

Organisational Learning as A Mediator on the Relationship between Total Quality Management and Employee Performance in Higher Education: A Case Study of the University of Tabuk.

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Abstract:

The study investigates the interplay between total quality management (TQM) implementation, organisational learning (OL), and employee performance. The aim was to address the gap in understanding how TQM affects employee performance, particularly in the context of higher education. The study was based on primary data collected using a designed questionnaire to cover the main dimensions of the study. The strata sampling method was adopted to survey the teaching staff of the University of Tabuk. The final sample included 120 participants in the total sample, which accounted for 82 % of the sample. Utilising a structural equation modelling (SEM) methodology, the intricate structure of the suggested model was assessed. The findings reveal significant positive relationships between TQM, OL and employee performance. Furthermore, OL is shown to be a beneficial mediator in the TQM-performance relationship. The study results are poised to offer evidence-based recommendations for educational quality enhancement, with implications for administrators and policymakers.

Keywords: Total Quality Management, Organizational Learning, Employee Performance

Introduction:

The Preface of the Study:

In the ever-changing educational landscape of the 21st century, academic institutions have evolved from centers of information to institutions aiming for excellence in all areas, including research, teaching and professional excellence. There has never been a greater need for quality improvement strategies at every turn as they move into this mammoth project.

The goal of Total Quality Management (TQM), which has its roots in the corporate sector, is to encourage quality consciousness in all organisational actions and processes. An effective organisation's cornerstones are employee involvement, client satisfaction, and continuous progress. Due to TQM's commercial success, academic institutions started experimenting with its implementation to replicate similar success stories within their walls.

At the intersection of tradition and modernity, the University of Tabuk stands in for several higher education institutions across the globe. It firmly holds its long-standing academic traditions but feels pressure to innovate, modernise, and perform well. Its dual challenge necessitates approaches honouring its history and opening the door to a more promising and effective future. As a result, the university made a timely and strategic decision to apply TQM practices.

Though the choice is praiseworthy, there are more obstacles to overcome before it can be successfully implemented and its advantages fully realised. Numerous studies conducted in the business sector have shown how important organisational learning is to the success of Total Quality Management (TQM) practices. The process of gathering, sharing, and utilising information is known as organisational learning, and it serves as the link between TQM concepts and observable gains in worker productivity. Nevertheless, due to its distinct difficulties and peculiarities, the academic realm has not been thoroughly examined to comprehend this mediation completely.

Thus, in the context of higher education, this research sets out to illuminate this fascinating nexus between TQM, organisational learning, and employee performance. This investigation will be undertaken via the prism of the University of Tabuk, which will serve as a case study that may shed light on numerous other universities pursuing comparable standards of excellence.

Organisational learning (OL) is how organisations generate, acquire, understand, and retain knowledge and information to adapt to their external environment (Huber, 1991). Its main goal is to increase an organisation's competitive advantage and capacity

through learning processes (Argote & Miron-Spektor, 2011).

Organisational learning is a concept that involves not just the acquisition of knowledge but also modifying behaviours based on what has been learned (Argyris & Schön, 1978).

Total quality management's (TQM) objective is to satisfy customers through continual improvement and achieve long-term success (Deming, 1986). TQM integrates all organisational functions and processes to concentrate on achieving company goals and consumer needs. According to Dale and McQuater (1998), the core tenets of TQM are factual decision-making, leadership, employee involvement, process approach, system approach, continuous improvement, and supplier partnerships that benefit both parties. TQM has been gradually implemented in higher education institutions as a strategic approach to improving education quality, administrative effectiveness, and overall institutional performance (Sahney, Banwet, & Karunes, 2004).

TQM principles in higher education revolve around customer focus (students and parents), continuous improvement, employee involvement, and leadership commitment. These principles aim to ensure the quality of teaching and learning, research, community service, and administrative tasks (Owlia & Aspinwall, 1996).

Employee performance is a concept that has been extensively researched in organisational psychology and human resource management. It is frequently described as accomplishing duties, goals, or obligations associated with a person's employment (Campbell, 1990).

Problem Statement:

Worldwide, pressure to adjust to changing educational standards, technologies, and methodology is always present in higher education institutions. Like many of its peers, the University of Tabuk struggles to maintain its high-quality standards while adjusting its instructional procedures to meet these dynamic developments. Putting Total Quality Management (TQM) principles into practice to successfully negotiate this challenging environment has become strategically essential. TQM is a holistic approach that strongly emphasises staff involvement, customer attention, and continuous improvement—all critical to providing high-quality education.

Despite the increasing recognition of TQM's potential benefits in the higher education sector, there is a critical gap in the research literature, especially in the context of the University of Tabuk. Implementing TQM within this academic environment presents unique challenges and opportunities requiring a tailored investigation. Furthermore, while the direct impact of TQM on organisational outcomes is a well-documented area of study, Organizational learning's

mediation function in this relationship is still not fully understood. OL, as a crucial component of TQM, involves acquiring, disseminating, and applying knowledge within an organisation to enhance its adaptability and performance. Understanding how OL influences the relationship between TQM and employee performance is paramount for the University of Tabuk to optimise its quality management strategies. Without this insight, the university may inadvertently overlook a pivotal factor that could significantly enhance its ability to deliver exceptional education.

Considering these considerations, **this research endeavours to fill this critical research gap by thoroughly examining the interplay between Total Quality Management implementation, Organizational Learning, and employee performance at the University of Tabuk.** This issue raised the following queries:

1. Does the University of Tabuk's Total Quality Management implementation positively correlate with employee performance?
2. Does the University of Tabuk's Total Quality Management adoption positively correlate with Organizational Learning (OL)?
3. Does the University of Tabuk's workforce performance positively correlate with Organizational Learning (OL)?
4. Does the University of Tabuk's Total Quality Management implementation and employee performance have a link mediated by organisational learning (OL)?

By doing so, the study aims to provide evidence-based recommendations and insights that can inform targeted strategies for enhancing the quality of education offered by the university.

Importance of the Study:

This study holds significant significance for several stakeholders:

1. Academic Community:

The research provides important new understandings of how organisational learning (OL) and total quality management (TQM) interact, particularly in how these concepts can be harnessed to improve employee performance. For educators, researchers, and students, this study provides a framework for understanding how TQM and OL contribute to higher education quality. By deepening the academic discourse on these topics, this study also paves the way for future research to build on its findings, thereby advancing scholarly knowledge and educational practices.

2. Administrators and Decision Makers:

This study's findings directly apply to strategic planning and operational management for university administrators and decision-makers. The actionable recommendations derived from the research enable administrators to tailor their TQM implementation strategies to synergise with their organisational

learning processes. This alignment is crucial for maximising the effectiveness of both TQM initiatives and broader organisational goals, ultimately leading to enhanced educational outcomes and institutional performance.

3. Policy Makers:

The insights gained from this study are invaluable for policymakers focused on educational reforms. By understanding the critical role of TQM and OL in driving academic excellence, policymakers can craft more informed, evidence-based policies that promote quality improvements across higher education institutions. These policies can be designed to encourage adopting best practices in TQM and OL, encouraging the education system to adopt a culture of ongoing learning and improvement.

Objectives of the Study:

The main goals of this research are as follows:

1. To examine the relationship between TQM implementation and employee performance at the University of Tabuk.
2. To assess the influence of OL as a mediator in the relationship between TQM and employee performance.
3. To provide practical recommendations for optimising TQM practices and OL processes in the context of the University of Tabuk.

Literature Review and Hypotheses:

Support for Total Quality Management Implementation and Employee Performance:

García et al. (2022) conducted a systematic literature review on the relationships between quality management, innovation, and performance. Their research showed that operational and financial performance, product and process innovation, and quality management all had positive correlations.. Sena (2020) emphasizes the critical role of quality management in the sustained success of organisations. The study underscores the significant correlations between quality management and organisational performance. It further asserts that quality management is a distinctive competitive advantage in the market, highlighting its pivotal status as a competitive priority for organisations, including higher education institutions and service organisations.

In 2020, Al Saffar and Obeidat conducted a study examining the moderating effect of information sharing and the impact of TQM procedures on employee performance in the Qatar Ministry of Interior. The study used quantitative research techniques to collect 280 participant questionnaires for data analysis. The study's conclusions show that TQM practices—which include staff engagement, customer focus, continuous improvement, leadership with a clear vision, and efficient operations

management—favour worker performance by encouraging knowledge sharing.

Alzeaiden (2019) discovered that TQM has a statistically significant impact on university performance in Jordan. According to the report, TQM is essential to university strategy and greatly impacts Jordanian universities' performance, survival, and success. According to Khan et al. (2019), TQM methods significantly and favourably impact worker performance at Pakistani higher education institutions (HEIs). Universities can improve employee commitment, satisfaction, and performance using TQM procedures. This, in turn, may help raise the university's performance standard. A study by Singh et al. (2018) focused on the application of Total Quality Management (TQM) in Indian companies and how it affected organisational performance (OP). Their findings reveal a correlation between TQM practices and OP. Among these practices, certain factors such as OL, supplier quality management (SQM), corporate social responsibility (CSR), and human resource factors (HRF) were identified as having a particularly significant influence on TQM practices. Prasad and Prabhudesai (2018) found that TQM practices significantly positively impact employee satisfaction within technical institutions in India.

Furthermore, they observe that employee satisfaction, in turn, plays a role in enhancing employee performance within the educational sector. Zakaria et al. (2018) emphasise that customer focus is the most crucial element of TQM in achieving outstanding service performance. They also note that training, education, and continuous improvement moderately correlate with student service performance, underscoring their significance in attaining excellent service performance.

Hasham (2018) asserts that TQM enhances performance in academic institutions by prioritising effective management processes and collaboration to achieve high-quality output. TQM delivers superior services to students and the broader community, fostering a more effective and efficient organisational culture.

Panuwatwanich et al. (2017) concluded that implementing TQM positively correlates with improved organisational performance in Vietnamese construction firms. They noted that TQM implementation could result in enhanced performance across various aspects, including the quality of work, external customer satisfaction, safety, market share, the effectiveness of planning, labour efficiency, successful tenders, quality contractor selection, management of human resources, risk control, and managers' competency.

Psomas and Antony (2017) observed that Greek Higher Education Institutions (HEIs) primarily adopt TQM elements such as student focus, leadership and

top management commitment, strategic quality planning, process management, and the involvement of teaching staff and employees. Noteworthy achievements by the sampled HEIs encompass improvements in quality performance, increased satisfaction among teaching staff and employees, enhancements in operational performance, and positive societal impact. Mohammed et al. (2016) highlight that quality management practices are considered one of the variables influencing organisational performance in higher education institutes. Cetindere and Yetisen (2015) examined the correlation between TQM components and business performance in the province of Kütahya. The results of their regression analysis indicated that criteria related to leadership and education exhibit a stronger correlation with performance.

Motita (2015) concludes that the TQM practices of state universities and colleges (SUCs) significantly correlate with school performance. This is particularly notable regarding continual process improvement, as assessed by administrator respondents, and overall school performance, as evaluated by faculty respondents. Mahmud and Hilmi (2014) investigated the relationship between TQM and the performance of Small and Medium Enterprises (SMEs) in Malaysia, focusing on the mediating role of OL. They put forth propositions regarding TQM practices, organisational learning, and SMEs' performance, suggesting that TQM can indeed support both organisational learning and the performance of SMEs.

A study by Hakami et al. (2014) investigated the connection between TQM in the banking sector and employee performance.

The effects of OL and TQM on business performance were studied by Lee and Lee (2014), focusing on Taiwan's insurance sector. The study found that organisational learning efforts increase the direct association between TQM procedures and business success. Mahmood, Qadeer, and Ahmed (2014) investigated the connection between organisational performance and TQM characteristics. The study discovered a favourable correlation between improved organisational performance and TQM components such as information analysis, process management, and strategic planning.

Valmohammadi (2011) evaluated the effectiveness of TQM implementation on the output of Iranian manufacturing SMEs. The data supports the notion that TQM procedures enhance employee performance and shows that TQM deployment considerably increases organisational performance. Fotopoulos and Psomas (2010) studied the structural links between TQM components and organisational performance. They concluded that there was a strong correlation between an organisation's performance and the TQM components of leadership, customer focus, and continuous improvement.

These studies present a thorough analysis of the relationship between TQM implementation and increases in employee performance, indicating a favourable association. Thus, this study proposes:

Hypothesis 1 (H₁): There is a positive relationship between Total Quality Management implementation and employee performance at the University of Tabuk.

This hypothesis posits that as the University of Tabuk invests in and effectively implements TQM practices, its employees' performance will improve demonstrably. This assertion is grounded in the foundational principles of TQM, which emphasise continuous improvement, customer focus, and employee involvement. When TQM practices are effectively integrated into organisational processes, they are expected to lead to higher employee satisfaction, motivation, and productivity. This, in turn, is anticipated to result in improved overall employee performance.

Moreover, previous studies in various organisational contexts have consistently demonstrated positive associations between TQM implementation and enhanced employee performance. However, given the specific nuances of the higher education sector, it is crucial to empirically validate this relationship within the context of the University of Tabuk. By doing so, the research aims to provide empirical evidence that supports the potential benefits of TQM implementation on employee performance in the higher education sector.

Support for Total Quality Management Implementation and Organisational Learning:

Managers of Jordanian SMEs can benefit greatly from the insights provided by Alsheikh et al. (2023), who highlight TQM's critical role in promoting organisational learning. The study emphasises how crucial strategic thinking is to developing winning plans for these organisations' goal-achievement, competitiveness, productivity growth, and cost containment. In the context of Iran's auto parts industry and suppliers, Yazdani et al. (2016) found that the foundational and infrastructure components of quality management methods substantially positively impacted organisational learning.

In order to determine the causal links between TQM, organisational learning, and organisational innovation in higher education, Aminbeidokhti et al. (2016) carried out a study. They also looked into the possibility that TQM mediates the relationship between organisational innovation and TQM. The findings indicated that TQM positively and substantially impacts organisational learning. Furthermore, organisational learning was found to significantly influence organisational innovation. Attafar A., Shahin A., & Kheradmandnia M. (2016) conducted a case study on the impact of TQM practices on organisational learning. The research

highlighted that when implemented thoroughly, TQM practices lead to improved OL capabilities. Specifically, elements of TQM, such as continuous improvement and employee training, encouraged organisational learning processes. Yazdani, B., Attafar, A., Shahin, A., & Kheradmandnia, M. (2016) expanded on the analysis of TQM's influence on organisational learning by concentrating on Iran's auto component industry and its suppliers. According to this study, putting TQM techniques into practice creates an atmosphere favourable to organisational learning, improving the organisation's overall flexibility and effectiveness. Yazdani (2015) discovered that the core and infrastructure aspects of quality management (QM) practices significantly influence organisational learning within the context of automobile part manufacturing and suppliers in Iran. Sisnuhadi D. (2014) investigated the relationship between TQM practices' soft and hard factors and organisational learning. The study shows that soft factors (like leadership commitment, open communication, and employee involvement) and complicated factors (such as process management and control) are positively associated with organisational learning. It was shown that TQM practices significantly contribute to developing an organisational learning environment. Yusr et al. (2013) examined the relationships among Total Quality Management (TQM) practices, organisational learning capability, and innovation performance. They also investigated the mediating role of organisational learning in relation to TQM and innovation performance. The study's findings supported all hypotheses, affirming a positive relationship between TQM practices, organisational learning capability, and innovation performance.

A study by Hung et al. (2011) assessed the influence of organisational learning and Total Quality Management (TQM) on innovation performance in the high-tech sector. Their results show that TQM has a significant and favourable impact on organisational learning and innovation performance. These sources provide empirical evidence supporting the hypothesis that TQM implementation is positively related to organisational learning. They emphasise the role of TQM in creating a culture that promotes continuous improvement and knowledge sharing, which are critical components of organisational learning. Thus, this study proposes the following:

Hypothesis 2 (H₂): There is a positive relationship between Total Quality Management Implementation and Organisational Learning at the University of Tabuk.

OL is a process through which an organisation improves itself over time through better knowledge management, innovation, and the continuous improvement of strategies and methods. This involves creating, retaining, and transferring knowledge within

the organisation. OL is often essential for long-term success and adaptability in a changing environment. In the University of Tabuk context, implementing TQM could facilitate OL by encouraging a culture that values continual improvement and knowledge sharing. TQM can lead to better systems for feedback, both internally from staff and externally from students and other stakeholders, which the university can then use to make informed decisions and improvements. This hypothesis suggests that as TQM is more fully realised within the university's operations, these feedback loops and improvement processes become more robust and effective, leading to a more pronounced OL culture. It implies a cause-and-effect relationship where TQM acts as a driver for enhancing the university's capacity to learn and adapt, thus suggesting a positive correlation between these two variables.

Support for Organisational Learning and Employee Performance:

Do and Mai (2022) systematically reviewed the relationship between OL and firm performance. Their comprehensive literature analysis confirmed the positive relationship between OL practices and the performance of firms across various industries. Wibowo et al. (2020) discovered in their research that hard skills, soft skills, OL, and innovation capabilities all positively and significantly impacted the performance of lecturers at Islamic universities in Indonesia. Among these variables, soft skills emerged as the most influential factor contributing to lecturer performance.

Šteta-Ćerimović and Mekić (2020) proposed a research framework to study the effects of quality management practices and OL on organisational performance, suggesting a theoretical link between these factors. Hartono et al. (2017) conducted a study demonstrating that OL and the need for achievement significantly and positively influence teaching competence and lecturer performance. Pham et al. (2016) examine the impact of employee participation on the OL process and the relationship between the OL process and the performance of a public university in Vietnam. They find that employee participation in decision-making positively influences the OL process and that the OL process is significantly associated with the university's performance. Nafei (2015) argues that OL is a crucial factor influencing Organizational Performance (OP) in healthcare organisations in Al-Taif Governorate, KSA. Adaptive Organizational Learning (AOL) and Generative Organizational Learning (GOL) significantly directly affect OP. Hussein et al. (2014) assert that Malaysian public higher education institutions' learning organisation culture (PIHEs) directly affects organisational performance and innovativeness, potentially leading to long-term organisational success. Lee and Lee

(2014) examined the impact of TQM and organisational learning on business performance, specifically in the Taiwanese insurance industry. Their findings highlighted that TQM and organisational learning practices positively affect business performance metrics.

Wan Hooi and Sing Ngui (2014) looked at HRM's function and organisational learning capacity in enhancing the performance of Malaysian SMEs. They concluded that developing organisational learning capabilities through HRM practices can improve organisational performance. Mihi Ramírez et al. (2011) present empirical evidence indicating a positive and direct correlation between organisational learning and performance. Additionally, their findings reveal positive direct and indirect effects of the four modes of knowledge conversion on performance. The study underscores the significance of knowledge creation and organisational learning for fostering continuous improvement and achieving competitive advantages.

Akhtar et al. (2011) conducted a study on higher education institutes in Pakistan, revealing a noteworthy positive influence of OL on organisational performance. Among the dimensions of organisational learning, inquiry, dialogue, and systems connection exhibited robust correlations with organisational performance.

These studies collectively support the notion that OL is a vital component that can positively influence employee performance and, by extension, overall firm performance. Thus, this study proposes the following:

Hypothesis 3 (H₃): There is a positive relationship between Organisational Learning and employee performance at the University of Tabuk.

OL is a dynamic process promoting collective understanding and capacity to act effectively. It encompasses knowledge acquisition, information distribution, information interpretation, and organisational memory, which enhance an organisation's potential for successful and sustained performance.

The underlying premise of this hypothesis is that when an organisation fosters a learning environment, it not only accumulates knowledge but also develops systems and cultures that enable its members to apply this knowledge effectively.

Support for Organisational Learning mediates the relationship between Total Quality Management implementation and employee performance:

Tajouri & Lakhal (2024) analysed the impact of TQM practices on organisational performance and innovation, highlighting the mediating role of organisational learning. Their study underscores that TQM practices can lead to better performance and innovation when coupled with a strong OL culture. Shuaib & He (2024) discussed the mediating effects of OL on the relationship between TQM innovation

and business performance, providing evidence from manufacturing SMEs in Nigeria. They have found that OL enhances the positive impact of TQM on business performance.

Tortorella et al. (2020) studied the mediating role of an OL on the relationship between TQM and operational performance in Brazilian manufacturers, finding that OL is a critical factor in realising the operational benefits of TQM. Chaudhry et al. (2018) assessed the impact of TQM on organisational performance, considering the mediating roles of business innovativeness and learning capability. Their findings suggest that TQM implementation impacts performance more significantly when there is an established culture of learning and innovation within the organisation.

Basheer et al. (2018) investigated how supply chain procedures and TQM affect a company's ability to supply goods in the face of OL capabilities with a case study on textile firms in Pakistan. They suggest that OL capabilities significantly contribute to the effectiveness of TQM and supply chain practices in enhancing firm performance. Modarres & Pezeshk (2017) explored the impact of TQM on organisational performance, highlighting the mediating effects of organisational learning and innovation. Their findings support the hypothesis that OL and innovation mediate the relationship between TQM practices and organisational performance.

Mahmood, Qadeer, & Ahmed (2015) explored the role of OL in understanding the relationship between TQM and organisational performance. They found that OL serves as a significant mediator that enhances the effect of TQM on organisational performance. Mahmud & Hilmi (2014) focused on Malaysian SMEs and reported that OL mediates between TQM and SME performance, suggesting that learning processes help actualise the benefits of TQM in improving performance.

Akgün et al. (2014) state that learning capacity and business inventiveness mediate between TQM and financial performance. They concluded that learning and innovativeness are key mechanisms through which TQM enhances financial outcomes. Nikabadi, Hoseini, & Zangouri (2014) investigated the effect of TQM on innovation performance, with OL playing a mediator role. The study demonstrated that TQM can improve innovation performance when OL is effectively managed.

Yusr et al. (2013) examined the relationships among TQM practices, OL capability, and innovation performance. They also investigated the mediating role of OL between TQM and innovation performance. The study's findings supported all hypotheses, affirming a positive relationship between TQM practices, OL capability, and innovation performance. Loréns Montes et al. (2003) identify factors affecting the relationship between TQM and

organisational performance. While not directly addressing OL as a mediator, their work provides a foundational understanding of the dynamics between TQM practices and performance outcomes.

Together, these studies offer substantial evidence supporting the hypothesis that OL mediates the relationship between TQM implementation and employee performance,

This implies that the impact of TQM on employee performance is not solely due to the direct implementation of TQM practices but also through the influence of OL processes.

Emphasising the importance of fostering a learning culture to maximise the benefits of TQM initiatives. Thus, this study proposes:

Hypothesis 4 (H₄): Organisational Learning mediates the relationship between Total Quality Management Implementation and employee performance at the University of Tabuk.

This hypothesis suggests that the influence of TQM on employee performance is not solely due to the direct implementation of TQM practices but also through the influence of OL processes within the University of Tabuk. OL refers to acquiring, disseminating, and applying knowledge within an organisation. It is postulated that a learning-oriented culture fosters an environment where employees are more adept at adapting to change, problem-solving, and innovating—attributes directly linked to enhanced performance.

By examining the mediating role of OL, this research recognises that it is not solely the presence of TQM practices that impacts employee performance but also how these practices are integrated and internalised within the organisational culture. This hypothesis aligns with contemporary research that underscores the importance of OL as a catalyst for leveraging the benefits of TQM initiatives.

Conceptual Framework of the Study:

The conceptual framework for this study outlines the relationships among TQM, OL, and Employee Performance and posits OL as a mediator in the relationship between TQM and employee performance.

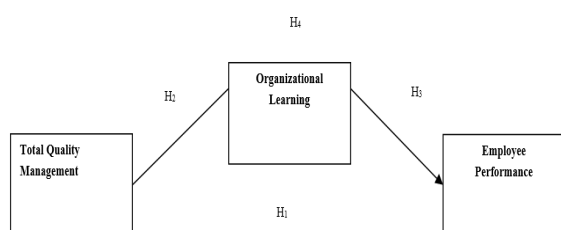


Fig. 1 The Proposed Model

1. Total Quality Management:

At the framework's core lies TQM, which encompasses management practices and principles focused on continuous improvement, customer

satisfaction, and employee involvement. TQM emphasises creating a culture of quality and accountability within the organisation. It is expected to directly impact employee performance by fostering an environment conducive to productivity, innovation, and customer-centricity.

2. Organisational Learning:

OL is positioned as a mediating variable in this framework. It refers to acquiring, disseminating, and applying knowledge within an organisation. It is expected that a culture that prioritises learning would improve employee performance by providing workers with the information and abilities needed to innovate, solve challenging challenges, and adjust to changing circumstances in their jobs. Additionally, OL is expected to mediate the relationship between TQM and employee performance. This implies that the impact of TQM on employee performance is not solely due to the direct implementation of TQM practices but also through the influence of OL processes.

3. Employee Performance:

Employee performance is a critical outcome variable in this framework, reflecting the effectiveness of TQM practices and OL initiatives within the University of Tabuk.

4. Mediating Relationship:

The relationship between TQM and OL, as well as between OL and Employee Performance, highlights the integral role of OL. It implies that TQM benefits employee performance not just straightforwardly but also indirectly through its impact on the university's OL level.

Rationale for the Framework:

This conceptual framework is constructed based on a synthesis of established theories in quality management and OL, tailored to the specific context of the University of Tabuk. It acknowledges the interplay between TQM practices, OL, and employee performance, highlighting the potential for TQM to influence performance indirectly by enhancing OL processes.

Methodology:

Study population and sample size:

The study was conducted among the teaching staff of the University of Tabuk. A simple random sample was selected by utilising the Yamane (1967) method (assuming that the population under the study is homogeneous) as follows:

$$n = \frac{N}{1 + N * d^2}$$

Where:

: sample size

: total population (total number of teaching staff members)

d : margin of error

Substituting $N = 274$ and $d = 10\%$, the sample size will be :

$$n = \frac{274}{1 + \frac{274 * 0.10^2}{2}} = 73$$

The Simple Random design cannot be used here because of the non-homogeneity of the population under the study (faculties of the University of Tabuk). Therefore, the design of the sample for this study will be changed to a strata design. This requires multiplying the sample size by the design effect, which is taken to be (2); hence, the actual sample size will be $73 * 2 = 146$. The sample size was distributed among the faculties of the University of Tabuk according to the number of teachers at each faculty:

Table (1) Distribution of the sample among the faculties of the University of Tabuk

Faculty	Number of teaching staff member	%	Sample size
Medicine	25	9%	13
Pharmacy	7	3%	4
Applied Medical Sciences	23	8%	12
Engineering	12	4%	6
Science	79	29%	42
Applied College	8	3%	4
Computer and Information Technology	16	6%	9
Business Administration	24	9%	13
Art and Design	6	2%	3
Sharia and Law	19	7%	10
Education and Arts	55	20%	29
Total	274	100%	146

However, this analysis includes 120 staff members, giving a response rate of 82%.

Questionnaire and data collection:

Online, a structured questionnaire was done. The survey was created in Arabic after being translated into English. The final structured questionnaire consisted of four parts: essential characteristics, TQM, OL, and employee performance. Excluding the essential characteristics, the questionnaire contained 42 items in three dimensions. Twenty-one items measured TQM. The second dimension represents OL and involves eight items. Thirteen items assess employee performance. A five-point Likert scale was used to assess all the items, with rating scales ranging from 'strongly disagree' = 1 to 'strongly agree' = 5.

The data collection process for this study was meticulously structured to ensure accuracy, confidentiality, and adherence to ethical standards. Initially, the questionnaire was designed using Google Forms. To guarantee the protection of personal data and comply with legal and ethical considerations, the personal and data protection system at the University of Tabuk was rigorously followed. This commitment to data protection was clearly articulated in the questionnaire's introduction, ensuring that respondents were fully informed about using and safeguarding their data. Finally, to accelerate the data handling and analysis step, replies obtained via Google Forms were transcribed into an Excel sheet and then into an SPSS file. This smooth transition from collecting to analysis permitted a more efficient and error-free data handling, permitting a thorough and informative examination of the findings.

Data analysis:

The data was analysed using SPSS version 20 and Amos version 23. Frequency and percentage are examples of descriptive statistics that were utilised to characterise the respondents' essential characteristics. Face validity and Cronbach's alpha were used to determine the questionnaire's validity and reliability. Ten specialists with TQM experience tested the face validity. The face validity was also calculated using the phases given by Desai.S and Patel. N 2020. The overall percentage of agreement was 90%, indicating high validity.

Following the two-stage model-building process for applying structural equation modelling (SEM) (Hair et al., 1998; Hoyle and Panter, 1995; Jöreskog and Sörbom, 1996), data analysis was carried out in two stages: first, by using confirmatory factor analysis, and second, by analysing the hypotheses with structural equation models. The number of factors and the loadings of measured (indicator) variables on them were examined using confirmatory factor analysis (CFA) to see if they matched expectations based on prior theory. CFA evaluated the measurement quality of each construct and the overall model. Individual factor analyses for TQM, organisational learning, and performance were used to assess the measures' one-dimensionality.

Using the average variance extraction index from Fornell and Lacker (1981) and the composite reliability index from Bagozzi and Yi (1998), the reliability of the measures was determined. Both indices exceed the evaluation requirements of 0.5 for average variance removed and 0.6 for composite reliability for all variables (Bagozzi and Yi, 1998). Following Bagozzi and Baumgartner (1994), the

researcher examined modification indices and residual analyses to locate sources of misspecification in a measurement model. The value of modification indices is that they provide an estimate of the expected decrease in overall chi-square if the fixed parameters under consideration were estimated freely. Large modification indexes indicate that factor cross-loadings and error covariance are present (i.e., a loading on more than one factor) (Anderson and Gerbing, 1988; Byrne, 2001)

Results:

Alpha Cronbach:

Table (2) shows the results of internal consistency to measure the reliability coefficients of the study

variables. According to table (2), the Alpha Cronbach coefficients for OL, TQM, and employee performance are calculated to be 0.89, 0.95, and 0.91, respectively, which are considered high values. These figures indicate that the study variables can be described as reliable.

Essential Characteristics of the Study Sample:

From Table (3), we find that most of the respondents are male. Regarding the sample distribution according to employment category, we notice that close to two-thirds of the teaching staff are assistant professors and associate professors, representing 37.5% and 28.3%, respectively. In terms of experience, most teaching staff have more than six years of experience.

Table (2) Value of Reliability Coefficient

	Number of Items	Cronbach α
Organizational learning	12	0.89
Total Quality management	21	0.95
employee performance	13	0.91

Table (3) Characteristics of the Study Sample

Variables	Frequencies	Percentages
Sex		
Males	95	79%
Females	25	21%
Total	120	100%
Employment Category		
Lecturer	27	22.5%
Assistant Professor	45	37.5%
Associate Professor	34	28.3%
Professor	14	11.7%
Total	120	100%
Years of experience		
less than 3 years	7	5.8%
3 - 6 years	13	10.8%
more than 6 years	100	83.4%
Total	120	100%

Conformity Factor Analysis (CFA):

The CFA results in Table (4) show that each item in the three dimensions of TQM, OL, and the performance has a factor loading greater than 0.5 (excluding question 10 in the third dimension), indicating that all factor loadings of questions are acceptable. According to modification indices, items 2,7 and 17 in the TQM dimension have a high covariance with other questions, so they are removed to improve model fit. In addition, another covariance is fixed. The findings then demonstrate a good fit of the second-order specification ($\chi^2 = 196.233$, $df = 115$, $sig = 0.000$; $GFI = 0.842$; $CFI = 0.933$; $IFI = 0.934$; $RMR = 0.030$; $RMSEA = 0.077$)

In the context of OL, the CFA reveals a covariance between questions 1 and 8. After fixing the covariance, the second order of CFA yields an acceptable fit with values of ($\chi^2 = 31.741$, $df = 19$, $sig = 0.033$; $GFI = 0.93$; $CFI = 0.968$; $IFI = 0.969$; $RMR = 0.032$; $RMSEA = 0.075$).

For the employee performance, the first order of CFA illustrated that questions 2,11, and 12 have a high covariance with other items. A CFA of a second-factor

model was performed after excluding items with excessive covariance. The estimated model has adequate goodness-of-fit measures ($\chi^2 = 45.95$, $df = 26$, $sig = 0.015$; $GFI = 0.93$; $CFI = 0.969$; $IFI = 0.97$; $RMR = 0.024$; $RMSEA = 0.076$)

Structural Equation Modeling:

From investigating the measuring models and assessing their validity through confirmative factor examining the relationship between study variables based on the structural model is feasible by looking at the measuring models and determining their validity using confirmative factor analysis. As shown in Table 5 and Fig 2, TQM has a positive, direct, and meaningful effect of 0.746 on employee performance (first hypothesis). TQM has a positive, direct, and meaningful effect of 0.844 on organisational learning (second hypothesis). OL has a positive, direct effect of 0.162 on employee performance (third hypothesis). TQM has a positive indirect effect of 0.137 on employee performance (fourth hypothesis). As a result, the fourth hypothesis, which states that the OL mediates the relationship between TQM and

employee performance, is validated. In addition, the path analysis results confirm the first, second, and third hypotheses.

Table (4) Conformity factors analysis – factors loading

NO	Items	Std loading
Total Quality Management		
1	Senior management is committed to the university to achieve quality and excellence	0.71
2	The university has a clear vision and mission	0.61
3	The university administration follows the scientific approach in making decisions	0.79
4	The university makes benchmark comparisons with other universities	0.73
5	Continuous improvement is a work orientation in my department	0.71
6	Continuous improvement needs are always identified before plans are developed	0.69
7	The university periodically evaluates training needs in order to develop appropriate plans	0.74
8	The university administration holds regular training courses to train employees to achieve quality	0.58
9	Employees have the opportunity to participate in decision-making processes related to their work	0.72
10	University employees have the appropriate qualifications and experience that enable them to improve the quality of work	0.69
11	There is flexibility to delegate employees according to their levels to make decisions that lead to improved performance	0.76
12	The university's senior management provides the necessary support and facilities to the quality departments and work teams to diagnose problems, determine their causes, and develop solutions to them	0.78
13	The university fosters an environment of teamwork, cooperation and initiative	0.79
14	Work orders and procedures are clear and simple	0.69
15	Communications within the university take place openly and continuously in all aspects	0.74
16	Employees are regularly evaluated according to quality control standards	0.69
17	The university seeks to provide its services to achieve the satisfaction of its customers	0.76
18	The university's goals are mainly directed towards achieving the satisfaction of its customers	0.64
19	The university motivates employees who participate and are active in the quality program	0.71
20	Total quality management leads to direct improvement in employee performance	0.65
21	Individual learning contributes to making total quality management improve employees performance	0.66
Organizational learning		
1	Knowledge is shared within university departments in an easy manner	0.67
2	Employees learn from their mistakes and make necessary improvements	0.61
3	The university stimulates continuous learning and development for all its members	0.73
4	My department has the tools to effectively document knowledge	0.67
5	The university uses new knowledge to improve its operations	0.74
6	The university encourages faculty members to serve the community	0.78
7	There is a system for providing feedback, and this is reflected in our work performance	0.79
8	The university learns from its mistakes	0.55
Employee performance		
1	I feel that my performance at work is always improving	0.70
2	I am satisfied with my current job performance	0.60
3	My work contributes significantly to achieving the mission and goals of the university	0.60
4	I receive adequate feedback on my performance from my boss	0.67
5	I have access to the resources and support needed to perform my job effectively	0.64
6	I have opportunities to grow and advance within the university	0.76
7	The incentives I receive raise my morale	0.80
8	I feel motivated and engaged in my work at the university	0.88
9	My spirit of initiative and creativity was strengthened in my work at the university	0.84
10	Adhere to university rules and regulations	0.44
11	I always strive to develop myself in my work	0.51
12	I always look for excellence in my work	0.58
13	The performance of employees is affected by the university's comprehensive quality management procedures	0.54

Table (5) Structural parameter estimates and goodness-of-fit indices

Hypotheses	Path	Standardized coefficients	Results
H1	TQM → Organizational learning	0.844***	Supported
H2	TQM → employee performance	0.746***	Supported
H3	Organizational learning → employee performance	0.162*	Supported
H4	TQM → Organizational learning → employee performance	0.137*	Supported
Chai – square = 0 RMSEA = ... GFI = 1 CFI = 1 IFI = 1			

* P < 0.1. ** P < 0.05. *** P < 0.01.

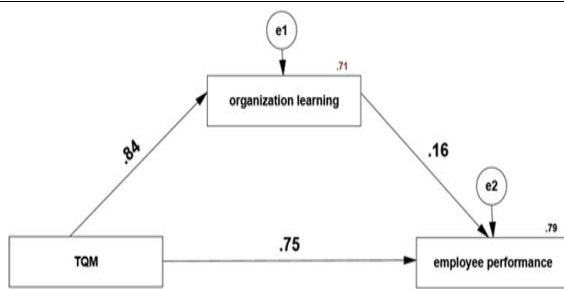


Fig. 2 Path coefficients of the research model

Findings:

The detailed findings from the study, when linked with the four hypotheses, present a comprehensive view of the relationships among TQM implementation, OL, and employee performance at the University of Tabuk:

1. Hypothesis 1 (H_1) posits a direct positive relationship between TQM implementation and employee performance. The findings show a significant direct effect with a coefficient of 0.746, confirming this hypothesis. This suggests that the more robust TQM is implemented within the university, the higher the employee performance levels are likely to be.

2. Hypothesis 2 (H_2) asserts that TQM implementation is positively related to OL. The findings support this with a direct effect coefficient of 0.844, indicating that effective TQM practices significantly contribute to enhancing the organisation's learning capabilities.

3. Hypothesis 3 (H_3) suggests a positive relationship between organisational learning and employee performance. The results validate this hypothesis, showing a direct effect of OL on employee performance with a coefficient of 0.162. This underscores the role of OL as a beneficial factor in improving employee performance.

4. Hypothesis 4 (H_4) proposes that OL mediates the relationship between TQM implementation and employee performance. The findings confirm this mediating role, with TQM having an indirect positive effect on employee performance through OL, evidenced by a coefficient of 0.137. This indicates that while TQM directly influences employee performance, it also does so indirectly by enhancing the organisation's learning capabilities, which in turn positively affects performance.

In summary, the path analysis supports all hypotheses, showing that TQM implementation is a significant predictor of both OL and employee performance, with organizational learning serving as a crucial intermediary that amplifies the positive impact of TQM on employee performance.

Discussion of the Findings:

Hypothesis 1 (H_1) posits a direct positive relationship between TQM implementation and employee performance. The findings show a significant direct

effect with a coefficient of 0.746, confirming this hypothesis. This hypothesis is supported by García et al. (2022), who support the findings by revealing positive relationships between quality management, innovation, and performance, while Sena (2020) emphasises the importance of quality management in organisational success, which is consistent with the hypothesis that TQM correlates with higher employee performance. Al Saffar and Obeidat (2020) found that TQM practices enhance employee performance through knowledge sharing, and Khan et al. (2019) observed that TQM practices in higher education institutions in Pakistan lead to increased employee satisfaction, commitment, and overall performance. Singh et al. (2018) reported a significant influence of TQM practices on organisational performance, noting the importance of OL and other factors. Prasad and Prabhudesai (2018) found that TQM practices have a positive impact on employee satisfaction in technical institutions in India, which in turn enhances employee performance. Zakaria et al. (2018) highlighted customer focus as the most crucial element of TQM in achieving outstanding service performance. Hasham (2018) asserts that TQM enhances performance in academic institutions by fostering a more effective organisational culture. Panuwatwanich et al. (2017) concluded that TQM is significantly associated with improved organisational performance in Vietnamese construction firms. Psomas and Antony (2017) observed improvements in quality performance and employee satisfaction due to TQM in Greek Higher Education Institutions. Mahmud and Hilmi (2014) proposed that TQM supports OL and performance in Malaysian SMEs. These studies, taken together, provide a robust validation of the hypothesis that TQM practices are positively correlated with improved performance, including employee performance, organisational learning, and satisfaction. Hypothesis 2, suggesting a strong positive link between TQM implementation and OL with a direct effect of 0.844, is well-supported by diverse research. Alsheikh et al. (2023) underscore TQM's critical role in strategic enhancement and problem-solving that leads to performance improvement, including learning. Yazdani et al. (2016) and Aminbeidokhti et al. (2016) establish that QM practices significantly influence OL and innovation, especially in Iran's automobile sector. Yusr et al. (2013) and Hung et al. (2011) support the connection between TQM, learning capability, and innovation performance, particularly within high-tech industries. Additionally, studies by Sisnuhadi D. (2014), Attafar A. et al. (2016), and Yazdani B. et al. (2016) confirm that both the soft and hard factors of TQM are positively associated with OL, emphasising the importance of TQM's thorough implementation for enhancing adaptability and efficiency. These studies affirm that TQM is a

significant determinant of OL across various industries and regions.

Hypothesis 3 indicates a positive effect of OL on employee performance, with a coefficient of 0.162. Multiple studies corroborate this: Do and Mai (2022) confirmed a systematic positive link across industries, Wibowo et al. (2020) saw its impact on Indonesian lecturers, and Hartono et al. (2017) reported a significant influence on lecturer performance. Pham et al. (2016) highlighted the benefit of employee decision-making involvement in learning and performance in Vietnam. Nafei (2015) and Hussein et al. (2014) demonstrated significant effects in healthcare and Malaysian higher education, respectively. Mihi Ramírez et al. (2011) and Akhtar et al. (2011) found positive correlations in performance, emphasising continuous improvement and knowledge creation. Studies by Lee and Lee (2014), Wan Hooi and Sing Ngui (2014), and Ni and Sun (2009) also align with your findings, illustrating the broad benefits of OL on performance.

Hypothesis 4 (H₄) posits that OL acts as a mediator in the relationship between TQM implementation and employee performance, evidenced by an indirect effect coefficient of 0.137. This hypothesis is supported by Yusr et al. (2013) and Tajouri & Lakhali (2024), who found that OL significantly mediates between TQM and innovation performance. Mahmood, Qadeer & Ahmed (2015) and Mahmud & Hilmi (2014) noted that OL boosts the impact of TQM on overall performance. Chaudhry et al. (2018), Akgün et al. (2014), and Tortorella et al. (2020) identify learning and innovation as key intermediaries that amplify TQM's positive effects on performance outcomes. Shuaib & He (2024) and Modarres & Pezeshk (2017) also affirm the mediating role of OL in enhancing business performance through TQM. Lastly, Basheer et al. (2018) underscore the substantial role of OL in bolstering the efficiency of TQM to improve firm performance. These findings collectively validate the mediating role of OL, as theorised in your study.

Recommendations:

Based on the findings from the study regarding OL as a mediator on the relationship between TQM and employee performance in higher education, a case study of the University of Tabuk, here are some recommendations:

1. Strengthening TQM Implementation: Given the significant positive relationship between TQM and employee performance, the university should enhance its TQM practices to improve employee performance levels further.
2. Enhancing OL: Since OL has been identified as a key mediator that enhances the impact of TQM on employee performance, developing strategies to bolster learning within the organisation is crucial.
3. Integrated Approach: Adopt an integrated approach that emphasises both TQM and OL to maximise employee performance. This could involve training programs, workshops, and continuous improvement initiatives that align TQM principles with learning opportunities.
4. Monitoring and Evaluating: To make sure TQM and OL projects produce the expected results in terms of improvements in employee performance, monitor and assess their efficacy regularly.

Limitations and Future Studies Directions:

While insightful, the study has limitations, such as its focus on a particular region or institution, that may hinder the broader relevance of the results. Moreover, its cross-sectional nature might not capture the evolution of observed phenomena over time.

For future research, it would be beneficial to extend the event window to comparative studies involving multiple higher education institutions to enhance the findings' generalizability. Moreover, Longitudinal research could provide insights into the changes and long-term effects of TQM on employee performance.

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التَّعَلُّمُ التَّنْظِيمِيّ كوسيط في العلاقة بين إدارة الجودة الشاملة وأداء العاملين في التعليم العالي: دراسة حالة جامعة تبوك.

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الملخص:

تبحث الدراسة في التفاعل بين إدارة الجودة الشاملة (TQM)، والتَّعَلُّمُ التَّنْظِيمِيّ (OL)، وأداء العاملين. وتهدف إلى معالجة الفجوة في فهم كيفية تأثير إدارة الجودة الشاملة على أداء العاملين، خاصة في سياق التَّعَلُّمِ العالي. وقد استند البحث إلى بيانات أولية جُمعت باستخدام استمارة استبيان غطت الأبعاد الرئيسة للدراسة. وقد استخدم أسلوب المعاينة الطَّبَقِيَّة لإجراء الدراسة على أعضاء هيئة التدريس بجامعة تبوك، وشملت العينة النَّهائِيَّة (120) مشاركًا في العينة التي شكَّلت (82%) من العينة. وكشفت النتائج عن وجود علاقة إيجابية قويَّة، بين إدارة الجودة الشاملة والتَّعَلُّمِ التَّنْظِيمِيّ وأداء العاملين. علاوة على ذلك، فقد أظهرت النتائج أنَّ التَّعَلُّمِ التَّنْظِيمِيّ يؤدي دورًا وسيطًا في العلاقة بين إدارة الجودة الشاملة وأداء العاملين. وقد قدَّمت نتائج الدراسة توصيات قائمة على الأدلة لتحسين جودة التَّعَلُّمِ، مع ما يترتب على ذلك من آثار بالنسبة للمسؤولين وصانعي السياسات.

الكلمات المفتاحية: إدارة الجودة الشاملة، التَّعَلُّمُ التَّنْظِيمِيّ، أداء العاملين.