriented leadership is typically associated with increased trust, role clarity, perceived fairness, and a sense of influence, all of which are identified in the OCB literature as important antecedents of extra-role behaviors ([Podsakoff et al., 2000](#)). Moreover, the prominent role of human resource management suggests that policies emphasizing teacher empowerment, training, support, and participation—central elements of total quality approaches—contribute to the development of voluntary behaviors that support organizational functioning. In addition, the significant role of data-driven management and information analysis in predicting OCB may indicate that evidence-based decision-making and feedback systems strengthen norms of accountability and professionalism, which in turn are associated with higher levels of citizenship behavior.

The findings related to work engagement also showed that all TQM dimensions had positive and significant effects on work engagement, with leadership showing the greatest explanatory power. This result can be directly interpreted through the theoretical logic of the Job Demands–Resources (JD-R) model. According to this framework, job resources—such as support, autonomy, feedback, learning opportunities, and procedural justice—activate a motivational process and increase levels of work engagement ([Demerouti et al., 2001](#); [Bakker et al., 2023](#)). Many dimensions of TQM in schools can function precisely as organizational resources, including leadership support, professional development, process organization, and data-based feedback. Therefore, the alignment of the findings with the JD-R framework suggests that TQM may enhance work engagement by strengthening job resources and improving teachers’ work experiences.

In this regard, the relatively strong role of customer orientation and process management in predicting work engagement is also noteworthy. This finding can be explained through the literature on educational quality, as customer orientation in schools (i.e., attention to the needs of students and parents and responsiveness to stakeholders) is often associated with a greater sense of meaning and purpose in educational work. Similarly, process management may reduce ambiguity and work-related friction while making tasks more structured and manageable. Within the JD-R framework, such conditions increase resources and reduce barriers, thereby facilitating higher levels of vigor and absorption at work.

At the multivariate level, the MANOVA results also indicated that TQM dimensions simultaneously exert significant effects on the combined outcomes of organizational citizenship behavior and work engagement. This finding is consistent with the concept of a “quality culture,” which views quality not merely as a procedural outcome but as an overarching organizational orientation that simultaneously influences behaviors and motivational states. The importance of this result becomes clearer when considered in light of a gap highlighted in the literature. Research reviews on quality in public education emphasize the need for “mechanism-oriented models” that clarify the pathways through which quality initiatives influence human outcomes ([Bouranta et al., 2021](#)). By demonstrating the significant effects of TQM on both behavioral and motivational outcomes, as well as the strong relationship between OCB and work engagement, the results of this study support the mechanism-based perspective that managerial quality orientation in schools may improve teachers’ work experiences through strengthening voluntary professional behaviors and motivational pathways related to job resources. Overall, the consistency of the findings with a considerable portion of the literature (TQM in education, OCB, and the JD-R framework) suggests that the results are supported by a strong theoretical

foundation. At the same time, possible differences in the magnitude of the effects of certain dimensions (for example, the prominent role of leadership in primary school contexts) may be influenced by contextual characteristics such as school management structures, professional norms, and resource limitations. This highlights the need for comparative studies across different educational contexts to further clarify these relationships

From a practical perspective, the findings of this study suggest that school quality improvement programs should move beyond a sole focus on formal standards or output indicators and instead concentrate on strengthening the “soft side of TQM,” particularly quality-oriented leadership and human resource policies. It is recommended that school principals foster professional participation mechanisms, provide regular feedback, ensure organizational support, and promote continuous learning in order to create conditions conducive to the emergence of organizational citizenship behaviors. As supported by both theoretical and empirical evidence, such behaviors can be associated with higher levels of work engagement.

At the level of educational authorities, it is further recommended that professional development programs for school leaders be designed around the principles of quality culture, data-driven decision-making, and participative management. Such an approach can strengthen the pathway through which quality-oriented policies translate into positive human outcomes within schools

This study, however, is not without limitations. First, the cross-sectional design restricts causal inference, and examining the dynamics of the constructs over time would require longitudinal designs. Second, the reliance on self-report data raises the possibility of common method bias. Third, conducting the study in a single county and within one educational level limits the generalizability of the findings. Based on these constraints, future research is encouraged to employ multi-wave and multi-source designs, including evaluations by principals, colleagues, or structured observations. Moreover, investigating central constructs from the JD-R model—such as supervisory support, organizational justice, autonomy, and feedback—as potential mediators or moderators may help clarify the mechanisms through which quality practices influence human outcomes. The use of structural equation modeling could also offer more precise estimates of direct and indirect paths and support the testing of more complex models in educational settings. Finally, comparative studies across diverse educational contexts may help assess the stability and generalizability of TQM’s effects.

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