From Awareness to Excellence: Exploring Quality Consciousness as a Mediator between TQM Practices and Organizational Performance in Healthcare

***Bilal Farooq[1], Iqbal Ahmad Hakim[2]**

1. Research Scholar, Department of Management Studies, University of Kashmir (corresponding Author) bilalf268@hotmail.com

2. Professor, Department of Management Studies, University of Kashmir. prof.iqbal.hakim@gmail.com

KEYWORDS

Total Quality Management (TQM), Organizational Performance (OP), Quality Consciousness (QC), Healthcare, PLS-SEM

ABSTRACT

This study investigates the mediating role of Quality Consciousness between Total Quality Management (TQM) practices and organizational performance (OP) in healthcare settings within the Union Territory of Jammu and Kashmir. Utilizing a quantitative cross-sectional research design, 271 respondents, including doctors, nurses, paramedics, and administrative staff from NABH and non-NABH accredited public hospitals. Stratified random sampling ensured a representative sample. The study employed a five-point Likert scale to measure constructs such as Top Management Commitment (TMC), Customer Focus (CF), Employee Focus (EF), Continuous Improvement (CI), Quality Awareness (QA), Hospital Management Information System (HMIS), Quality Consciousness (QC) and Organizational Performance (OP). Data analysis was conducted using Partial Least Square Structural Equation Modeling (PLS-SEM) in Smart-PLS. The findings indicate that Quality Consciousness has a mediating effect on Organizational Performance. EF emerged as the most influential factor, with the highest beta value, followed by CF and TMC. Indirect effects demonstrated that variables like CF, CI, and HMIS also significantly impact OP through mediator, confirming the multifaceted nature of these relationships. Limitations include the context-specific focus on healthcare, sample size, potential measurement biases, and the cross-sectional design, which limits causal inferences. Future research directions suggest expanding studies to different contexts, employing longitudinal designs, refining measurement scales, and exploring additional mediators and moderators. These insights underscore the need for a holistic approach to understanding the dynamics between TQM practices and organizational performance in healthcare settings.

1. Introduction

In the quest to enhance healthcare quality and operational efficiency, Total Quality Management (TQM) has emerged as a transformative approach (Al-Assaf et al., 2024; Schiavone et al., 2022). The healthcare sector in developing countries, akin to many other developed nations, grapples with delivering high-quality, patient-centered care while optimizing resource allocation. This challenge is compounded by the need to ensure patient safety and organizational effectiveness in a complex, multifaceted environment (Talib et al., 2010; Samarkandy et al., 2019). The pressing need for a robust quality management framework in healthcare cannot be overstated, as the stakes involve both human lives and organizational sustainability (Akase & Kpera, 2024; Orikpete & Ewim, 2024).

TQM practices encompass a wide range of elements, including top management commitment, customer focus, employee focus, continuous improvement, quality awareness, and Hospital Management Information Systems (HMIS) (Daqar & Constantinovits, 2020; Stanojeska et al.,

2020). These components collectively strive to foster a culture of quality within healthcare institutions, thereby empowering them to achieve superior outcomes (Kleeb, 1997; Abdulkadir Bilen & Sitki, 2020). Notably, each component of TQM is interconnected, contributing synergistically to organizational performance (Ali & Waheed, 2024; Wu, 2019).

However, the unique demands of healthcare, such as the reliance on multidisciplinary teams and the critical nature of patient safety, pose specific challenges to TQM implementation (Ozdal, 2018; Aburayya, 2019). Healthcare institutions often face resistance to change, stemming from entrenched practices and the high-pressure environment in which they operate (Aunger et al., 2023; Maria et al., 2024). While TQM frameworks have been widely applied in sectors like manufacturing and education, their translation into the healthcare domain demands contextual adaptation (Rehmani et al., 2023; Tonjang & Thawesaengskulthai, 2024).

Existing literature has demonstrated the effectiveness of TQM frameworks across various sectors. However, their direct applicability to healthcare, especially in resource-constrained countries like India, requires further exploration (Acquah et al., 2022; Ali et al., 2024). India's healthcare sector, characterized by its dual burden of communicable and non-communicable diseases, necessitates innovative solutions to improve care delivery and optimize limited resources (Bhatt et al., 2022; Soni & Kumari, 2024). Additionally, the disparity between urban and rural healthcare services underscores the importance of adopting TQM practices that are scalable and inclusive (Antony et al., 2024; Masudin et al., 2024).

Moreover, there is a significant gap in understanding the role of different healthcare professionals, including doctors, nurses, paramedics, and administrative staff, in achieving organizational effectiveness through TQM practices (Jamal & Waseem, 2023; Tripathy, 2022). Each professional group brings unique competencies and challenges to the table, necessitating a tailored approach to quality management (Fonseca et al., 2021; Martin et al., 2019). A holistic understanding of their roles can facilitate more effective collaboration and enhance overall performance (Badenhorst & Radile, 2018; Podmetina et al., 2018).

A critical aspect that remains underexplored in current TQM research within healthcare is the concept of "quality consciousness." while "quality awareness" pertains to employees' understanding of organizational standards and objectives, "quality consciousness" represents a deeper, proactive, and intrinsic commitment to maintaining and enhancing quality (Schalk & van Dijk, 2005; Wöhrle, 2021). Quality consciousness is not merely an organizational goal but a cultural shift that encourages employees to internalize quality as a core value (Viterouli et al., 2023; Yeşiltaş et al., 2022). Unlike awareness, which can be externally fostered through training and policies, quality consciousness reflects an internalized drive that significantly amplifies the effectiveness of TQM practices (Alzoubi, 2023; Hu et al., 2024).

This study aims to bridge this gap by hypothesizing that quality consciousness acts as a mediating variable, linking TQM practices and organizational performance. The mediating role of quality consciousness has the potential to unveil new dimensions in quality improvement strategies (Agyabeng-Mensah et al., 2020; Wang et al., 2020). By investigating this mediating role, the study seeks to provide an understanding of quality improvement mechanisms within the healthcare sector. Furthermore, it highlights the importance of fostering intrinsic motivation among healthcare staff to achieve sustainable quality outcomes.

The research objectives are to assess the impact of TQM practices on organizational performance in Jammu and Kashmir and to examine the mediating role of quality consciousness between TQM practices and organizational performance. By addressing these objectives, this study aspires to offer valuable insights for policymakers, hospital administrators, and healthcare practitioners. The insights can guide the development of tailored strategies that foster a culture of continuous quality improvement and elevate the standards of patient care in the region. Additionally, the study's findings aim to contribute to the broader

discourse on quality management in healthcare, with implications for both academic research and practical applications.

By integrating theoretical frameworks with empirical analysis, this research underscores the dynamic interplay between TQM practices, quality consciousness, and organizational performance. It emphasizes the transformative potential of embedding quality consciousness into organizational culture. Ultimately, this study seeks to inform evidence-based decision-making, enabling healthcare institutions to navigate the complexities of modern healthcare delivery effectively.

2. Literature review

Total Quality Management (TQM) is a comprehensive management approach emphasizing continuous improvement, customer satisfaction, and employee involvement (Jimoh et al., 2018; Ming, 2023). TQM's application spans various industries, including healthcare, where it significantly enhances patient care and operational efficiency (Talib et al., 2010). In healthcare, successful TQM implementation hinges on factors such as top-management commitment, teamwork, process management, customer focus, resource management, and continuous improvement (Jamal & Waseem, 2023; Tripathy, 2022). Globally, the implementation of TQM in primary healthcare centers has shown a positive impact on patient satisfaction (Aburayya, 2019). The Saudi experience highlights the challenges and successes of TQM, emphasizing the need for cultural and operational adjustments (Samarkandy et al., 2019). Visionary leadership plays a critical role in fostering a culture of continuous improvement and quality consciousness, as seen in hospitals worldwide (Ali, Shah, & Shamsuddin, 2024).

Research indicates that TQM practices not only improve patient outcomes but also enhance employee satisfaction and retention, leading to better overall service quality (Jamal & Waseem, 2023; Tripathy, 2022). By integrating all aspects of quality management, TQM ensures a holistic approach to healthcare improvement.

2.1 Top Management Commitment and Organizational Performance

Top management commitment is a crucial factor for successful TQM implementation (Aletaiby et al., 2021; Krajcsák, 2019). Research highlights that leadership and top management commitment provide the focal point for the energies, hopes, and aspirations of people in institutions where TQM is implemented (Collier & Esteman, 2000; Mahmood et al., 2022; Sweis et al., 2019). Alawag et al. (2023); Dale (2003); Mittal et al. (2023) emphasizes that strong leadership is essential for TQM initiatives to succeed. Evans and Dean (2003) underscore the importance of top management commitment in creating an organizational climate that empowers employees, crucial for achieving TQM objectives like quality improvement and customer satisfaction. Antony et al. (2021); Gupta et al. (2023); Kanji (2002) identifies leadership and top management commitment as the most critical prerequisites for institutional success in TQM, providing a foundation for successful implementation. (Asante and Ngulube (2020); Georgiev and Ohtaki (2019); Mesbahuddin Chowdhury et al. (2007) found that firms with high top management commitment implement TQM practice more rigorously, with employee involvement and product innovation as primary predictors of product quality.

H1: There is significant relationship between Top Management Commitment and Organizational Performance.

2.2 Customer focus and Organizational Performance

A critical component of TQM is customer focus, which involves understanding and meeting customer needs (Akhorshaideh et al., 2023; Al- Saffar & Obeidat, 2020). Research shows that

organizations with a strong customer focus achieve higher levels of customer satisfaction and loyalty (Aburayya et al., 2020; Arslan, 2020). A study by Chalmers University of Technology (2020); Lee and Lee (2019); Mariani and Wamba (2020) highlights the importance of using customer feedback for quality improvements in the digital age. Attakora-Amaniampong, Salakpi, and Bonye (2014) found that TQM practices positively influence customer focus in Ghana's construction projects, reducing complaints and increasing employee participation. Rahmatika, Bakhtiar, and Wicaksono (2024) emphasize the positive relationship between TQM practices, including customer focus, and company performance. By prioritizing customer needs and continuously improving based on feedback, organizations can enhance satisfaction and loyalty, leading to better performance (Hotha, 2023; Kreuzer et al., 2020).

H2: There is significant relationship between Customer Focus and Organizational Performance

2.3 Employee Focus and Organizational Performance

Employee focus involves engaging and empowering employees to contribute to quality improvements (Assen, 2020; Kaasinen et al., 2020). Research consistently shows that organizations with a strong employee focus achieve higher levels of employee satisfaction, retention, and overall performance (Kurdi et al., 2020; Sorn et al., 2023). Rahmatika, Bakhtiar, and Wicaksono (2024) highlight that TQM practices, including employee focus, positively influence company performance, such as financial performance, employee performance, and innovation. Saravanan and Menaka (2021) identify employee focus as a significant TQM variable, along with quality culture and operations focus, contributing to organizational performance. Qureshi, Talib, and Rahman (2016) emphasize that employee involvement and participation are crucial for successful TQM implementation, leading to improved product quality and customer satisfaction. In conclusion, employee focus is a vital component of TQM that significantly impacts organizational success. By engaging and empowering employees, organizations can enhance satisfaction, retention, and overall performance (Afram et al., 2022; Kakkar et al., 2020). Future research should continue to explore innovative strategies for integrating employee focus into TQM practices to achieve sustainable quality improvements.

H3: There is significant relationship between Employee Focus and Organizational Performance

2.4 Quality Awareness and Organizational Performance

Understanding and promoting quality principles throughout the organization research consistently shows that organizations with strong quality awareness achieve higher levels of performance and customer satisfaction (Bello et al., 2020; Isnaini, 2021). Talib, Rahman, and Qureshi (2011) assessed the awareness of TQM in Indian service industries and found that while there is a good level of awareness, more efforts are needed to implement TQM practices effectively. Padhi (2023) explored TQM in Indian healthcare, emphasizing standardized practices, data-driven decisions, and employee empowerment to deliver high-quality care. The study by Chalmers University of Technology (2020) highlighted the importance of customer focus in quality management, showing that understanding customer needs is fundamental for delivering high-quality products and services. The studies by (Hill et al., 2020; Vinodh et al., 2020) revealed promoting quality principles and continuous improvement based on feedback enhances organizational performance and customer satisfaction.

H4: There is significant relationship between Quality Awareness and Organizational Performance

2.5 Continuous Improvement and Organizational Performance

Continuous improvement, or Kaizen, involves all employees actively contributing to the improvement process (Galeazzo et al., 2021; Yang et al., 2024). Ishikawa (1985) highlighted that continuous improvement requires active involvement from all levels of employees.

Deming's PDCA (Plan-Do-Check-Act) cycle is fundamental in TQM, encouraging organizations to plan, implement, monitor, and adjust changes. Juran's quality trilogy—planning, control, and improvement—stresses that continuous improvement must be systemic and ongoing (Juran, 1992). Ugwu (2023) developed a framework suggesting that TQM enhances product quality, reduces waste, and increases productivity. The global research landscape in healthcare and TQM, explored by Hu et al. (2024), shows steady growth over the last 30 years, underscoring the importance of continuous improvement in healthcare services. Continuous improvement ensures organizations consistently enhance their operations and meet customer needs, fostering a culture of excellence and sustainable quality improvements.

H5: There is significant relationship between Continuous Improvement and Organizational Performance

2.6 Hospital Management Information System (HMIS) and Organizational Performance

Integrating Total Quality Management (TQM) and Hospital Management Information Systems (HMIS) has significantly enhanced healthcare quality and operational efficiency (Amer et al., 2022; Sahoo et al., 2024). TQM emphasizes continuous improvement through systematic, data-driven approaches, while HMIS provides the essential infrastructure for data collection, management, and analysis (Bongomin, 2025; Gupta, 2024). Studies have shown that this integration improves patient outcomes, enhances operational efficiency, and increases employee satisfaction (Alzoubi, 2023; Azam, 2011). The combination allows healthcare organizations to monitor performance, identify improvement areas, and implement evidence-based practices (Padhi & Tewani, 2023). However, challenges such as resistance to change and data privacy concerns can impede successful implementation (Omer, 2023; Rahmatika et al., 2024).

H6: There is significant relationship between HMIS and Organizational Performance

2.7 Organizational Performance

Total Quality Management (TQM) is a comprehensive approach aimed at improving the quality and performance of healthcare institutions (Essel, 2020; Hidayah et al., 2022; Zehir & Zehir, 2023). TQM focuses on continuous improvement, patient satisfaction, and data-driven decision-making (Hossain, 2024; Huang et al., 2023; Rejikumar et al., 2018). Studies have shown that implementing TQM practices can lead to better patient outcomes, increased operational efficiency, and higher employee satisfaction (Alkhaldi & Abdallah, 2019; Puthanveettil et al., 2020). TQM practices such as standardized processes and protocols ensure consistent quality care, leading to improved patient outcomes (Alzoubi, 2023; Azam, 2011). By emphasizing data analysis and continuous improvement, TQM helps hospitals streamline operations, reduce waste, and optimize resource allocation (Padhi & Tewani, 2023; Omer, 2023). TQM also fosters a culture of continuous improvement and employee involvement, enhancing job satisfaction and performance (Rahmatika et al., 2024).

However, implementing TQM in healthcare settings poses challenges such as resistance to change, resource constraints, and the need for cultural adaptation (Elomery & Gar-Elnabi, 2020). Despite these challenges, the integration of TQM practices has shown positive impacts on Organizational Performance and patient care quality (Nasution et al., 2023). Future research should focus on addressing these challenges and developing standardized frameworks for integrating TQM in healthcare settings.

2.8 Quality Consciousness

Quality consciousness refers to the commitment of maintaining high standards in products and services (Alzoubi et al., 2022; Nadeem et al., 2020). It is vital for operational efficiency and enhanced organizational performance (Boulhaga et al., 2022; Duman & Akdemir, 2021). Research shows that quality consciousness can boost customer satisfaction, market share, and profitability (Anderson & Zeithaml, 1984; Normann, 1984). Identifying and addressing service quality gaps are crucial for enhancing quality consciousness (Jayesh & Renuka, 2010). In healthcare, quality consciousness means ensuring patient expectations are met or exceeded, leading to better patient outcomes and overall service quality (Jayesh & Renuka, 2010). In manufacturing, it often involves performance management tools and reward systems that emphasize quality outcomes, fostering a culture of continuous improvement (Daniel, Lee, & Reitsperger, 2013). Quality consciousness is a strategic tool that significantly impacts the success of organizations across sectors by promoting a culture of excellence and continuous improvement (Ababneh, 2020; Barua, 2021; Carvalho et al., 2020; Javaid et al., 2021). In healthcare, it involves providing evidence-based services, ensuring patient safety, and responding to individual needs (Anderson & Zeithaml, 1984; Daniel, Lee, & Reitsperger, 2013). It also includes reducing waiting times, providing equitable care, coordinating across levels, and maximizing resources while avoiding waste (Jayesh & Renuka, 2010; Normann, 1984; Zeithaml, Parasuraman, & Berry, 1990). Developing a quality-conscious culture involves leadership commitment, teamwork, accountability, continuous learning, and active feedback loops, leading to better patient outcomes and higher service quality.

H7: Quality Consciousness significantly mediates the relationship between Top Management Commitment and Organizational Performance

H8: Quality Consciousness significantly mediates the relationship between Customer Focus and Organizational Performance

H9: Quality Consciousness significantly mediates the relationship between Employee Focus and Organizational Performance

H10: Quality Consciousness significantly mediates the relationship between Quality Awareness and Organizational Performance

H11: Quality Consciousness significantly mediates the relationship between Continuous Improvement and Organizational Performance

H12: Quality Consciousness significantly mediates the relationship between HMIS and Organizational Performance

3. Research Model

The research model (Figure 1) for this study integrates Total Quality Management (TQM) practices, and their impact on Organizational Performance, mediated by quality consciousness. The model posits that TQM practices positively influence Organizational Performance. Additionally, the model hypothesizes that quality consciousness acts as a mediating variable, enhancing the effectiveness of TQM practices on Organizational Performance.

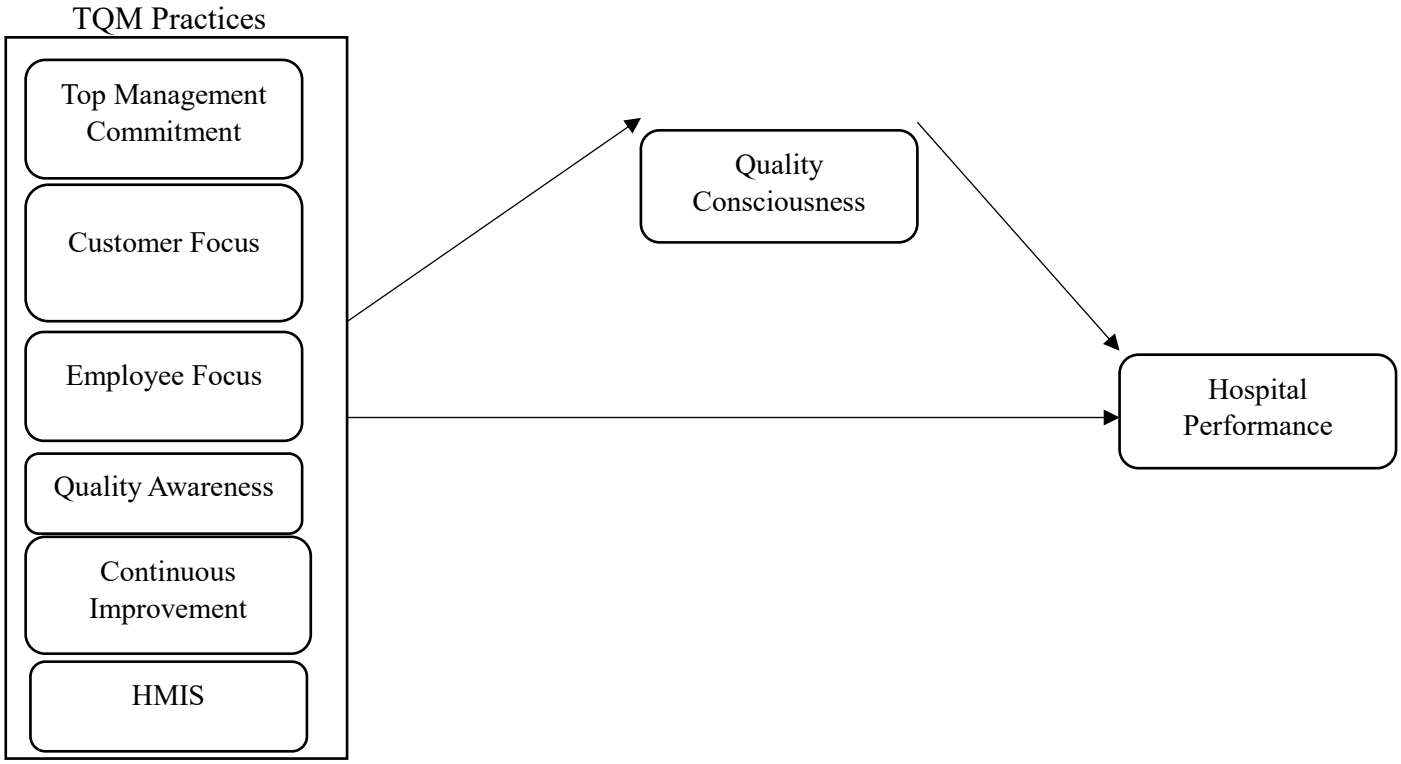

Figure 1 Proposed Research Model

3.1 Methodology and Data Collection

In the present study, a quantitative cross-sectional research design was utilized to investigate the proposed relationships (Creswell & Creswell, 2018; Manzoor et al., 2023; Bhat et al., 2023; Dada et al., 2024). To ensure representative sampling, a probability sampling approach, specifically stratified random sampling, was employed (Taherdoost, 2016). The sample comprised 271 respondents, including doctors, administrative staff, nurses, and paramedics, selected from public hospitals including NABH and non-NABH accreditation certified, located across various districts of the Union Territory of Jammu and Kashmir. The sample size was determined based on established guidelines for achieving statistical power in healthcare research (Krejcie & Morgan, 1970). The respondents are distributed across eight district hospitals (Table 1), with the highest representation from DH Reasi (14.0%) and the lowest from DH Kishtwar (10.3%). The respondents are almost evenly split between the Jammu (49.8%) and Kashmir (50.2%) divisions. In terms of designation, nurses constitute the largest group (54.2%), followed by paramedics (21.8%), doctors (18.8%), and administrative staff (5.2%). Gender distribution is nearly equal, with females slightly outnumbering males (50.9% vs. 49.1%). Most respondents fall within the 30-45 age group (40.6%), followed by those below 30 (33.6%) and those aged 46 and above (25.8%). Regarding work experience, the majority have 0-10 years of experience (42.1%), while 32.5% have 11-20 years, and 25.5% have over 20 years. Finally, the sample is evenly split between respondents from NABH-accredited (49.8%) and non-NABH-accredited (50.2%) hospitals. This demographic profile ensures a diverse representation of healthcare professionals across different categories. Data collection was conducted using online platforms, such as Google Forms, to facilitate efficient and accessible responses. A five-point Likert scale was developed using existing validated scales for each construct: Top Management Commitment (TMC) was measured using items adapted from Puthanveettil et al. (2020) and Baidoun et al. (2018); Customer Focus (CF) was assessed based on scales from Puthanveettil et al. (2020) and Baidoun et al. (2018); Employee Focus (EF) utilized measures from Puthanveettil et al. (2020) and Baidoun et al. (2018); Continuous Improvement (CI) items were derived from Saxena (2021) and Baidoun et al. (2018); Quality

Awareness (QA) was measured following the scales of Puthanveettil et al. (2020); Hospital Management Information System (HMIS) employed items from Mahaboob (2020) and Dabla (2016); and Organizational Performance (HP) was assessed using scales from Mahaboob (2020) and Baidoun et al. (2018).

For data analysis, the Partial Least Squares Structural Equation Modeling (PLS-SEM) technique was applied to test the hypothesized relationships and assess the measurement and structural models.

Table 1: Demographic Profile of Respondents

Demographic Criteria	Category	Frequency	Percentage
Name of the Hospital	DH Gandhinagar	33	12.20%
	JLNM Srinagar	35	12.90%
	DH Udhampur	36	13.30%
	DH Anantnag	31	11.40%
	DH Handwara	37	13.60%
	DH Bandipora	34	12.50%
	DH Kishtwar	28	10.30%
	DH Reasi	37	14.00%
Division	Jammu	135	49.80%
	Kashmir	136	50.20%
Designation	Doctor	51	18.80%
	Administrative Staff	14	5.20%
	Paramedic	59	21.80%
	Nurse	147	54.20%
Gender	Male	133	49.10%
	Female	138	50.90%
Age	Below 30	91	33.60%
	30-45	110	40.60%

	46 and Above	70	25.80%
Working Experience (Years)	0-10	114	42.10%
	11-20	88	32.50%
	Above 20	69	25.50%
Hospital Accreditation	NABH	135	49.80%
	Non-NABH	136	50.20%

4. Data Analysis of the Measurement Model

4.1 Reliability analysis

The results of the factor loadings, Cronbach's Alpha, Rho_A, Composite Reliability, AVE, and VIF confirm that the measurement model is robust, with high reliability and validity (Table 2). These findings align with the established guidelines for evaluating measurement models in structural equation modeling (Hair et al., 2010; Fornell & Larcker, 1981; Nunnally, 1978).

Table 2 Factor Loadings and Reliability and Multicollinearity Results

Variable	Loading	CA	Rho_A	CR	AVE	VIF
CF1	0.935					
CF2	0.901					
CF3	0.898	0.962	0.962	0.971	0.868	2.319
CF4	0.648					
CF5	0.796					
CI1	0.893					
CI2	0.678	0.972	0.979	0.981	0.967	1.841
CI3	0.883					
CI4	0.779					
EF1	0.847					
EF2	0.817					
EF3	0.713	0.951	0.967	0.974	0.883	2.149
EF4	0.645					
EF5	0.774					
HMIS1	0.877					
HMIS2	0.683	0.967	0.971	0.975	0.879	2.918
HMIS3	0.898					
HMIS4	0.794					
OP1	0.865					
OP2	0.761					
OP3	0.776	0.953	0.977	0.979	0.968	2.248
OP4	0.866					
OP5	0.713					
OP6	0.696					
QA1	0.775	0.977	0.944	0.982	0.956	2.730

QA2	0.724					
QA3	0.876					
QA4	0.825					
QC1	0.761					
QC2	0.872					
QC3	0.861	0.948	0.972	0.960	0.899	2.264
QC4	0.878					
QC5	0.747					
QC6	0.802					
TMC1	0.892					
TMC2	0.774					
TMC3	0.771	0.944	0.988	0.978	0.857	2.245
TMC4	0.773					
TMC5	0.877					

Note: CA-Cronbach's Alpha, CR-Composite Reliability, Rho_A-Dikster's Rho, AVE-Average Variance Extracted

In the present study, several reliability and validity metrics were assessed to ensure the robustness of the measurement model. Factor loadings, Cronbach's Alpha (CA), Composite Reliability (CR), Average Variance Extracted (AVE), and Variance Inflation Factor (VIF) were checked to evaluate the construct validity and internal consistency of the measures. Factor loadings measure how well each observed variable represents the underlying latent construct. Values above 0.7 are generally considered satisfactory, indicating that the items contribute significantly to the construct (Hair et al., 2010). The results show that most factor loadings, such as CF1 (0.935) and CI1 (0.893), exceed this threshold, confirming that the items effectively measure their respective constructs. These values are consistent with the expectations for convergent validity, where items should reflect the same underlying construct (Fornell & Larcker, 1981). Cronbach's Alpha is a widely used measure of internal consistency, with values above 0.7 considered indicative of good reliability (Nunnally, 1978). The CA values in this study, such as CF1 (0.962) and CI1 (0.972), significantly exceed this threshold, suggesting high internal consistency for the constructs. Rho_A, an alternative reliability measure to Cronbach's Alpha, was also assessed. Rho_A is particularly suitable for small sets of indicators and typically correlates highly with Cronbach's Alpha when reliability is high (Dijkstra, 2010). The Rho_A values (e.g., CF1 = 0.962, CI1 = 0.972) further support the reliability of the constructs.

Composite Reliability (CR) is another key measure of internal consistency, with values above 0.7 indicating acceptable reliability (Hair et al., 2017). The CR values in this study, such as CF1 (0.971) and CI1 (0.981), confirm strong internal consistency and align with the findings from Cronbach's Alpha and Rho_A.

4.2 Validity Analysis

In the present study, validity analysis was conducted using the Heterotrait-Monotrait Ratio (HTMT) to assess discriminant validity among the constructs. The HTMT ratio evaluates whether two constructs are sufficiently distinct from each other by comparing the correlations between different constructs (heterotrait) with the correlations within the same construct (monotrait) Henseler, et al., (2015). Generally, HTMT values below 0.85 indicate acceptable discriminant validity, meaning the constructs are sufficiently distinct. However, values between 0.85 and 0.90 may still be acceptable in certain contexts, depending on the model and the nature of the constructs.

Table 3 Validity Results

HTMT							
	CF	**CI**	**EF**	**HMIS**	**OP**	**QA**	**QC**	**TMC**
CF								
CI	0.536							
EF	0.611	0.595						
HMIS	0.685	0.581	0.634					
OP	0.647	0.637	0.649	0.731				
QA	0.642	0.573	0.601	0.703	0.709			
QC	0.687	0.596	0.662	0.728	0.686	0.672		
TMC	0.649	0.542	0.613	0.681	0.658	0.616	0.641	

Overall, the HTMT values in Table 3 indicate that the constructs in this study are sufficiently distinct, demonstrating strong discriminant validity Henseler, et al., (2015). The absence of values near or above 0.85 provides strong evidence that the constructs are not overly correlated, enhancing the robustness of the measurement model. In addition to discriminant validity, the study also assessed convergent validity through Average Variance Extracted (AVE). AVE values above 0.5(Table 2) suggest that the construct explains more variance than measurement error (Fornell & Larcker, 1981). The AVE values in this study, such as CF1 (0.868) and CI1 (0.967), exceed this threshold, confirming good convergent validity. Finally, the Variance Inflation Factor (VIF) was used to assess multicollinearity among the constructs. VIF values below 5 are generally acceptable, indicating no problematic multicollinearity (O'Brien, 2007). The VIF values in this study, such as CF1 (2.319) and CI1 (1.841), fall well below this threshold, suggesting that multicollinearity is not an issue in the model.

4.3 Path Coefficient Analysis

The path coefficients and their statistical significance, as presented in the table 4 for direct effects, provide important insights into the relationships between variables in the model. The Beta values indicate the strength and direction of the relationships between the constructs, while T-Statistics and P-Values are used to assess the significance of these relationships and are shown in figure 2.

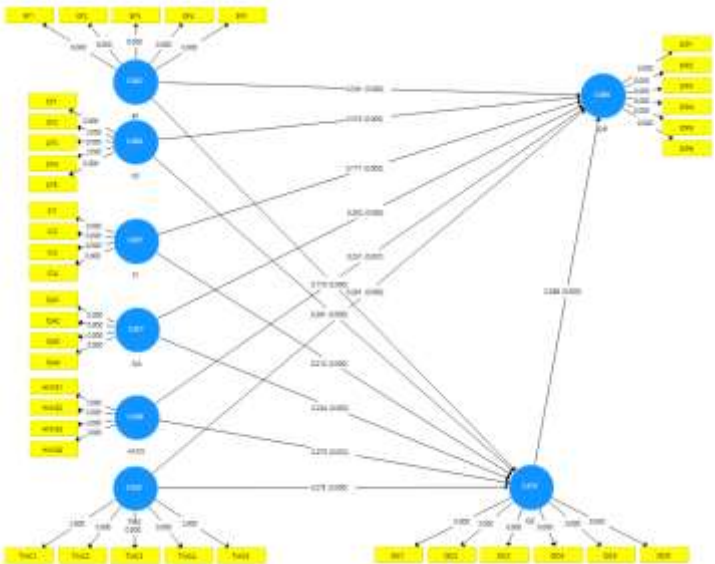

Figure 2: Significance Level of the Constructs

Table 4: Direct Effects Analysis

Hypothesis	Path Relationship	Direct Effect (Beta)	Standard Error (SE)	T-Statistic	P-Value	Result
H1	*TMC → OP*	*0.291*	*0.026*	*11.131*	*0.000*	*Supported*
H2	*CF → OP*	*0.315*	*0.036*	*8.712*	*0.000*	*Supported*
H3	*EF → OP*	*0.391*	*0.026*	*14.984*	*0.000*	*Supported*
H4	*QA → OP*	*0.202*	*0.033*	*6.110*	*0.000*	*Supported*
H5	*CI → OP*	*0.171*	*0.032*	*5.215*	*0.000*	*Supported*
H6	*HMIS → OP*	*0.231*	*0.038*	*6.012*	*0.001*	*Supported*

The direct effects analysis demonstrates that all Total Quality Management (TQM) practices examined in this study have a statistically significant impact on Organizational Performance (OP). Each independent variable, including Customer Focus (CF), Employee Focus (EF), Continuous Improvement (CI), Hospital Management Information Systems (HMIS), Quality Awareness (QA), and Top Management Commitment (TMC), has a positive and significant relationship with OP, as indicated by their high T-statistics and p-values below 0.05. Employee Focus (EF) exhibits the strongest direct effect on OP with a beta coefficient of 0.391, suggesting that engaged and motivated employees play a crucial role in improving organizational performance (Wasiu Olumuyiwa Ajirowo, 2024). Similarly, Top Management Commitment (TMC) shows a substantial impact (β = 0.291), reinforcing the idea that strong leadership commitment is necessary to drive quality improvements across healthcare institutions (Hussain et al., 2023). Customer Focus (CF) also demonstrates a notable influence (β = 0.315), emphasizing the importance of prioritizing patient needs in the healthcare sector (Puthanveettil et al., 2020). The significant effect of Continuous Improvement (CI) (β = 0.171) suggests that a sustained effort toward refining processes and operational efficiencies contributes meaningfully to organizational success (Ajirowo, W. O. 2024). Additionally, HMIS (β = 0.231) plays a critical role, highlighting the importance of digital infrastructure in improving performance outcomes (Alaraki, 2014). The effect of Quality Awareness (QA) (β = 0.202) confirms that ensuring staff members are well-informed about quality initiatives is essential for enhancing OP (Puthanveettil et al., 2020). The results of the direct effects analysis indicate that each of these TQM practices independently contributes to improving organizational performance (Mittal et al., 2023).

4.4 Mediation Analysis

The mediation analysis demonstrates that Quality Consciousness (QC) plays a crucial role in linking Total Quality Management (TQM) practices with Organizational Performance (OP) in table 5. The results indicate that all TQM practices have a significant direct impact on OP

Table 5: Mediation Analysis Table

Hypothesis	***Path Relationship***	***Direct Effect (Before Mediation)***	***Indirect Effect (Via QC)***	***Total Effect***	***Variance Accounted For (VAF%)***	***Mediation Type***
H7	*TMC → QC→OP*	*0.291*	*0.275*	*0.566*	*48.58%*	***Partial Mediation***
H8	*CF → QC → OP*	*0.315*	*0.391*	*0.706*	*55.40%*	***Partial Mediation***
H9	*EF → QC → OP*	*0.391*	*0.170*	*0.561*	*30.30%*	***Partial Mediation***
H10	*QA → QC → OP*	*0.202*	*0.234*	*0.436*	*53.67%*	***Partial Mediation***
H11	*CI→ QC → OP*	*0.171*	*0.212*	*0.383*	*55.36%*	***Partial Mediation***
H12	*HMIS → QC → OP*	*0.231*	*0.270*	*0.501*	*53.89%*	***Partial Mediation***

However, the indirect effects, mediated through Quality Consciousness (QC), significantly enhance OP, confirming partial mediation across all examined relationships (Baron & Kenny, 1986; Hair et al., 2017). The independent variables—Customer Focus (CF), Top Management Commitment (TMC), Continuous Improvement (CI), Hospital Management Information Systems (HMIS), and Quality Awareness (QA)—all contribute to the development of QC, which in turn improves OP. CF exhibits the strongest influence on QC (VAF = 55.40%), emphasizing the role of patient-centred initiatives in fostering a quality-driven mindset that ultimately enhances OP (Sousa & Voss, 2002). Likewise, TMC plays a crucial role in strengthening QC (VAF = 48.58%), as leadership commitment embeds quality values into organizational culture, thereby improving OP (Oakland, 2014). CI and HMIS also significantly shape QC (VAF = 55.36% and 53.89%, respectively), reinforcing the need for continuous process improvements and effective data management to sustain quality-driven performance (Psomas & Jaca, 2016). Furthermore, QA (VAF = 53.67%) highlights the necessity of raising awareness about quality practices to embed a strong QC culture, ensuring long-term improvements in OP (Flynn et al., 1995).

5. Discussion and Conclusion

The findings of this study provide strong empirical support for the mediating role of Quality Consciousness in the relationship between TQM practices and Organizational Performance (Hair et al., 2017). The presence of partial mediation across all relationships suggests that while TQM practices have a direct impact on OP, their effectiveness is significantly enhanced when employees internalize quality as a fundamental organizational value (Antony et al., 2022). The development of Quality Consciousness ensures that quality is not just an externally imposed requirement but a deeply ingrained cultural and operational principle within healthcare institutions (Patel, 2009).

The significant mediation effect observed in Customer Focus (CF) underscores the importance of patient-centric initiatives in fostering a quality-driven workforce (Husain et al., 2021). Institutions that prioritize patient needs and continuously seek feedback are more likely to cultivate a strong sense of Quality Consciousness among employees, ultimately leading to improved service delivery and performance outcomes. Similarly, the substantial mediation effect between Top Management Commitment (TMC) and Organizational Performance (OP) highlights the critical role of leadership in embedding quality values within the organization. Leaders who actively champion quality initiatives and encourage employee participation in decision-making processes create an environment where Quality Consciousness can thrive (Srinivasan & Kurey, 2014).

Continuous Improvement (CI) and Hospital Management Information Systems (HMIS) also reinforce the need for healthcare institutions to adopt a systematic approach to quality enhancement. Ongoing process improvements, coupled with robust information management systems, enable organizations to track performance metrics, identify areas for improvement, and foster a culture of continuous learning and innovation (Gijo et al., 2021; Tass & Malik, 2024). The strong mediation effect observed for Quality Awareness (QA) further validates the idea that educating employees about quality principles is a crucial first step toward developing deeper Quality Consciousness (Rauf, 2018).

Given these findings, healthcare institutions should focus on strategies that strengthen Quality Consciousness among employees. Leadership development programs, quality awareness training, and investments in technology-driven quality management systems can help reinforce a quality-driven mindset. Moreover, fostering an organizational culture that values continuous improvement and patient engagement will further enhance the effectiveness of TQM practices (Antony et al., 2022).

Future research should consider exploring the long-term impact of Quality Consciousness on Organizational Performance using longitudinal data. Additionally, investigating the potential moderating effects of organizational culture and regulatory frameworks could provide further insights into how Quality Consciousness interacts with other contextual factors. By expanding the scope of research, a more comprehensive understanding of the mechanisms driving quality-driven healthcare excellence can be achieved.

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