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# The Mediating Role of Organizational Culture in the Relationship between Quality Management and Employee Satisfaction in Universities

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## Abstract

This study examines the mediating role of organizational culture in the relationship between quality management and employee satisfaction in universities. While quality management (QM) practices are widely implemented to enhance institutional performance, their direct impact on employee satisfaction remains a subject of debate. Organizational culture, defined by shared values, norms, and behaviors, plays a critical role in shaping employees' perceptions of QM initiatives. Using a structured research framework, this study explores how different cultural settings influence the effectiveness of QM in fostering employee engagement and job satisfaction. By integrating the Denison Organizational Culture Model and Quality Management (QM) principles, the study assesses how involvement, adaptability, consistency, and mission within an institution moderate the effects of QM on employees. The findings highlight that organizational culture acts as a significant mediator, enhancing the positive impact of QM on employee satisfaction. The study offers theoretical and practical implications for university administrators seeking to develop quality-driven strategies that prioritize both institutional effectiveness and employee well-being.

**Keywords:** Organizational Culture, Quality Management, Employee Satisfaction, Universities.

## Introduction:

Quality management is essential in both service and production sectors, helping organizations reduce costs, defects, and waste. Quality Management (QM) enables businesses to identify inefficiencies, control waste, and minimize delays, ultimately improving profitability and operational effectiveness (Ibidunni et al., 2023).

In the ever-evolving landscape of higher education, universities face increasing pressure to enhance service quality, improve institutional efficiency, and ensure employee satisfaction. The role of quality management (QM) in academic institutions has become a critical area of research, as it directly influences operational effectiveness, institutional reputation, and the overall working environment for faculty and administrative staff. Universities that implement robust quality management systems can achieve significant improvements in administrative processes, teaching methodologies, and research output. However, despite the widespread adoption of QM principles in higher education, their direct impact on employee satisfaction remains a subject of debate. This research explores the interplay between quality management and employee satisfaction, emphasizing the mediating role of organizational culture in shaping this relationship.

Quality management encompasses a set of principles and practices aimed at improving institutional performance through continuous assessment, feedback mechanisms, and stakeholder engagement. In the context of universities, QM involves strategies such as Total Quality Management (TQM), ISO standards, and accreditation frameworks that help institutions monitor and enhance their educational services. Previous studies indicate that QM contributes to improved job satisfaction by fostering clear communication, goal alignment, and professional development opportunities (Kanji et al., 1999; C. H. Nguyen et al., 2021). However, QM alone does not guarantee high employee satisfaction, as cultural factors within the organization often determine the extent to which these practices are effectively implemented.

Organizational culture plays a significant role in influencing performance, with growing interest in its impact across corporate firms (Strengers et al., 2022). Organizational culture refers to the shared values, beliefs, and behaviors that shape the work environment within an institution. Research suggests that organizational culture plays a pivotal role in the successful implementation of quality management practices, acting as a bridge between institutional policies and employee perceptions (Cocozza, 2023). For instance, a positive organizational culture,

characterized by collaboration, trust, and employee involvement, may enhance the effects of QM by creating a supportive work environment and hinder employee satisfaction despite rigorous quality standards. Understanding the mediating role of organizational culture is crucial for universities to align quality management practices with employee expectations and institutional goals.

Employee satisfaction in universities is a critical determinant of institutional success, as it directly impacts faculty retention, job performance, and overall organizational commitment (Nurdiansyah et al., 2020; Sabrina & Ikhsan, 2023). Faculty members and administrative staff who experience job satisfaction are more likely to engage in innovative teaching, research, and service activities that contribute to the university's growth. Factors such as work environment, leadership support, recognition, and professional development opportunities play a key role in shaping employee satisfaction. However, the relationship between quality management and employee satisfaction is often complex and influenced by the university's cultural dynamics.

While extensive research has been conducted on quality management and employee satisfaction independently, limited studies have explored the mediating role of organizational culture in this relationship within the higher education sector. This study aims to fill this gap by investigating how different cultural settings within universities influence the effectiveness of QM practices in enhancing employee satisfaction.

## 1. Literature review:

### 2.1 Organizational Culture:

Organizational culture is defined as the set of differentiated elements between organizations, including customs, norms, rules, symbols, ideologies, beliefs, rituals, and myths (Tulcanaza-Prieto et al., 2021). Defining organizational culture remains complex, leading to the development of frameworks like the Competing Values Framework (CVF) by (Cameron & Quinn, 2011). This framework categorizes organizational culture into four types:

- Clan Culture: Emphasizes internal focus, flexibility, teamwork, trust, and open communication (Cameron & Quinn, 2011).
- Adhocracy Culture: Focuses on external flexibility, innovation, creativity, and risk-taking (Ford et al., 1985)
- Market Culture: Driven by external stability, competition, goal-setting, and aggressive strategies (Cameron & Quinn, 2011).
- Hierarchy Culture: Based on internal stability, formalization, rules, and efficiency (Ford et al., 1985).

The Organizational Culture Assessment Instrument (OCAI) is widely used to evaluate these culture types, often complemented by qualitative methods like interviews to uncover deeper cultural layers.

Organizational culture (OC) is defined as a set of norms, values, and beliefs that influence employee behavior (Lorincova et al., 2024). Denison et al., (2014) further describe OC as deeply rooted values and practices within an organization. Four key OC traits were identified in this research: involvement, consistency, adaptability, and mission. These traits were later expanded into measurable indexes to assess organizational strength and flexibility.

Denison's OC model has been widely applied, including in IT organizations, and is considered a reliable tool for assessing culture (Kaur Bagga et al., 2023). High-performing organizations exhibit strong levels of these four traits:

- **Involvement:** fosters teamwork, employee empowerment, and commitment.
- **Consistency:** ensures internal integration, clear business practices, and a shared code of conduct.
- **Adaptability:** helps organizations respond to external changes and prioritize customer needs.
- **Mission:** provides long-term direction and stability by aligning goals with the external environment (Denison et al., 2014).

This study adopts Denison's model to evaluate organizational culture.

**2.2 Quality Management:**

Quality management has evolved significantly over the past century. Initially focused on inspection in the early 1900s, it advanced in the 1930s with statistical quality control by Walter Shewhart. By the 1950s, quality pioneers like W. Edwards Deming, Joseph M. Juran, and Philip B. Crosby introduced key concepts such as statistical process control, managerial quality control, and zero defects. From the 1960s, quality management became a company-wide approach, integrating various practices to ensure high-quality outputs. The establishment of the International Organization for Standardization (ISO) in 1987 further reinforced global quality improvement efforts. The ISO 9000 series, particularly ISO 9001 (2015), provides a structured framework based on principles like customer focus, leadership, and continuous improvement, following the PDCA (Plan–Do–Check–Act) cycle (M. H. Nguyen et al., 2018).

Zhang et al., (2012), classify quality management practices into quality exploitation (refining existing processes) and quality exploration (innovating new approaches). However, (Cole & Matsumiya, 2007) highlight a bias toward exploitation, limiting organizational ambidexterity. To address this, researchers such as (Benner & Tushman, 2015; Dahlgaard-Park, 2011) advocate for a balanced approach to quality management that fosters both efficiency and innovation. Backström, (2017) introduces the quality dilemma, which emphasizes balancing exploitation and exploration, and propose emergent quality improvement, integrating both within a single system. They further link internal efficiency ("doing things right") with external effectiveness ("doing the right things") as essential for managing quality dynamics and suggest strategies to achieve this balance (Martin et al., 2021).

Building on the foundational principles of quality management pioneers, this study focuses on internal quality management, defining it as a companywide, cross-functional approach. It emphasizes key practices such as process management, quality-driven product and service design, problem-solving, training, quality data and reporting, and continuous improvement. To evaluate internal quality management practices, the study examines eight widely accepted constructs: top management support, quality training, product/service design, quality data and reporting, process management, continuous improvement, problem-solving, and rewards (M. H. Nguyen et

al., 2018). These constructs are derived from previous research and represent essential elements of effective quality management.

**2.3 Employee Satisfaction:**

Employee satisfaction lacks a unified definition but is widely recognized as a crucial factor in organizational success. Satisfied employees exhibit positive attitudes, leading to increased productivity and overall performance (Rodzoś, 2019). It is an emotional response to one's job conditions. High job satisfaction enhances employees' motivation and commitment, ultimately contributing to organizational effectiveness (Zayed et al., 2022).

According to (Al-Fakeh et al., 2020), Employee satisfaction (ES) is essential for organizational growth and is widely studied in organizational sciences. It reflects an employee's emotional response to their job based on the comparison between expected and actual outcomes (Sarker & Ashrafi, 2018). ES is linked to productivity, personal well-being, and a sense of achievement (Ahamed, 2014). Employees are more fulfilled when they enjoy their work and find it rewarding (Noah & Steve, 2012). Additionally, a supportive work environment plays a crucial role in sustaining ES, as an unsatisfactory workplace can lower employee morale (O. et al., 2018).

Employee satisfaction is influenced by many factors such as empowerment, job security, and participation in decision-making (Zamanan et al., 2020). Providing employees with performance-related information enhances satisfaction, while a controlling approach reduces it (Idris et al., 2018; Masood et al., 2014). Job security fosters trust, loyalty, and performance, reducing workplace stress (Imran, 2015). Additionally, employee participation in decision-making enhances their sense of value and belonging, leading to greater motivation and engagement (Vlachos et al., 2024).

**3.Hypothesis Formulation:**

**3.1 Quality Management and Employee Satisfaction:**

The effects of Quality Management (QM) on employees' satisfaction has been studied extensively in worldwide. However, the studies about the effects of QM and job satisfaction can still be explored. The results of ("The Effects of Total Quality Management Practices to Employees' Job Satisfaction," 2022) study supported that, top management commitment and reward and recognition are the most influential factors of QM practices towards employee' satisfaction.

Another study by (Ming, 2023), highlight the importance of tailoring QM practices to the specific needs and context of the workforce, while also recognizing the significance of employee involvement, supportive leadership, effective communication, and teamwork. Also the results of (Fatimah et al., 2016) research, revealed that Quality Management has a positive and significant impact on employees' performance, the employees' satisfaction has a positive and significant impact on employees' performance. Therefore, the first hypothesis is proposed as follows:

**H1:** there is a significant relationship between the Quality Management and employees' satisfaction.

**3.2Organizational Culture and Employee Satisfaction:**

When the organizational culture works optimally, it should have a significant effect on the satisfaction of all parties, including employee satisfaction. The dimensions of organizational culture positively impact employees' satisfaction and that job satisfaction significantly influences organizational commitment (Dung PHAM THI et al., 2021).

According to Ali et al., (2022) research findings, it is revealed that there is a significant impact of organizational culture on employee satisfaction. When, the management of an organization focuses highly on providing supportive organizational culture, then, it helps in enhancing the satisfaction level of employees. The satisfied employees in an organization serve as a competitive advantage. This leads to the following hypothesis:

**H2:** there is a significant relationship between the Organizational Culture and Employee Satisfaction.

### 3.3Quality Management and Organizational Culture:

Quality management necessitates a supportive organizational culture to set the ground for excellence. At the same time, it modifies the inner traits of the organizational culture. Such cultural changes should be carefully handled to ensure a dependable quality orientation. Achieving organizational excellence involves mastering the interplay between quality management and organizational culture (Palumbo & Douglas, 2024).

The findings of (Prajogo & McDermott, 2005) support the pluralist view, wherein different subsets of TQM practices are determined by different types of cultures. Interestingly, hierarchical culture was found to have a significant relationship with certain practices of QM. Additionally, the findings indicate that although the cultural factors underpinning different elements of QM are dissimilar, even antagonistic, organizations can implement them in harmony. While (Abdul et al., 2019) found that the correlation and effect between the implementation of Total Quality Management and organizational culture on organizational performance. Total Quality Management constructs engaged a positive role in improving organizational performance. Based on these insights, it can be hypothesized that:

**H3:** there is a significant relationship between Quality Management and Organizational Culture.

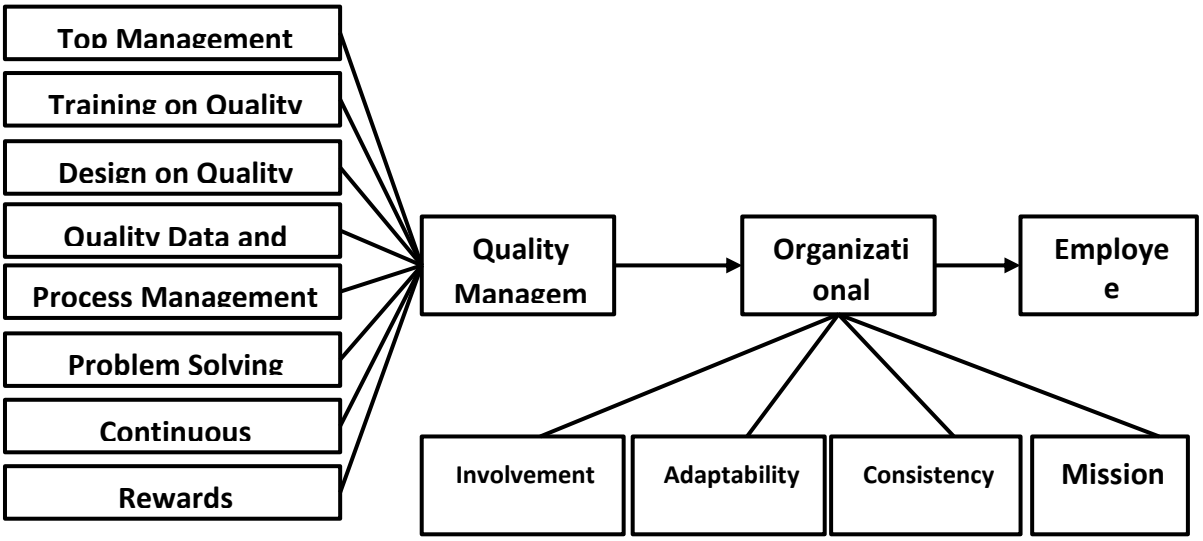
### 3.4The Mediating Role of Organizational Culture:

A strong organizational culture fosters shared values, norms, and behaviors that align with quality management principles, thereby enhancing employees' perceptions of their work environment. When organizations emphasize continuous improvement, teamwork, and customer focus employees are more likely to feel engaged, valued, and satisfied with their roles. Moreover, a culture that supports learning, innovation, and empowerment reinforces the positive impact of quality management practices by encouraging employees to actively participate in quality initiatives. This alignment ensures that quality management is not merely a set of processes but an integral part of the organizational identity, leading to greater employee satisfaction. Consequently, organizational culture acts as a bridge that translates quality management efforts into a more motivated and committed workforce. Given these insights, the following hypothesis can be proposed:

**H4:** The Organizational Culture mediates the relationship between Quality Management and employees' satisfaction.

Figure (1) illustrates the conceptual framework of this study, depicting the mediating role of organizational culture in the relationship between quality management and employee satisfaction

**Figure (1) Conceptual framework**




## 4. Methodology:

Current research aims to detect the Mediating Role of Organizational Culture in the Relationship between Quality Management and Employee Satisfaction in Universities. The study will consider the impact of Quality Management and Organizational Culture as a basis for evaluating their contributions to the Employee Satisfaction. An empirical approach is adopted by developing a research framework that identifies and measures the relationships between the research factors. A quantitative methodology is utilized, employing a non-experimental cross-sectional design and testing causal hypotheses using Statistical Package for the Social Sciences SPSS. The choice of this software is justified for two reasons: first, it is suitable for studies involving small sample sizes, and second, it effectively addresses data abnormality issues, which parametric tests may encounter (Elolymy et al., 2024).

### 4.1Sample and Data Collection:

In this study, a questionnaire was employed as the primary data collection instrument. The questionnaire items were developed based on the five key constructs examined in the research. Data collection was conducted in two stages: first, a pilot test was carried out, followed by the main data collection for model evaluation. Before distribution, a preliminary pilot study was conducted to enhance respondents' comprehension of the questionnaire. The questionnaire was validated by expert practitioners, academics, and a randomly selected group of 40 employee in the university. Based on feedback from the pilot test, modifications were made to improve the clarity of terms and wording to ensure respondents fully understood the intent of each question.

The study population comprised all employees in the university of Basrah. Questionnaires were distributed between February and March 2025 using a purposive sampling technique to obtain a representative sample. A total of 382 responses were collected, with 376 valid and complete responses, resulting in a 98.4% response rate for data analysis. The sample size was determined based on the guideline that it should be at least ten times the number of research variables used in the analysis, with a minimum threshold of 80 samples (Elolymy et al., 2024).

The collected responses were provided by startup owners and key decision-makers involved in innovation management, such as managers, directors, and engineers. While guidance was available to respondents during questionnaire completion, participation was voluntary, ensuring responses were provided independently and without researcher influence. Table (1) summarizes the demographic characteristics of the respondents, highlighting their direct roles in organizational innovation management.

**4.2 Instrument Development:**

The data for this study was collected through the distribution and responses to qualitative questionnaires. The items in the questionnaire were adapted from previous studies related to the five variables of the study. A 5-point Likert scale was used to measure the items in the questionnaire. Point 1 represents "strongly disagree," while point 5 represents "strongly agree". The Likert scale was chosen because it is considered more suitable for a wide range of respondents, particularly when using an odd-numbered scale (Elolymy et al., 2024).

**4.3 Construct Operationalization:**

This study classifies quality management as independent variable, organizational culture as a mediating variable, while employee satisfaction is the dependent variable.

**4.3.1 Independent Variable:**

As mentioned, the research framework includes one independent variable: quality management. This variable consists of 8 dimensions: top management Support for Quality Management, training on quality, Design for quality, Quality Data and Reporting, Process Management, problem solving, continuous improvement and reward.

**4.3.2 Mediating Variable:**

The organizational culture is the mediating variable of the study, represented by four dimensions: Involvement, adaptability, Consistency, mission. Each of these dimensions is measured using the statement items outlined in the instrument development section.

**4.3.3 Dependent Variable:**

Employees' satisfaction serves as the dependent variable in this study. Employees' satisfaction is influenced by two variables. To optimize Employees' satisfaction, it is crucial to align quality management and organizational culture, as these two variables play a significant role in achieving Employees' satisfaction

### 4.4 . Data analysis:

Advanced software supports various multivariate analyses. Due to the nature of variables in this study, SPSS was chosen as the appropriate technique to analyze the collected data for this study (Elolymy et al., 2024; Henseler, 2021; Scaliza et al., 2022).

The study framework was evaluated in two stages: the reliability and the validity. The analysis focused on the ability of the items to represent constructs, ensuring validity and reliability. Evaluation included convergent validity (checked via outer loading values and AVE), composite reliability (assessing internal consistency), and discriminant validity (measuring the distinctiveness of constructs). Convergent validity was accepted with outer loading values above 0.5, ideally between 0.7–0.8. Composite reliability values between 0.6 and 0.7 were considered acceptable (Gefen et al., 2000). Discriminant validity was analyzed using Fornell & Larcker (1981) criteria, ensuring that the square root of AVE for each construct exceeded its correlations with other constructs.

## 1. Results:

### 5.1 Sample characteristics:

The current study sample contains 376 respondents from different sections, which is based on the three factors that were observed during the framework building process. As summed up in Table 1, this demographic distribution offers a thorough understanding of the sample's diverse organizational characteristics.

**Table (1) Sample characteristics**

| Characteristics (N=376) | | Number | Percentage (%) |
|---|---|---|---|
| **Gender** | Male | 180 | 47.87% |
| | Female | 196 | 52.13% |
| **Age** | < 25 | 24 | 6.38% |
| | 25 – 34 | 108 | 28.72% |
| | 35 – 44 | 122 | 32.45% |
| | 45 – 54 | 109 | 28.99% |
| | Above 55 | 13 | 3.46% |
| **Education level** | Bachelor | 158 | 42.02% |
| | Master | 97 | 25.80% |
| | PhD | 108 | 28.72% |
| | Others | 13 | 3.46% |
| **Years of experience** | < 5 | 86 | 22.87% |
| | 5 – 10 | 64 | 17.02% |
| | 10 – 15 | 54 | 14.36% |
| | Above 15 | 172 | 45.74% |

Source: Author's own work

### 5.2 Assessment of Multicollinearity:

Tolerance and variance inflation factor (VIF) were examined to identify multicollinearity issue. (Hair et al., 2019) recommended that multicollinearity is a concern if VIF value is higher than 5; and tolerance value is <0.20. Multicollinearity was not detected among the exogenous latent constructs, as all variance inflation factor (VIF) values were below 5, and tolerance values exceeded 0.20. These results confirm that multicollinearity is not a concern in this study. Table 3 presents the VIF and tolerance values for the analyzed constructs

**. Table (2) descriptive statistics and FA results**

| Variable | Code | Mean | SD | Loading (> 0.5) | Alpha (> 0.7) |
|---|---|---|---|---|---|
| Quality management | | | | | |
| **Top management Support for Quality Management** | | | | | .898 |
| | TMS1 | 2.992 | 1.258 | .670 | |
| | TMS3 | 3.089 | 1.250 | .609 | |
| | TMS4 | 3.126 | 1.327 | .654 | |
| | TMS5 | 3.111 | 1.184 | .624 | |
| **Training on quality** | | | | | .831 |
| | TOQ1 | 2.973 | 1.174 | .745 | |
| | TOQ2 | 3.149 | 1.228 | .695 | |
| | TOQ3 | 2.957 | 1.158 | .739 | |
| **Design for quality** | | | | | .881 |
| | DFQ1 | 3.041 | 1.202 | .721 | |
| | DFQ2 | 3.101 | 1.162 | .632 | |
| | DFQ6 | 3.110 | 1.224 | .844 | |
| | DFQ5 | 3.082 | 1.176 | .821 | |
| | DFQ6 | 2.975 | 1.099 | .728 | |
| **Quality Data and Reporting** | | | | | .890 |
| | QDR1 | 3.019 | 1.230 | .845 | |
| | QDR2 | 3.285 | 1.255 | .704 | |
| | QDR3 | 3.372 | 1.270 | .678 | |
| | QDR4 | 3.137 | 1.165 | .687 | |
| | QDR5 | 3.185 | 1.099 | .607 | |
| **Process Management** | | | | | .830 |
| | PRM2 | 2.970 | 1.281 | .728 | |
| | PRM4 | 3.163 | 1.259 | .713 | |
| | PRM5 | 2.995 | 1.305 | .756 | |
| **Problem solving** | | | | | .791 |
| | PRS1 | 3.097 | 1.251 | .577 | |
| | PRS2 | 3.131 | 1.180 | .711 | |
| | PRS3 | 3.346 | 1.188 | .734 | |
| **Continuous improvement** | | | | | .853 |
| | CIM2 | 3.183 | 1.179 | .795 | |
| | CIM3 | 3.199 | 1.196 | .605 | |
| | CIM4 | 2.843 | 1.267 | .634 | |

| | | | | | |
|---|---|---|---|---|---|
| **Reward** | | | | | .847 |
| | RWD1 | 2.995 | 1.312 | .831 | |
| | RWD2 | 3.326 | 1.225 | .619 | |
| | RWD3 | 3.074 | 1.265 | .680 | |
| Organizational culture | | | | | |
| **Involvement** | | | | | .821 |
| | IVL1 | 3.172 | 1.208 | .623 | |
| | IVL2 | 3.597 | 1.118 | .654 | |
| | IVL3 | 3.237 | 1.230 | .663 | |
| | IVL4 | 2.788 | 1.220 | .645 | |
| | IVL5 | 3.070 | 1.309 | .627 | |
| | IVL6 | 3.266 | 1.200 | .660 | |
| **Adaptability** | | | | | .755 |
| | ADP1 | 2.780 | 1.282 | .502 | |
| | ADP2 | 2.948 | 1.240 | .595 | |
| | ADP3 | 2.981 | 1.207 | .552 | |
| | ADP4 | 2.951 | 1.241 | .567 | |
| | ADP5 | 3.712 | 1.156 | .518 | |
| | ADP6 | 3.709 | 1.129 | .549 | |
| **Consistency** | | | | | .793 |
| | CST1 | 3.149 | 1.269 | .555 | |
| | CST2 | 3.383 | 1.230 | .527 | |
| | CST3 | 2.927 | 1.048 | .503 | |
| | CST5 | 3.255 | 1.207 | .681 | |
| | CST6 | 3.060 | 1.156 | .714 | |
| **Mission** | | | | | .860 |
| | MSO1 | 3.148 | 1.243 | .566 | |
| | MSO2 | 3.073 | 1.174 | .720 | |
| | MSO3 | 3.336 | 1.183 | .715 | |
| | MSO4 | 3.439 | 1.150 | .742 | |
| Employees' satisfaction | | | | | .863 |
| | ES1 | 3.532 | 1.314 | .521 | |
| | ES2 | 3.463 | 1.296 | .577 | |
| | ES3 | 3.359 | 1.293 | .624 | |
| | ES4 | 3.124 | 1.250 | .621 | |
| | ES5 | 3.170 | 1.177 | .595 | |

Source: Author's own work

**Table (3) Multicollinearity assessment**

| Variable | Code | Tolerance (> 0.20) | VIF(< 5) |
|---|---|---|---|
| **Top management Support for Quality Management** | TMS | .259 | 3.858 |
| **Training on quality** | TOQ | .236 | 4.285 |
| **Design for quality** | DFQ | .239 | 4.258 |
| **Quality Data and Reporting** | QDR | .212 | 4.712 |
| **Process Management** | PRM | .219 | 4.564 |
| **Problem solving** | PRS | .286 | 3.500 |
| **Continuous improvement** | CIM | .430 | 2.323 |
| **Reward** | RWD | .263 | 3.801 |
| **Involvement** | IVL | .298 | 3.356 |
| **Adaptability** | ADP | .404 | 2.473 |
| **Consistency** | CST | .238 | 4.204 |
| **Mission** | MSO | .282 | 3.549 |

Source: Author's own work

**5.3Validity and Reliability:**

According to Hair et al. (2019), composite reliability (CR) is used to assess the reliability of a construct within the measurement model. CR provides a more comprehensive measure of overall reliability and evaluates the internal consistency of the construct.

As shown in Table 4, the CR values for the study variables range from 0.716 to 0.866, indicating that all constructs in the measurement model exhibit good reliability. Additionally, the standardized factor loadings of the measurement items exceed the recommended threshold of 0.50 (ranging from 0.502 to 0.845 at a significance level of 0.05), confirming the convergent validity of the measurement model.

Discriminant validity assesses the extent to which a construct is distinct from other constructs (Hair et al., 2019). The average variance extracted (AVE) should exceed 0.50 to establish adequate discriminant validity. As presented in Table 5, the AVE values for the constructs range from 0.500 to 0.575, surpassing the recommended threshold.

Overall, these findings indicate that the measurement model demonstrates satisfactory reliability and validity, supporting the decision to proceed with the evaluation of the structural model.

The existence of discriminant validity was shown in the model. According to Fornell & Larcker, (1981), to guarantee the discriminant validity, the square root of the AVE measures must be superior to all the correlations among all the constructs. As Table 5 shows, the square root of the AVE (main diagonal) is in all cases superior to the correlations among the constructs, which shows discriminant validity.

O'Cass & Ngo, (2007) indicate that discriminant validity is evident when the correlation between the two constructs is not higher than their respective composite reliabilities (CR). Table (5) shows that the correlations have values inferior to their respective reliabilities. Therefore, all the constructs support the discriminant validity of the scales used.

**Table (4) Reliability and Validity Test**

| | CR | AVE | TMS | TOQ | DFQ | QDR | PRM | PRS | CIM | RWD | IVL | ADP | CST | MSO | ES |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TMS | 0.735 | 0.509 | 1.000 | | | | | | | | | | | | |
| TOQ | 0.770 | 0.528 | .665** | 1.000 | | | | | | | | | | | |
| DFQ | 0.866 | 0.567 | .639** | .771** | 1.000 | | | | | | | | | | |
| QDR | 0.833 | 0.502 | .752** | .759** | .764** | 1.000 | | | | | | | | | |
| PRM | 0.776 | 0.537 | .765** | .600** | .779** | .728** | 1.000 | | | | | | | | |
| PRS | 0.716 | 0.559 | .755** | .660** | .692** | .732** | .689** | 1.000 | | | | | | | |
| CIM | 0.721 | 0.567 | .547** | .642** | .672** | .602** | .621** | .601** | 1.000 | | | | | | |
| RWD | 0.756 | 0.512 | .638** | .741** | .751** | .623** | .699** | .681** | .666** | 1.000 | | | | | |
| IVL | 0.811 | 0.517 | .591** | .612** | .693** | .592** | .659** | .684** | .577** | .650** | 1.000 | | | | |
| ADP | 0.720 | 0.500 | .541** | .618** | .597** | .549** | .564** | .627** | .530** | .617** | .626** | 1.000 | | | |
| CST | 0.736 | 0.562 | .650** | .719** | .645** | .733** | .607** | .632** | .460** | .538** | .689** | .633** | 1.000 | | |
| MSO | 0.782 | 0.575 | .686** | .679** | .702** | .767** | .678** | .642** | .521** | .618** | .611** | .611** | .751** | 1.000 | |
| ES | 0.725 | 0.547 | .608** | .629** | .634** | .559** | .568** | .665** | .498** | .628** | .527** | .491** | .543** | .486** | 1.000 |

Source: Author's own work  Correlation is significant at the 0.01 level (2-tailed)

### 5.4 Test of hypotheses:

#### 5.4.1 Direct effect:

The results of the hypothesis test are shown in Table 5. If the corresponding p-value is equal to or less than 0.05, the hypothesis is considered valid. If not, it is rejected and deemed invalid. According to the results, all hypotheses H1, H2 and H3 are supported.

**Table (5) hypothesis test results**

| Hypothesis | Correlation coefficient | P - value(< 0.05) | Result |
|---|---|---|---|
| H1: **QM >>>>> ES** | .695 | .000 | Supported |
| H2: **QM >>>>> OC** | .840 | .000 | Supported |
| H3: **OC >>>>> ES** | .587 | .000 | Supported |

Source: Author's own work

#### 5.4.2 Mediation effect:

The results of the hypothesis test are shown in Table 5 shows that, the statistical results suggest that organizational culture OC acts as a partial mediator between quality management QM and employees' satisfaction ES, based on the findings. These results confirm that OC partially mediates the relationship between QM and ES, meaning that part of the effect of QM on ES is transmitted through OC, but QM still has a strong and significant direct effect on ES. According to the results, hypothesis H4 is supported.

### 5.5 Discussion:

This paper aims at investigating the role of organizational culture in the relationship between quality management and employee satisfaction in universities. The findings provide important implications on how different quality management dimensions affect employee satisfaction and how organizational culture can help to facilitate this relationship. The discussion also presents the key findings, their significance and relation to the previous studies.

The study sample (N=376) includes a diverse population of university employees from different gender, age, education and length of practice. Gender, age, education and length of employment were used to analyze the quality management, organizational culture and

employee satisfaction in a sample population of university employees. The equilibrium is achieved concerning the representation of the findings within the university environment because none of the categories is overrepresented.

The multicollinearity test in the study shows that all the VIF values are below 5 and the tolerance values are greater than 0.20, which means that there is no multicollinearity problem in the study. This in turn increases the reliability of the statistical model and eliminates the possibility of the relationships being spurious due to redundant variables.

Furthermore, the discriminant validity assessment of the study also established that each construct is unique and distinct, thus further supporting the validity of the theoretical framework of the study. The square root of the AVE

values is higher than the inter-construct correlations as recommended by Fornell and Larcker (1981). This therefore means that, organizational culture acts independently to influence the relationship between quality management and employee satisfaction.

It is evident that different aspects of quality management such as, top management support, training, process management and continuous improvement are key in determining employee satisfaction. The mean scores on these dimensions are 2.97 and 3.37, which indicates a moderate level of perception of quality management practices in the university selected for the study.

The reliability analysis also supports that quality management constructs are valid and reliable, with CR values of the constructs ranging from 0.716 to 0.833. Also, factor loadings greater than 0.50, which is an evidence of convergent validity, suggests that the constructs are a proper representation of the intended quality management dimensions. These findings are in concurrence with previous research that has established that effective quality management systems increase employee involvement, job satisfaction and commitment in the workplace.

This study also reveals four key aspects of organizational culture: involvement, adaptability, consistency and mission. These dimensions are seen as an important link between quality management and employee satisfaction. The stability of the organizational culture constructs is also established by the reliability analysis with CR values of 0.755 – 0.860, and sufficiently high AVE values of 0.500 – 0.575.

Organizational culture was found to support the ability of quality management to lead to employee satisfaction. For example:

- Involvement makes employees to feel appreciated and to be part of the decision making process, which in turn enhances job satisfaction.
- Adaptability helps the institutions to meet changing educational needs, which in turn decreases stress and dissatisfaction of the staff.
- The consistency of policies and leadership support provides stability in the workplace and increases the chances of employee retention.
- Mission clarity helps to ensure that employees know what the university is trying to achieve and thereby why they should be trying to achieve it, which in turn increases motivation and job satisfaction.

These results are in line with previous research (Abdul et al., 2019; Fok et al., 2021; Putri Manurung et al., 2022) that has established that a good organizational culture is critical in enhancing the performance of quality management in higher education institutions.

## 2. Conclusions, contributions and limitations:

### 6.1 Conclusion:

The study offers strong evidence that organizational culture acts as a crucial mediator of the relationship between quality management and employee satisfaction. To increase employee satisfaction, universities should adopt quality management systems and create a positive, flexible, and open culture. These findings provide practical implications for university leadership to improve the quality-driven performance of the institution and, in turn, the motivation and satisfaction of the workforce.

**6.2 Practical and Theoretical Contributions:**

This research goes further than previous work on quality management in universities by focusing on the mediating role of organizational culture. Although previous studies have established a direct relationship between quality management and employee satisfaction, this study argues that the effectiveness of quality management initiatives depends on an organization's cultural context.

The study is in line with the resource-based view (RBV) theory, which posits that organizational culture, being an intangible asset, can improve institutional performance. It also sustains the Total Quality Management (TQM) framework that identifies continuous improvement and employee involvement as major drivers of institutional effectiveness.

From the findings, university administrators and policymakers know that improving the organizational culture can improve the impact of quality management on employee satisfaction. Key recommendations include:

- Improving leadership for a quality culture by having top management actively support and engage in quality efforts.
- Improving employee involvement by allowing workers to participate in decision making and providing feedback for the workers to buy into the quality efforts.
- Adaptability: Encouraging a cultural shift towards innovation and continual learning of teaching, research, and administrative activities.
- Ensuring that quality management policies are consistent to ensure that the workplace is reliable and certain.

Through the implementation of these strategies, universities will be in a position to foster a work environment that not only improves employee satisfaction but also the institution's performance in general.

### 6.3 Limitations and Future Research Directions:

**6.3.1** Limitations of the research:

- The research has adopted a cross-sectional design to collect data at one point of time. This prevents the capture of causal relationships between quality management practices, organizational culture, and employee satisfaction. It would be useful to perform a longitudinal study to track changes.
- The research was carried out at University of Basrah, Iraq, which may mean that the findings are not generalizable to other higher education institutions, including private universities, technical institutes, and institutions in other cultural contexts.

**6.3.2** Future Research Directions:

- **Longitudinal study will be able to determine the effects of quality management initiatives and cultural shifts on employee satisfaction over time and, thus, determine causality.**
- **It is recommended that future work will extend the current investigation by examining other mediators, e.g. leadership effectiveness or job engagement, and moderators, e.g., institutional size or the level of technological advancement to build on the understanding of the relationships between quality management, organizational culture, and employee satisfaction.**

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