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Enhancing the Quality of Higher Education in Saudi Arabia Through the Implementation of Total Quality Management Standards

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Abstract

Background:
As Saudi Arabia undergoes systemic reforms in alignment with Vision 2030, enhancing the quality of higher education has become a national priority. Total Quality Management (TQM) provides a strategic framework for continuous improvement, yet its practical application in Saudi universities remains inconsistent and under-explored.

Aim:
This study aimed to assess the current state of TQM implementation in Saudi higher education institutions and to develop and validate a practical framework to enhance quality outcomes.

Methods:
A sequential exploratory mixed-methods design was employed. In the qualitative phase, semi-structured interviews were conducted with 20 academic leaders from three public universities. Insights from thematic analysis informed the development of a structured questionnaire, which was administered to 297 faculty and administrative staff. Data were analyzed using descriptive statistics, t-tests, ANOVA, and structural equation modeling (SEM) to validate the proposed framework.

Results:
Findings revealed moderate levels of TQM implementation, with governance, leadership, and faculty engagement scoring highest. Resource and infrastructure quality emerged as a key constraint. SEM analysis confirmed that governance, strategic alignment, and continuous improvement were significant predictors of institutional quality (R^2 = 0.641). The validated six-domain TQM framework demonstrated strong reliability and convergent validity.

Conclusion:
The study highlights the need for integrated, culturally responsive quality management systems in Saudi higher education. Strategic leadership, infrastructure investment, and faculty development are critical for sustainable quality enhancement

Keywords: Total Quality Management, Higher Education, Saudi Arabia, Quality Assurance, Governance, Faculty Engagement, Institutional Performance

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Introduction

Enhancing the quality of higher education has become a pivotal objective for institutions globally, driven by the recognition that educational excellence directly influences national competitiveness and socioeconomic progress (Massy, 2003). In the Kingdom of Saudi Arabia, the higher education sector has witnessed substantial growth over recent decades, reflecting the country's ambitious socioeconomic development

plans, notably Vision 2030, which prioritizes education as a cornerstone for achieving sustainable development and innovation-driven growth (Saudi Vision 2030, 2016). However, despite significant investments and policy initiatives designed to boost educational standards, Saudi universities continue to face considerable challenges in maintaining consistent educational quality, which underscores the necessity of implementing comprehensive quality management frameworks.

Total Quality Management (TQM) represents a holistic approach aimed at long-term success through continuous quality improvement across all facets of an organization (Oakland, 2014). Originating in industrial and manufacturing sectors, TQM principles have been effectively adapted to higher education, where quality pertains not only to teaching and learning processes but also encompasses administration, research, infrastructure, student services, and community engagement (Venkatraman, 2007). Higher education institutions adopting TQM standards have demonstrated enhanced operational efficiencies, increased stakeholder satisfaction, improved educational outcomes, and greater institutional credibility on both national and international scales (Asif, Awan, Khan, & Ahmad, 2013).

In the Saudi context, higher education institutions have started recognizing the potential of TQM as an essential strategy for addressing the challenges of rapidly expanding enrollments, globalization pressures, technological advancements, and rising stakeholder expectations (Al-Otaibi, 2006). For example, King Saud University, King Abdulaziz University, and King Khalid University have each established specialized units and implemented various programs to improve quality assurance processes in alignment with national and international standards, including those recommended by the National Center for Academic Accreditation and Assessment (NCAAA) (Al-Mdawi, 2015). Despite these initiatives, there remains a discernible gap between policy formulation and effective implementation, primarily due to insufficient integration of quality standards into institutional culture and limited faculty engagement in quality assurance activities (Hamed, 2010).

Previous research has highlighted several critical barriers hindering the effective implementation of TQM standards within Saudi universities. Among these barriers are inadequate strategic alignment of quality initiatives, limited professional development opportunities for faculty and administrators, insufficient infrastructure, and a lack of systematic approaches for continuous assessment and improvement (Alharbi & Yusoff, 2012). Moreover, faculty members often perceive quality assurance activities as additional administrative burdens rather than integral parts of academic practice, reflecting limited internalization of quality principles into daily institutional operations (Alharbi & Yusoff, 2012; Gomma, 2010).

Given these prevailing challenges, this manuscript proposes a strategic framework for enhancing higher education quality in Saudi Arabia through comprehensive implementation of TQM standards. The proposed framework emphasizes cultivating a robust quality culture as a critical success factor, suggesting that true quality enhancement transcends procedural compliance and depends significantly on institutional culture transformation driven by leadership commitment, staff engagement, and strategic integration of quality into institutional governance and operations (Oakland, 2014).

This study is particularly timely as Saudi Arabia positions itself prominently within global education landscapes, aspiring to enhance its educational standards to match international benchmarks. Adopting TQM as a strategic approach aligns well with the overarching objectives of Vision 2030, which explicitly highlights educational excellence as vital for sustainable socioeconomic transformation, innovation, and global competitiveness (Saudi Vision 2030, 2016). Thus, the implications of successfully implementing TQM standards in Saudi universities extend beyond mere institutional improvements, potentially contributing significantly to the country's broader developmental objectives.

The current study adopts an integrative approach, synthesizing insights from global TQM practices in higher education, identifying context-specific challenges, and proposing targeted solutions tailored for Saudi universities. Through an exploratory mixed-method design, this research aims to contribute empirically grounded recommendations that can facilitate effective quality improvement practices, stakeholder collaboration, and sustainable institutional development. Drawing from transformational leadership theories and institutional change management principles, this research underscores the

importance of leadership roles in shaping institutional culture and influencing quality outcomes in higher education settings (Kotter, 2012).

Overall, enhancing the quality of Saudi higher education through TQM implementation is a multifaceted endeavor that requires a deliberate, strategic, and culturally responsive approach. By addressing the core challenges and leveraging institutional strengths, universities can significantly improve their educational offerings, enhance their reputation, and better meet stakeholder expectations

Methodology

Study Design

The present study employed a sequential exploratory mixed-methods approach, combining qualitative and quantitative methodologies. This design allowed for comprehensive exploration and validation of a practical framework aimed at enhancing the implementation of Total Quality Management (TQM) standards in Saudi higher education institutions. According to Creswell and Plano Clark (2017), mixed-methods research is particularly valuable in educational settings as it leverages the strengths of both qualitative and quantitative approaches, ensuring a robust, comprehensive understanding of complex phenomena.

Study Setting

This study was conducted across three major public universities in the Kingdom of Saudi Arabia, strategically selected based on their distinct geographic, administrative, and academic characteristics. These universities included King Saud University (Riyadh), King Abdulaziz University (Jeddah), and King Faisal University (Al Ahsa). Each institution represents a significant segment of Saudi higher education and offers diverse perspectives on implementing TQM, reflective of varying institutional sizes, histories, and administrative structures. Conducting the study across multiple sites allowed the capture of broader contextual factors and facilitated the generalization of the proposed framework to other institutions nationally.

Sample and Sampling

Participants for the qualitative phase included 20 key informants comprising senior administrators, quality assurance directors, deans, and experienced faculty members directly involved in quality management practices. Purposive sampling was utilized to ensure inclusion of knowledgeable informants who possess extensive experience and insights into the strategic and operational aspects of quality management at their institutions (Patton, 2015).

The quantitative phase involved a larger stratified random sample of 300 faculty and administrative staff members drawn proportionally from each institution. Stratification ensured representation based on employment role, years of experience, gender, and disciplinary area, thus providing a balanced cross-sectional snapshot of perceptions regarding the implementation and effectiveness of TQM standards across diverse university populations. The sample size calculation was based on Krejcie and Morgan's formula, ensuring statistical power and generalizability of findings (Krejcie & Morgan, 1970).

Data Collection Tools

The data collection was performed using two main instruments developed specifically for this study:

1. **Semi-structured Interview Guide**: Developed based on an extensive literature review and expert consultations, the interview guide included open-ended questions designed to explore participants' experiences, perceptions, and suggestions regarding TQM standards implementation. The questions focused on key thematic areas such as leadership commitment, faculty engagement, institutional governance, curriculum alignment, continuous improvement processes, and quality culture integration. Interviews lasted approximately 45–60 minutes each and were digitally recorded (with consent) and transcribed verbatim for accurate analysis.

2. **Structured Questionnaire**: Following the qualitative analysis and thematic extraction, a structured questionnaire was constructed, reviewed, and validated through expert panels for face and content validity. This instrument comprised multiple domains aligned with recognized TQM frameworks (e.g., ISO 9001:2015 standards and NCAAA guidelines). Domains included Leadership and Governance (10 items), Faculty and Staff Engagement (10 items), Strategic Alignment and Planning (8 items), Resource and Infrastructure Quality (8 items), Student-Centered Services (7 items), and Continuous Improvement Processes (7 items). All questionnaire items used a five-point Likert scale, ranging from 1 (strongly disagree) to 5 (strongly agree).

   Reliability testing through a pilot sample (n=30) indicated excellent internal consistency (Cronbach's alpha = 0.89), supporting the questionnaire's suitability for the full-scale data collection.

Data Collection Procedure

The study commenced with obtaining formal approval from the research ethics committees and administrative authorities of each participating university. Following approval, qualitative data collection was initiated. Key informants were contacted individually via email with detailed information regarding study objectives, voluntary participation, confidentiality assurance, and consent procedures. Interviews were scheduled based on participants' convenience, primarily conducted face-to-face in private office settings or via secure video conferencing platforms when required.

Upon completion and analysis of qualitative data, the structured questionnaire was distributed electronically using secure and accessible platforms such as SurveyMonkey, facilitating efficient data collection and ensuring anonymity. Potential respondents received personalized email invitations containing an explanatory letter outlining the purpose, benefits, confidentiality, and voluntary nature of participation, along with explicit consent statements. A reminder email was sent two weeks following the initial distribution, enhancing the overall response rate and ensuring adequate representation across strata.

Data Analysis

Data analysis involved systematic integration of qualitative and quantitative data:

- **Qualitative Data**: Interview transcripts underwent rigorous thematic analysis using Braun and Clarke's (2006) guidelines. This included familiarization with data, generating initial codes, identifying themes, reviewing and refining themes, defining and naming themes, and producing detailed narrative reports supported by verbatim quotes.
- **Quantitative Data**: Questionnaire responses were entered into SPSS version 27. Descriptive statistical analyses included frequencies, percentages, means, and standard deviations. Inferential analyses were performed using independent-samples t-tests and one-way ANOVA to examine differences among groups based on demographic and professional characteristics. Structural equation modeling (SEM) using SmartPLS 3.0 software was subsequently applied to validate the proposed TQM framework, examining factor loadings, convergent validity (average variance extracted >0.5), discriminant validity (Fornell-Larcker criteria), and model fit indices.

Ethical Considerations

Ethical integrity and participant protection were rigorously maintained throughout the research process. Prior to commencement, formal ethical approval was obtained from the Research Ethics Committees at each university involved, ensuring adherence to national and international ethical standards and protocols.

Participants received comprehensive information about the research objectives, procedures, potential benefits, and risks associated with their participation. Written informed consent was obtained from all participants in both qualitative and quantitative phases. Confidentiality and privacy were strictly observed; personal identifiers were anonymized immediately after data collection, with unique codes assigned to all participants. Digital data were stored securely on encrypted, password-protected computers accessible only to the principal investigator and research team members.

Results

This section presents the findings of the quantitative data analysis collected through the structured questionnaire distributed among faculty members and administrators from three selected Saudi universities (N=297). Six detailed tables illustrate the key findings related to perceptions of Total Quality Management (TQM) standards implementation, differences by demographic variables, and validation of the proposed TQM framework.

Participants' Demographic and Professional Characteristics

Table 1 presents the demographic characteristics of the study participants (N=297), reflecting a diverse and well-distributed sample across key variables. The majority of respondents were male (59.9%), while females constituted a substantial portion (40.1%), ensuring gender representation. Most participants were within the mid-career age group of 36 to 45 years (47.5%), with equal representation of younger (<35 years) and older (>45 years) professionals at 26.3% each. The educational qualifications reveal a highly educated sample, with 68.7% holding doctoral degrees and 31.3% holding master's degrees, indicating strong academic backgrounds. In terms of roles, faculty members formed the larger group (67.3%), while administrative staff accounted for 32.7%, providing insights from both academic and operational perspectives. Experience levels varied, with nearly half of the participants (45.8%) having 6 to 10 years of service, and the rest fairly balanced between less than 5 years (27.9%) and more than 10 years (26.3%). Notably, only 45.1% reported prior experience with Total Quality Management (TQM), highlighting a knowledge gap that may influence perceptions and implementation effectiveness within institutions.

Table 1: Demographic Characteristics of Participants (N=297)

Variable	**Category**	**n**	**%**
Gender	Male	178	59.9
	Female	119	40.1
Age (years)	<35	78	26.3
	36–45	141	47.5
	>45	78	26.3
Qualification	Ph.D.	204	68.7
	Master's	93	31.3
Current Position	Faculty member	200	67.3
	Administrative staff	97	32.7
Experience (years)	<5	83	27.9
	6–10	136	45.8
	>10	78	26.3
Experience in TQM	Yes	134	45.1
	No	163	54.9

Overall Perceptions of TQM Standards Implementation

Table 2 presents participants' perceptions of Total Quality Management (TQM) implementation across six key domains. The highest-rated domain was Governance and Leadership (M = 3.74, SD = 0.63), indicating that respondents viewed institutional leadership as relatively effective in steering quality initiatives and fostering a supportive policy environment. Faculty and Staff Engagement followed closely (M = 3.62, SD = 0.71), reflecting a moderate level of involvement and commitment among academic personnel in quality-related activities. The domain of Strategic Alignment and Planning scored moderately (M = 3.44, SD = 0.82), suggesting that while institutions are making efforts to align operations with broader quality goals, planning processes may still lack integration or consistency. Student-Centered Services (M = 3.41, SD = 0.77) and Continuous Improvement Processes (M = 3.29, SD = 0.88) were rated slightly lower, indicating perceived gaps in responsiveness to student needs and systematic evaluation mechanisms. The lowest score was observed in Resource and Infrastructure Quality (M = 2.93, SD = 0.94), highlighting resource limitations as a key barrier to comprehensive TQM implementation. These findings underscore the need for improved resource allocation and investment in infrastructure to support sustainable quality enhancement across institutions..

Table 2: Perceptions of TQM Implementation Across Domains (N=297)

TQM Domains	**Mean ± SD**
Governance and Leadership	3.74 ± 0.63
Faculty and Staff Engagement	3.62 ± 0.71
Strategic Alignment and Planning	3.44 ± 0.82
Student-Centered Services	3.41 ± 0.77
Continuous Improvement Processes	3.29 ± 0.88
Resource and Infrastructure Quality	2.93 ± 0.94

Differences in Perceptions Based on Current Position

Table 3 presents a comparative analysis of TQM domain scores between faculty members and administrative staff. While both groups reported relatively similar perceptions across most domains, statistically significant differences emerged in two key areas: Strategic Alignment and Planning and Resource and Infrastructure Quality. Administrative staff rated these domains higher than faculty, suggesting their closer involvement or greater awareness of strategic planning processes and resource management systems within their institutions. Specifically, the mean score for strategic alignment was 3.61 among administrative staff compared to 3.36 among faculty (p = 0.013), and for resource quality, it was 3.10 versus 2.85 respectively (p = 0.032). These differences may reflect role-based exposure, with administrative personnel likely participating more directly in operational planning and resource allocation activities. For the remaining domains—governance, engagement, student services, and continuous improvement—no significant differences were observed, indicating a general alignment in perceptions of TQM practices across institutional roles.

Table 3: Differences in TQM Domain Scores by Current Position (N=297)

Domains	**Faculty (n=200) Mean ± SD**	**Admin staff (n=97) Mean ± SD**	**t-value**	**p-value**
Governance and Leadership	3.72 ± 0.64	3.78 ± 0.59	-0.84	0.403
Faculty and Staff Engagement	3.61 ± 0.72	3.65 ± 0.68	-0.46	0.647
Strategic Alignment and Planning	3.36 ± 0.85	3.61 ± 0.74	-2.51	0.013*

Student-Centered Services	3.37 ± 0.78	3.50 ± 0.76	-1.31	0.192
Continuous Improvement Processes	3.24 ± 0.89	3.39 ± 0.87	-1.38	0.169
Resource and Infrastructure Quality	2.85 ± 0.96	3.10 ± 0.87	-2.15	0.032*

*Significant at p <0.05

Differences in TQM Perceptions by Experience in Quality Management

Table 4 reveals statistically significant differences in all TQM domains between participants with and without experience in quality management, with experienced individuals consistently reporting higher mean scores across all constructs. Notably, the largest mean differences are observed in "Governance and Leadership" (3.89 vs. 3.61) and "Faculty and Staff Engagement" (3.79 vs. 3.47), both showing strong significance at $p = 0.001$, suggesting that prior exposure to quality practices enhances appreciation and perceived effectiveness of institutional leadership and staff involvement in TQM initiatives. Similarly, the domains of "Strategic Alignment and Planning" and "Student-Centered Services" demonstrate significant variation ($p = 0.001$ and $p = 0.003$, respectively), indicating that experience contributes to a more favorable perception of institutional strategies and responsiveness to student needs. While "Continuous Improvement Processes" and "Resource and Infrastructure Quality" show comparatively smaller but still meaningful differences ($p = 0.015$ and $p = 0.003$), these results reinforce the idea that familiarity with quality management frameworks enhances awareness of both structural and operational aspects of TQM. Overall, the findings highlight the importance of professional development and capacity building in quality systems to strengthen institutional implementation and perceptions of TQM effectiveness.

Table 4: TQM Domain Scores by Experience in Quality Management (N=297)

Domains	**Experienced (n=134) Mean ± SD**	**Inexperienced (n=163) Mean ± SD**	**t-value**	**p-value**
Governance and Leadership	3.89 ± 0.58	3.61 ± 0.66	3.79	0.001*
Faculty and Staff Engagement	3.79 ± 0.63	3.47 ± 0.74	4.07	0.001*
Strategic Alignment and Planning	3.63 ± 0.77	3.29 ± 0.83	3.62	0.001*
Student-Centered Services	3.55 ± 0.72	3.29 ± 0.78	3.02	0.003*
Continuous Improvement Processes	3.42 ± 0.81	3.17 ± 0.91	2.44	0.015*
Resource and Infrastructure Quality	3.10 ± 0.88	2.78 ± 0.95	3.01	0.003*

*Significant at p <0.05

Structural Model Validation and TQM Framework Testing (SEM analysis)

Table 5 presents the results of the structural equation modeling (SEM) used to validate the proposed Total Quality Management (TQM) framework. The analysis reveals that all three predictors—governance and leadership, strategic alignment and planning, and continuous improvement processes—exert significant positive effects on the overall implementation of TQM standards in Saudi higher education institutions. Governance and leadership emerged as the strongest predictor (β = 0.412, t = 7.47, p = 0.001), underscoring the critical role of visionary leadership and effective institutional governance in driving quality-focused transformation. Strategic alignment and planning also demonstrated a substantial influence (β = 0.368, t =

6.91, p = 0.001), indicating that coherent planning processes aligned with institutional goals are essential for embedding quality at all levels. Continuous improvement processes, while having a slightly lower path coefficient (β = 0.281, t = 5.12, p = 0.001), still significantly contributed to the model, highlighting the importance of regular performance monitoring, feedback utilization, and adaptive change mechanisms. Collectively, these findings confirm the structural soundness of the model and support the theoretical proposition that successful TQM implementation in higher education is multidimensional, requiring an integrated approach to leadership, strategy, and improvement culture.

Table 5: SEM Path Analysis for TQM Framework Validation

Predictors	**Path Coefficient (β)**	**T-value**	**p-value**
Governance and Leadership	0.412	7.47	0.001*
Strategic Alignment and Planning	0.368	6.91	0.001*
Continuous Improvement Processes	0.281	5.12	0.001*

*Significant at $p < 0.001$, $R^2 = 0.641$

Reliability and Validity of the TQM Framework Instrument

Table 6 demonstrates strong internal consistency and acceptable convergent validity across all domains of the Total Quality Management (TQM) framework. Cronbach's alpha values for the six domains range from 0.817 to 0.918, all exceeding the commonly accepted threshold of 0.70, indicating that the items within each domain are reliably measuring the intended construct. Similarly, composite reliability values range from 0.842 to 0.926, further confirming the internal coherence and stability of the constructs. The Average Variance Extracted (AVE) values, which assess the proportion of variance captured by the construct relative to the variance due to measurement error, fall between 0.516 and 0.614. All AVE values exceed the minimum recommended threshold of 0.50, supporting adequate convergent validity. Notably, the domains of "Governance and Leadership" and "Strategic Alignment and Planning" exhibit particularly high reliability and AVE scores, suggesting that these constructs are both statistically robust and conceptually well-defined within the proposed framework.

Table 6: Reliability and Convergent Validity of TQM Framework

Domain	**Cronbach's α**	**Composite Reliability**	**AVE**
Governance and Leadership	0.918	0.926	0.605
Faculty and Staff Engagement	0.889	0.903	0.578
Strategic Alignment and Planning	0.864	0.887	0.614
Student-Centered Services	0.848	0.870	0.533
Continuous Improvement Processes	0.832	0.861	0.555
Resource and Infrastructure Quality	0.817	0.842	0.516

Discussion

This study sought to examine the implementation of Total Quality Management (TQM) standards in Saudi higher education and to develop a validated framework that can support institutional improvement efforts. The findings underscore that while there is a moderate level of TQM implementation across Saudi universities, significant variability exists between domains, institutions, and participant roles. Governance,

leadership, and faculty engagement emerged as critical enablers, whereas deficiencies in resources and infrastructure were recurrently noted as constraints. These insights echo long-standing concerns in the literature about the uneven and often superficial adoption of TQM practices in education, particularly in developing or transitioning systems (Srikanthan & Dalrymple, 2007; Kanji & Tambi, 1999).

One of the key findings of this study is the high level of perceived implementation in the domains of governance and leadership. This aligns with earlier research suggesting that committed, transformational leadership is a fundamental determinant of successful quality management in higher education (Trivellas & Dargenidou, 2009; Teeroovengadum et al., 2016). In Saudi Arabia, top-down policy shifts driven by Vision 2030 have pushed universities toward adopting more strategic and performance-based approaches (Alghamdi & Tight, 2019). However, the current study suggests that while leadership engagement exists at the formal level, practical execution and operational alignment remain inconsistent, particularly when viewed through the lens of faculty and staff.

The domain of faculty and staff engagement showed high internal reliability and favorable mean scores, supporting the notion that human capital is central to quality outcomes in higher education (Kivistö & Pekkola, 2017). Engaged faculty are more likely to participate in curriculum development, assessment activities, and student-centered learning strategies (Zhou & George, 2001). However, qualitative insights and subgroup analysis reveal that engagement levels are influenced by prior exposure to quality training and institutional support structures. This is consistent with previous work highlighting the importance of professional development and recognition systems in cultivating a sustainable quality culture (Bayraktar et al., 2008; Psomas & Antony, 2017).

The moderate scores in strategic alignment and planning suggest that universities may struggle with translating policy directives into actionable institutional strategies. According to Owlia and Aspinwall (1996), effective quality planning requires the integration of stakeholder needs, institutional mission, and measurable outcomes. Without this alignment, TQM becomes procedural rather than transformative. In this study, administrative staff reported higher satisfaction with strategic planning processes than faculty members, which may reflect differing levels of involvement or access to strategic dialogues. These findings resonate with studies from other Gulf countries, where administrative centralization often results in limited participatory governance (Al-Dosary & Rahman, 2005).

The relatively lower scores in student-centered services and continuous improvement domains further illustrate that while structural reforms may be underway, the cultural dimensions of quality remain underdeveloped. According to Harvey and Green (1993), quality in higher education must be multidimensional, including dimensions of excellence, fitness for purpose, value for money, and transformation. The present study indicates that while fitness for purpose is being pursued via policy and accreditation, transformation—especially in terms of student experience and pedagogical innovation—is lagging. Similar concerns have been voiced in regional literature, where student feedback mechanisms and support services are either absent or symbolic (Al-Mohsen & Al-Kahtani, 2013).

Perhaps the most critical area of concern lies in the resource and infrastructure quality domain, which received the lowest mean scores across the sample. Lack of physical and technological infrastructure not only impedes academic performance but also undermines confidence in the viability of TQM frameworks (Venkatraman, 2007). In the Saudi context, while significant investments have been made in higher education infrastructure, the distribution and usability of these resources remain inequitable (Alfahadi, 2012). Participants in this study noted insufficient access to modern labs, student services, and updated digital platforms—limitations that directly hinder the operationalization of quality standards.

The study also employed structural equation modeling (SEM) to validate a six-domain TQM framework. The model showed excellent reliability, convergent validity, and predictive power, with governance, strategic alignment, and continuous improvement emerging as the strongest predictors of perceived quality. These findings are consistent with earlier models proposed by Oakland (2003) and adapted for educational contexts by Dahlgaard et al. (1998). Importantly, this study contributes to the literature by contextualizing

these constructs within Saudi higher education, highlighting the need for culturally and structurally sensitive quality models.

An important theoretical implication of the findings is the validation of TQM as a socio-organizational rather than merely technical intervention. As noted by Wilkinson and Witcher (1993), successful TQM in education depends not just on systems and procedures but on culture, values, and sustained engagement. The current study supports this claim by demonstrating that exposure to quality training, institutional commitment, and stakeholder inclusion significantly affect perceptions and outcomes related to TQM.

The findings also carry practical implications for higher education policy and management in Saudi Arabia. First, universities should adopt integrated quality management systems that go beyond compliance and reporting, embedding quality as a shared institutional value. Second, targeted investment in infrastructure—particularly in under-resourced faculties and campuses—is essential to achieve equity in quality outcomes. Third, faculty development programs should prioritize quality literacy and engagement strategies, enabling academic staff to contribute meaningfully to institutional quality goals.

Despite its contributions, this study is not without limitations. The cross-sectional design limits causal inferences, and the reliance on self-reported data may introduce bias. Moreover, while the sample included three major universities, the generalizability to smaller or private institutions remains uncertain. Future research should consider longitudinal designs to examine the evolution of quality culture over time and explore student perspectives more deeply, as their voice is essential in shaping service quality and institutional improvement.

In conclusion, this study reinforces the critical role of Total Quality Management in transforming Saudi higher education. It affirms that governance, faculty engagement, strategic planning, and continuous improvement are foundational to institutional excellence. However, without addressing persistent gaps in resources, culture, and stakeholder participation, TQM efforts risk becoming performative. The validated framework developed herein offers a practical roadmap for universities seeking to institutionalize quality and align with national aspirations under Vision 2030. Moving forward, a deeper commitment to inclusive quality culture—rather than procedural compliance—will be necessary to position Saudi universities as global academic leaders.

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Reference

1. Al-Dosary, A. S., & Rahman, S. M. (2005). Saudization (Localization) – A critical review. *Human Resource Development International, 8*(4), 495–502. https://doi.org/10.1080/13678860500270689
2. Alfahadi, A. M. (2012). The impact of quality assurance programs on higher education institutions in Saudi Arabia. *Procedia - Social and Behavioral Sciences, 47*, 345–349.
3. Alghamdi, A. K., & Tight, M. (2019). Quality in higher education in Saudi Arabia. *Quality Assurance in Education, 27*(4), 387–407.
4. Al-Mohsen, M., & Al-Kahtani, S. (2013). Quality assurance practices in Saudi universities: Issues and perspectives. *International Journal of Education and Research, 1*(12), 1–12.
5. Bayraktar, E., Tatoglu, E., & Zaim, S. (2008). An instrument for measuring the critical factors of TQM in Turkish higher education. *Total Quality Management, 19*(6), 551–574. https://doi.org/10.1080/14783360802024474
6. Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology, 3*(2), 77–101. https://doi.org/10.1191/1478088706qp063oa
7. Creswell, J. W., & Plano Clark, V. L. (2017). *Designing and conducting mixed methods research* (3rd ed.). Sage Publications.

8. Dahlgaard, J. J., Kristensen, K., & Kanji, G. K. (1998). *Fundamentals of total quality management: Process analysis and improvement.* Chapman & Hall.
9. Harvey, L., & Green, D. (1993). Defining quality. *Assessment and Evaluation in Higher Education, 18*(1), 9–34. https://doi.org/10.1080/0260293930180102
10. Kanji, G. K., & Tambi, A. M. (1999). Total quality management in UK higher education institutions. *Total Quality Management, 10*(1), 129–153.
11. Kivistö, J., & Pekkola, E. (2017). Quality assurance in higher education. In J. C. Shin & P. Teixeira (Eds.), *Encyclopedia of International Higher Education Systems and Institutions*. Springer. https://doi.org/10.1007/978-94-017-9553-1_136-1
12. Krejcie, R. V., & Morgan, D. W. (1970). Determining sample size for research activities. *Educational and Psychological Measurement, 30*(3), 607–610. https://doi.org/10.1177/001316447003000308
13. Oakland, J. S. (2003). *Total quality management: Text with cases* (3rd ed.). Butterworth-Heinemann.
14. Owlia, M. S., & Aspinwall, E. M. (1996). A framework for the dimensions of quality in higher education. *Quality Assurance in Education, 4*(2), 12–20.
15. Patton, M. Q. (2015). *Qualitative research & evaluation methods: Integrating theory and practice* (4th ed.). Sage Publications.
16. Psomas, E. L., & Antony, J. (2017). Total quality management elements and results in higher education institutions: The Greek case. *Quality Assurance in Education, 25*(2), 206–223.
17. Srikanthan, G., & Dalrymple, J. F. (2007). A conceptual overview of a holistic model for quality in higher education. *International Journal of Educational Management, 21*(3), 173–193.
18. Teeroovengadum, V., Kamalanabhan, T. J., & Seebaluck, A. K. (2016). Measuring service quality in higher education: Development of a hierarchical model. *Quality Assurance in Education, 24*(2), 244–258.
19. Trivellas, P., & Dargenidou, D. (2009). Leadership and service quality in higher education: Investigating the mediating effect of job satisfaction. *International Journal of Quality and Service Sciences, 1*(3), 294–310.
20. Venkatraman, S. (2007). A framework for implementing TQM in higher education programs. *Quality Assurance in Education, 15*(1), 92–112.
21. Wilkinson, A., & Witcher, B. J. (1993). Holistic total quality management must take account of political process. *Total Quality Management, 4*(1), 47–54.
22. Zhou, J., & George, J. M. (2001). When job dissatisfaction leads to creativity: Encouraging the expression of voice. *Academy of Management Journal, 44*(4), 682–696. https://doi.org/10.5465/3069410