

# Investigating the Connection Among Quality Management Effectiveness and Organizational Culture

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## Abstracts

The success of an organization depends on its quality management (QM) and organizational culture (OC). While QM seeks to improve the caliber of products and services, OC consider to share beliefs and behaviors that impact working relationships. Together, they deliver excellent performance and a competitive advantage. The goal of the study is to evaluate how various OC factors affect QM methods and their effectiveness. The comprehensive evaluation provided by the study is based on data from 320 experts, validated questionnaires and advanced statistical techniques like correlation analysis, ANOVA and multiple regression. The study shows a significant relationship between certain OC variables and QM outcomes, highlighting the advantages of process adherence, communication process and encouraging leadership style on the effectiveness of QM and customer satisfaction. OC must be in line with QM objectives to improve customer experiences and organizational success. The research highlights the significance of integrating OC elements into QM strategies to foster an environment that drives higher output and improved customer satisfaction.

**Keywords:** Organizational Culture (OC), Quality Management (QM), Organizational Performance, Employee Relationships, Process Adherence.

Introduction

Organizational culture (OC) is the group of united philosophies, attitudes and behaviors that shape thoughts and performing patterns within an organization. It acts as a communal attack that holds the workforce usually, disturbing the mode of communication, working together and approaching their jobs. The overall organizational concert is fueled by consistent work a surroundings that are nurtured by a strapping OC [12]. Critical fundamentals include primary principles and convictions, behavior and habits that have been developed, material objects and symbols, and ceremonies and rituals that sustain the culture. The establishment of a robust OC is imperative in cultivating a harmonious work atmosphere and propelling the success of the business. It has an extensive influence on worker satisfaction, production and the effectiveness of professional strategies, such as quality management (QM) systems [11]. QM is the term used to describe the coordinated measures taken to direct and govern an organization's quality. It includes every facet of the company that affects how well its goods or services are made. QM's fundamental tenets are evidence-based decision-making, process approach, leadership, customer focus, employee engagement and relationship management. By enhancing organizational effectiveness, these guidelines seek to ensure that goods and services satisfy both legal and consumer standards [2]. The main elements of a QM scheme are quality declaration, which ensures that criteria will be met, quality assurance, which sets goals and processes, quality control, which monitors and process values and superiority development concentrates on recovering processes based on statistics and response [18]. Fig 1 depicts the variables of OC and QM.



Fig 1 Key variables of OC and QM

Understanding the relationship between OC and QM is essential to comprehend how cultural practices and values affect the effectiveness of the QM system. OC affects that standards are upheld, how superiority is imposed and how individuals view excellence. Analyzing the relationship, it shows that cultural elements can either reinforce or contradict QM results, which is significant information for organizational development [1]. The research evaluates the association between OC and QM efficacy. The goal of this study is to recognize the key cultural variables that affect QM efficacy. Also analysing the customer satisfaction and performance to offer recommendations for aligning OC with QM objectives to enhance efficacy.

The residual parts of the manuscript are arranged as follows: Part 2 outlines the associated relevant studies. Part 3 provides the methodology. Part 4 offers the analytical data and Part 5 summarizes the study conclusion.

## Related works

An outline of the research done utilizing significant analytical systems to explore the connection between OC and the QM system is given in this section.

The impact of OC and Total Quality Management (TQM) and the connection between the sustainability performance (SP) and connecting green practices (GP) in [7], utilized structural equation modeling (SEM). The findings represented that TQM and a supportive OC improved SP, especially when executives know the GP at their organization. The knowledge management (KM) techniques [15] affect the relationship between performance and OC. Based on the survey conducted among 1,255 employees of 10 Indian IT organizations, effective, cooperative, inventive and consistent cultures as well as KM practices have a beneficial impact on organizational performance, with the KM process serving as a key arbiter. The correlation between green practices and sustainability concern was examined in [8], it utilizing SEM method to utilize the belongings of OC and QM strategies. The data collected from 330 managerial staff members, sustainability outcomes are significantly impacted by quality enhancements, a supportive work environment and knowledge of green techniques. With IBM-SPSS and SEM-AMOS, hypotheses were tested. The manufacturing industries in the Greece and UK, [13] evaluated the moderating position of external integration and the influence of OC on sustainable supply chain performance (SSCP). It employed cross-sectional methods, discovered that the only cultures that improved SSCP in universal supply chains are those that are developmental, hierarchical, and group-oriented. To investigate the association between environmental performances (EP) and the green human resource management (GHRM) process, a model that uses the three components of culture as mediators was employed [4]. They employed a quantitative exploratory method and SEM to evaluate data within the frameworks of social identities, a resource-intensive, and ability motivation opportunity for 278 employees from Indian firms. A questionnaire of 318 accounting and financial managers in Amman during 2021–2022 in [14], to explore the affiliation between OC (adaptability, involvement, mission, and consistency) and AIS.

The TQM was used in Jordanian institutions [6] and how it affected community service from the viewpoint of the professors. The findings, which included 415 faculty members, demonstrated

high levels of TQM adoption and volunteering, with no discernible variations based on gender, qualifications, rank, college, or nation of graduation. To investigate the connections among KM, innovation capacity and OC in the framework of unfasten improvement in the high-tech sector [10]. Utilized SEM to analyze data from 182 organizations, they offered that knowledge management improved innovation capability and was strongly influenced by an encouraging OC. To use information from 186 financial institution professionals [3], to observe the association among OC, creativity and concert of banks. The findings of the SEM examination the data showed that OC and creativity in marketing both have a beneficial influence on financial institution performance, with the performance of marketing acting as a partial mediating variable for the implications of OC.

The correlation between green corporate culture, workforce green behavior, and green HR management and leadership, along with environmental concerns was estimated. By applying the method of SEM [5] to evaluate the data from 614 workers in the private and public sectors of Qatar, these factors were found to have an important impact. The affiliation between corporate cultural characteristics and self-efficacy in predicting organizational commitment among workers of public sector banks in Pakistan [16]. Data were gathered from 270 verified responses to a questionnaire. The findings indicated that elements including interpersonal relationships, instruction and reward systems have a favorable impact on organizational commitment, except teamwork.

A longitudinal case study to investigate how OC and leadership styles impacted the performance measurement system (PMS) in an Italian judicial court [9]. Key elements for effective PMS in justice courts are highlighted, as it demonstrated how shifting from passively evasive to transformational leadership improved PMS implementation and participatory practices. In higher education organizations in East Java, [17] examined at how communication abilities and OC impact administrative effectiveness. The results of utilizing SEM, which emphasize the necessity of an optimistic culture and effective communication skills to increase competence, show that both elements greatly improve performance when used with a sample of 250 employees.

## Methods

This research goal is to explore the connection among OC and QM results. Strict inclusion and exclusion criteria were followed in the collection of data from 143 professionals using validated scales from the questionnaires. The associations between OC elements and QM effectiveness are examined using statistical analysis, including multiple regression, correlation analysis and ANOVA.

### I. Data collection

To gather data for this study on OC and QM effectiveness, questionnaires were used on OC and QM. Data were gathered from 143 participants, representing a combination of managers and administrative personnel. These questions are issued through online survey platforms and in person to a representative sample of managers and administrative employees. Throughout the data-collecting session, reminders are given to participants to improve response rates and ensure

correct and thorough responses. Table I describes the demographic information of the participants.

Table I Demographic analysis

Categories		No. of individuals (n=143)	Percentage (%)
Age	25-35	41	28.57
	35-45	55	38.46
	45-55	47	32.97
Gender	Female	63	44.06
	Male	80	55.94
Working status	Human resources (HR)	29	20.28
	Administrative officer	35	24.48
	Manager	38	26.57
Work experience	Supervisor	41	28.67
	6- 12 months	27	18.88
	1-5 years	36	25.17
	5-15 years	32	22.38
Type of industries	Above 15 years	48	33.57
	Manufacturing	49	34.03
	Retail	44	30.55
	Financial	50	35.42

## II. Selection criteria

The selection criteria are the most important parts of the analysis. It was divided into two categories: inclusion criteria and exclusion criteria.

**Inclusion criteria:** Participants in this study must be managers or administrative personnel who actively participate in QM methods inside their firms to meet the inclusion requirements. They must be in their current positions for at least six months to ensure that they are acquainted with the QM systems and OC. To retain regional and contextual relevance, participants must also be from companies that are based in operating within the designated industry sector.

**Exclusion criteria:** Temporary or contract workers are excluded from the study due to the possibility that they cannot have a thorough understanding of QM and OC. Participants with incomplete or inconsistent survey responses are excluded, and workers in positions with significant turnover that are invalid, inconsistent, or incomplete are excluded to preserve the consistency of the data.

## III. Variables

The chosen variables are crucial for examining the relationship between OC and QM. The variables are explained below:

**Organizational culture:** It offers the standards and common values that all members of an organization adhere to the important elements that affect the resilience and effectiveness of a company are cultural adaptability, communication process, and leadership style.

**Leadership style:** Refers to a leader's strategy and actions that direct and shape the norms and values of an organization. The effectiveness of a corporation as a complete is impacted by the mode leadership is utilized to produce and protect culture.

**Communication process:** Focuses on the strategies and competence of interior communication within the organization. An understandable communication process makes it easier to manage, support and realize QM objectives.

**Cultural adaptability:** Evaluates how well an organization can change its culture to adjust to both inside and outside changes. Organizations with an elevated level of compliance are capable of switching superiority improvements and continue healthy.

**Quality management:** It emphasizes flourishing methods and outcomes. Significant factors include customer satisfaction, which indicates how well consumer viewpoints are met, process adherence, which argues commitment to superiority values and recital outcomes, which encompass deficiency duty and competence.

**Process adherence:** Describes how individually the employee adheres to locate values and processes for QM. Reliability and loyalty in high-quality grades are ensured by lofty process adherence.

**Performance outcomes:** Contains a diversity of information, including deficiency cause, process competence and overall effectiveness, which describe how well QM systems are performed. These findings show that QM affects the performance of organizations.

**Customer satisfaction:** Evaluates the level to which QM measures to meet customer expectations. Effectual QM commonly leads to high levels of customer satisfaction, which boosts directorial achievement.

#### IV. Statistical analysis

This research aims to inspect the association among various aspects of OC and QM, as well as to identify the underlying variables that influence these two constructs. To influence the OC factors on QM outcomes is evaluated using multiple regression analysis, Analysis of Variance (ANOVA) and correlation analysis. To assesses the variations in efficacy of QM across different OC levels using ANOVA. Multiple regression identifies that various OC factors influence QM outcomes, while correlation analysis measures the strength and direction of their relationship, helping to pinpoint key factors affecting QM.

### Results

The study's goal is to measure the association between OC and QM findings. ANOVA, multiple-regression, and correlation analysis are utilized in the research to calculate the consequence of OC on the QM system. It is analyzed using variables like leadership style, communication process, cultural adaptability, process adherence, performance outcomes and customer satisfaction. While multiple regressions reveal the influence of OC parameters on QM outcomes, ANOVA estimates differences in QM efficiency across different OC levels. The strength and way of these relationships are calculated by correlation analysis.

I. ANOVA: It is utilized to ascertain whether the resources of groups diverge significantly from one another. This study uses ANOVA to evaluate how different OC characteristics and QM

measures affect the efficacy of organizational quality. Table II analyses the variables using ANOVA.

Table II Statistical Outcomes of ANOVA

Variables	Mean square	Sum of square	Degree of freedom	p-value	F-value
Leadership style	20.8	62.4	3	0.0002	7.12
Communication process	13.8	55.1	4	0.0006	6.35
Cultural adaptability	16.2	48.7	3	0.0021	5.90
Process adherence	18.8	75.3	4	0.0001	8.44
Performance outcomes	19.6	39.2	2	0.0102	6.02
Customer satisfaction	22.5	67.5	3	0.0004	7.65

The table II displays the important impacts of several OC parameters on QM results. P-values < 0.05 signify significant effects for the following variables: customer satisfaction, performance results, cultural adaptability, process adherence, leadership style, and communication method. Notably, customer satisfaction (7.65) and process adherence (8.44) have the greatest F-values, indicating their significant impact on QM effectiveness.

II. Multiple regression analysis: Examining the connection between variables, helps to determine each variable affects the outcome. Multiple regression analysis is employed to evaluate the effects of QM variables and OC factors on the overall effectiveness of organization quality. Table III depicts the outcomes of multiple regression analysis.

Table III Outcomes of Multiple Regression Analysis

Variables	$\beta$ coefficient	Standard error	Standardized coefficients	$\beta$ t-value	p-value
Leadership style	0.32	0.08	0.35	4.00	0.000
Communication process	0.28	0.07	0.30	4.01	0.001
Cultural adaptability	0.22	0.09	0.25	2.44	0.015
Process adherence	0.45	0.10	0.40	4.50	0.000
Performance outcomes	0.15	0.05	0.18	3.00	0.003
Customer satisfaction	0.38	0.09	0.33	4.22	0.001

The multiple regression analysis results indicate that the leadership style ( $\beta = 0.32$ ), customer satisfaction ( $\beta = 0.38$ ), communication process ( $\beta = 0.28$ ), and process adherence ( $\beta = 0.45$ ) have the strongest positive influence on the effectiveness of QM. A considerable improvement in overall management performance can be achieved by raising the levels of performance results ( $\beta = 0.15$ ) and cultural adaptability ( $\beta = 0.22$ ).

III. Correlation analysis: Analyzing correlations between pairs of data allows one to determine their direction and intensity. This investigation examines at the interaction among different OC components and QM elements. Major findings from the investigation indicate that OC and QM factors have a substantial favorable association. Fig 2 analyses the correlation between the variables.

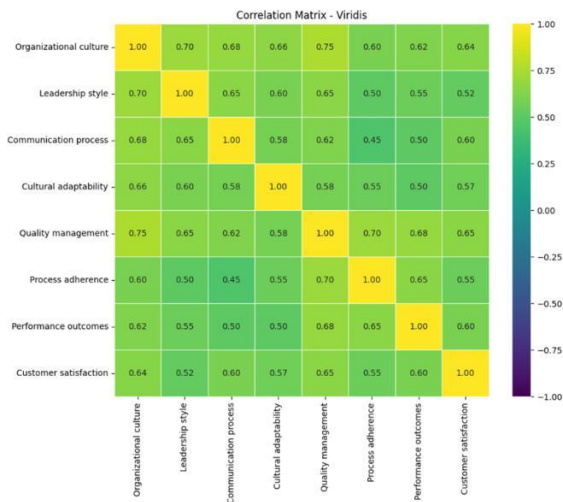


Fig 2 Correlation analysis

Strong positive correlations between Organizational Culture and quality management (0.75) are found in the correlation analysis. There are strong relationships between leadership style (0.70), communication process and organizational culture (0.68), and quality management (0.62). High correlations between customer satisfaction and organizational culture (0.64) and quality management (0.65) as well as between process adherence and quality management (0.70) demonstrate how interrelated these aspects are.

Conclusion

Through an examination of how different aspects of OC affect QM outcomes including customer satisfaction and performance, this research realized the association between OC and QM efficiency. Measures of OC and QM factors were obtained by validated questionnaires in the research and significant associations were found by evaluating the data using multiple regression, ANOVA and correlation analysis. ANOVA test demonstrates the important impacts of several OC parameters on QM results. The biggest effects are seen in process adherence (F=8.44) and customer satisfaction (F=7.65). Every variable has a significant p-value, which means that it has a big impact on how successful QM is. The outcomes showed that increasing QM efficiency is greatly influenced by leadership style ( $\beta=0.32$ ), communication practices ( $\beta=0.28$ ) and process adherence ( $\beta=0.45$ ). Furthermore, strong encouraging relationships between OC and QM were



established, representative of the significance of OC in producing high-quality outputs. These relationships incorporated strong correlations between process adherence and quality management (0.70) and customer satisfaction and organizational culture (0.64). Future studies should inspect how OC affects QM in diverse organizations and utilize a longitudinal approach to evaluate the overall impacts of cultural shifts on QM efficacy to overcome these constraints. This can lead to a more thorough comprehension of how OC gradually modifies QM.

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