

Unlocking the Performance Through Quality Management Practices in Healthcare Sector of Developing Country

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Abstract

Quality Management Practices (QMP) are essential to an organisation's performance, but their implementation in the public sector often does not yield consistent results. This finding is particularly relevant for developing economies like Pakistan, where QMP implementation often yields inconsistent results. The study, using data from 540 healthcare employees through a convenience sampling technique in the Federal Capital Territory, Islamabad, and Rawalpindi district, delves deeper by examining the mediating role of the three dimensions of Organisational Commitment (OC). The analysis, conducted using PLS-SEM, reveals that all three dimensions of commitment—affective, continuance, and normative—play a mediating role. The most substantial effect comes from normative commitment. This indicates that QMPs are most effective when they instil a sense of moral obligation and duty in employees, which acts as a powerful motivator within the healthcare setting. According to the findings of the study, there are some theoretical and practical implications for hospital administrators and policymakers. QMP should be implemented as a value-driven strategy to enhance employee commitment. Coming research should involve longitudinal and objective performance metrics to enhance the findings' generalizability.

Keywords: Quality Management Practices, Continuance Commitment, Affective Commitment, Normative Commitment, Organisational Performance

Introduction

In the contemporary hyper-competitive global marketplace, organisations are perpetually seeking strategic levers to enhance their performance, ensure sustainability, and secure a competitive advantage. The pursuit of operational excellence and superior quality has emerged as a paramount objective, transcending industries and national borders (Kumar & Gupta, 2024). This quest has propelled the adoption of holistic Quality Management Practices (QMPs), which are structured philosophies and sets of methodologies designed to improve processes systematically, meet customer expectations, and drive organisational success (Vassos et al., 2024). Core QMPs such as top management commitment, continuous improvement, teamwork, empowerment, statistical process control, and benchmarking are widely recognised as the bedrock of renowned frameworks like Total Quality Management (TQM) and Six Sigma (Hidayah et al., 2022). However, despite their theoretical appeal and documented successes, the implementation of QMPs does not universally guarantee enhanced organisational performance. A significant body of literature points to a "black box" phenomenon—a mediating mechanism that translates these practices into tangible outcomes (Claro & Naranjo, 2025). This research paper posits that this mechanism is fundamentally

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human and psychological, residing in the dimensions of organisational commitment exhibited by the workforce.

The foundation of any successful QMP initiative is unequivocally top management commitment. It is the catalyst that allocates resources, sets strategic quality goals, and champions the quality culture throughout the organisation (Schiavone et al., 2022). Without this visible and unwavering dedication, other QMPs risk becoming isolated, underfunded initiatives devoid of strategic impact. Continuous Improvement (Kaizen) represents the core operational philosophy of QMP, advocating for an ongoing effort to improve products, services, or processes through incremental and breakthrough improvements (Maguire et al., 2023). Teamwork facilitates the cross-functional collaboration necessary to solve complex problems that transcend individual departments. At the same time, empowerment grants employees the autonomy and authority to make decisions related to their work, fostering a sense of ownership and responsibility for quality. Statistical Process Control (SPC) provides the empirical backbone for quality efforts, using statistical methods to monitor and control processes, thereby reducing variability and preventing defects. Finally, Benchmarking offers a strategic outlook, allowing organisations to measure their performance against industry leaders and best-in-class practices, setting ambitious yet achievable targets (Kumar & Chandel, 2018). Despite the logical connection between implementing these practices and achieving better performance, the empirical evidence is often inconsistent. Some organisations report dramatic improvements, while others experience only marginal gains or outright failure (Králová & Král, 2019). This inconsistency suggests that the relationship is not direct but is instead influenced by critical intervening variables. Having a suggestion box for continuous improvement or SPC software without proper training is not enough. The difference lies in how those who engage in these practices day in and day out perceive and internalise them. Here is when the significance of organisational commitment comes in (Brewer et al., 2021).

Organisational commitment is a three-dimensional construct which refers to the psychological bond of individuals with their employing organisation. Adding affective, normative, and continuance commitment to the model provides a more refined level of analysis of the employee-organisation relationship. Affective commitment is emotional attachment and identification with the organisation. Continuance commitment refers to the perceived social and economic costs of leaving the organisation. Normative commitment is a feeling of obligation to remain with the employer (Nguyen et al., 2022). We argue that QMPs are intense precursors of these commitment behaviours. In particular, commitment emerges from top management commitment and empowerment, which create a climate of trust and lead to a strong affective commitment (Oh, 2019). Training the staff in SPC and teamwork can increase perceived costs of leaving (continuance commitment) if the organisation invest in the staff. Furthermore, a pervasive ethos of continuous improvement and fair treatment can cultivate a sense of mutual obligation and loyalty (normative commitment) (Miller & Banks-Hall, 2020; Wei et al., 2022).

These enhanced states of commitment are, in turn, powerful drivers of organisational performance. An effectively committed employee is likely to exhibit discretionary effort, champion quality initiatives beyond their basic job requirements, and contribute positively to a proactive quality culture (Bett, 2020). Employees with high continuance commitment may demonstrate lower absenteeism and higher retention, preserving organisational knowledge and reducing costs. Those with normative commitment are likely to be reliable and consistent in adhering to quality procedures and standards. Therefore, the ultimate impact of QMPs on performance outcomes—be they financial (profitability, ROI), operational (productivity, defect rates), or customer-focused (satisfaction, loyalty)—is likely channelled through this heightened level of collective commitment (Aletaiby et al., 2021; Reza, 2019).

This research, therefore, seeks to illuminate this critical mediating pathway. By investigating the relationships between key QMPs, the three dimensions of organisational commitment, and organisational performance, this study aims to contribute to both theoretical and practical domains (Yasmin et al., 2019). Theoretically, it will help unpack the "black box" between QMPs and performance, providing a more sophisticated psychological model of how quality initiatives yield results (Kumar et al., 2020). Practically, it will offer managers a more precise roadmap for implementation, emphasising that the ultimate goal of QMPs is not just to install processes, but to cultivate a deeply committed workforce that is emotionally, cognitively, and morally invested in the organisation's success. This shift in focus from purely technical systems to human psychological systems is essential for unlocking the full performance potential embedded within Quality Management Practices (Li, 2023).

While the relationship between QMPs, commitment, and performance is established in other sectors, a significant gap exists in the Pakistani health sector, where the role of the multi-dimensional nature of organisational commitment (affective, continuance, normative) as a mediator remains unexplored (Afzal et al., 2022). This study investigates explicitly this mediating pathway to determine how QMPs translate into performance gains within this unique, high-stakes context.

This research paper has two research objectives: (i) To analyse the influence of QMS on OP, (ii) To examine the mediation effect of continuous, affective & normative commitment in the relationship of QMS with OP. To guide the investigation towards achieving the stated objectives, this study will seek to answer the following research questions: (i) What is the effect of QMP on OP in healthcare institutions? (ii) To what extent do continuance, affective, and normative commitment mediate the relationship between QMP implementation and enhanced OP in hospitals? This research is poised to offer significant contributions: It will extend the application of the three-component model of organisational commitment to the under-researched context of Pakistan's health sector. It will test and refine existing theories on QMPs by uncovering the specific psychological pathways (mediation) that are most effective in a resource-constrained, high-stress environment. For hospital administrators, health policymakers, and quality managers in Pakistan, this study will provide an evidence-based roadmap. Instead of implementing QMPs as a mere technical exercise, the findings will highlight the need to strategically foster the right kind of commitment (primarily affective and normative) to achieve desired performance outcomes. It will offer insights into targeted interventions for improving staff motivation, retention, and ultimately, the quality of patient care.

Research Rationale

Despite their theoretical appeal and documented successes, the implementation of QMPs does not universally guarantee enhanced organisational performance. A significant body of literature points to a "black box" phenomenon—a mediating mechanism that translates these practices into tangible outcomes (Claro & Naranjo, 2025). This inconsistency suggests that the relationship is not direct but is instead influenced by critical intervening variables. The mere presence of a practice is insufficient; the determining factor is how these practices are perceived and internalised by the employees who must execute them daily. This research paper posits that this mechanism is fundamentally human and psychological, residing in the dimensions of organisational commitment exhibited by the workforce.

This study posits that organisational commitment is the key mediating mechanism. QMPs are theorised to foster the three dimensions of commitment—*affective*, *continuance*, and *normative*—by building trust, investing in development, and creating a culture of mutual obligation (Oh, 2019; Miller & Banks-Hall, 2020). It is this enhanced psychological attachment

that then drives performance by motivating discretionary effort, improving retention, and ensuring adherence to standards (Bett, 2020; Aletaiby et al., 2021).

Therefore, while the relationship between QMPs, commitment, and performance is established in other sectors, a significant gap exists in the Pakistani health sector, where the role of the multi-dimensional nature of organisational commitment as a mediator remains unexplored (Afzal et al., 2022). This study investigates explicitly this critical mediating pathway to determine how QMPs translate into performance gains within this unique, high-stakes context, aiming to unpack the "black box" and provide a more sophisticated psychological model of how quality initiatives yield results.

Research Hypotheses

H1: QMP have a positive and significant impact on OP.

H2: QMP have a positive and significant impact on continuous commitment.

H3: QMP have a positive and significant impact on affective commitment.

H4: QMP have a positive and significant impact on normative commitment.

H5: CC have a Positive and significant impact on OP.

H6: AC have a Positive and significant impact on OP.

H7: NC have a positive and significant impact on OP.

H8: CC mediates the relationship between QMP and OP.

H9: AC mediates the relationship between QMP and OP.

H10: NC mediates the relationship between QMP and OP.

Literature Review

The healthcare sector in Pakistan operates under immense pressure, grappling with challenges such as resource constraints, high patient volumes, and an urgent demand for improved service quality and patient safety. In response, healthcare administrators are increasingly turning to structured Quality Management Practices (QMPs) derived from Total Quality Management (TQM) principles as a strategic imperative to enhance organisational performance and patient outcomes. However, the successful implementation of these technical practices is inextricably linked to the human element within hospitals. This study is theoretically anchored in Social Exchange Theory (SET) (Blau, 1964) and TQM theory (Koskela et al., 2019; Shewhart, 1931) to explain the relationships between QMPs, organisational commitment, and organisational performance (Jonny & Zagloel, 2018).

Drawing on TQM theory, this research recognises QMPs, including top management commitment, continuous improvement, and statistical process control, as systematic approaches to process optimisation and quality enhancement that form the foundation of performance improvement in healthcare organisations (Ahmed & Sur, 2024). Simultaneously, Social Exchange Theory (SET) provides the crucial psychological framework for understanding how these technical practices influence human behaviour. SET suggests that when organisations invest in QMPs, healthcare professionals perceive these practices as organisational investments in their well-being and professional development, creating reciprocal obligations that enhance their organisational commitment (Miedaner et al., 2018; Wei et al., 2022).

Relationship between QMP and Organisational Performance

The TQM paradigm is that the effective implementation of a suite of QMP directly and positively influences OP (Claro & Naranjo, 2025). This relationship has been the subject of extensive empirical inquiry for decades, forming the bedrock of quality management theory. The logic is inherently operational: practices like Statistical Process Control (SPC) reduce variability and defects, Continuous Improvement (Kaizen) eliminates waste and enhances

efficiency, and Benchmarking identifies and adopts best practices, all leading to superior product quality, lower costs, and increased customer satisfaction (Bulto, 2023). These operational gains are theorised to translate directly into improved financial performance, including market share growth, profitability, and return on investment (ROI) (Tanjoyo et al., 2021).

Nwankwo et al. (2024) investigated this link, concluding that while many QMPs are themselves susceptible to imitation, their synergistic and deeply integrated implementation within an organisation's culture can create causal ambiguities that become a source of sustained competitive advantage (Rengkung, 2022). This "resource-based view" of QMPs suggests that their value lies not in the individual tools but in the complex, organisation-wide system they form. This finding was bolstered by a comprehensive meta-analysis conducted by Khatri et al. (2023), which synthesised evidence from numerous studies across various industries and countries (Maguire et al., 2023). Nair's work confirmed a significant positive correlation between QMP implementation and multiple dimensions of OP, notably distinguishing between operational performance (e.g., quality, flexibility, delivery speed) and financial performance. The study argued that QMPs first yield gains in operational metrics, which subsequently drive financial results (Khalfan et al., 2020).

Further support comes from studies that developed a causal model linking QMPs to performance. The research found that "soft" QMPs (e.g., management leadership, workforce management) indirectly influence performance through "hard" QMPs (e.g., process management, quality data reporting), ultimately affecting both market and financial performance (Singh et al., 2019). This body of literature affirms a direct, positive relationship, establishing that a holistic QMP system is a critical determinant of organisational success. However, the presence of inconsistent results in some studies hints at the existence of mediating variables that explain how this transformation from practice to performance occurs, leading researchers to look inside the "black box" of organisational behaviour (Vargas-Halabí & Perales, 2023).

The Relationship between QMP and Organisational Commitment Dimensions

The implementation of QMPs represents a significant organisational change that profoundly affects the work environment and, consequently, the psychological state of employees. Grounded in Social Exchange Theory (Blau, 1964), which governs relationships through reciprocal obligations, QMPs can be viewed as organisational investments in employees (Yu, 2022). These investments, when perceived as sincere and beneficial, create a sense of indebtedness that employees seek to repay through increased attachment and loyalty (Wei et al., 2022). This forms the basis of the relationship between QMPs and the three components of organisational commitment as defined by Allen & Meyer (1996): Affective (emotional attachment), Continuance (cost-based attachment), and Normative (obligation-based attachment) (Oh, 2019).

QMP and Continuance Commitment

The relationship between QMP and continuance commitment is more nuanced and indirect. CC is based on the perceived economic and social costs associated with leaving the organisation (Bakotić, 2021). QMPs can influence this calculus in several ways. Extensive training programs, a cornerstone of effective QMP implementation (e.g., training in Statistical Process Control or problem-solving methodologies), enhance an employee's firm-specific human capital. While this makes the employee more valuable to the organisation, it may also reduce their mobility if these skills are not easily transferable to other firms, thereby increasing the economic cost of leaving (Dachner et al., 2019).

Furthermore, involvement in Teamwork and a positive, quality-oriented work environment can build strong social ties and networks within the company. Leaving the organisation would mean sacrificing these relationships and the associated social capital, which adds a social cost to departure. As such, while not a primary goal of QMP, a potential outcome can be an increase in employees' continuance commitment (Younis et al., 2023).

QMP and Affective Commitment

The link between QMPs and affective commitment is the most robust and intuitively transparent. AC refers to an employee's emotional attachment to, identification with, and involvement in the organisation (Nguyen et al., 2020). Numerous QMPs are directly designed to foster these very feelings. For instance, Empowerment devolves decision-making authority, signalling trust and respect for employees' judgment, which fulfils their need for autonomy and competence. Teamwork creates a sense of camaraderie, shared goals, and social support, fulfilling the need for relatedness. Top management commitment, when visible and authentic, demonstrates that the organisation is worth believing in and investing oneself emotionally (Gagné et al., 2022; Li et al., 2022). Study consistently found that participatory practices like these are strong antecedents to AC (Huang, 2022). When employees are given a voice through Continuous Improvement programs and their ideas are valued and implemented, they feel a greater sense of ownership and emotional investment in the organisation's success, strengthening their affective bond (Reza, 2019).

QMP and Normative Commitment

Normative commitment stems from a feeling of moral obligation to remain with the organisation. QMPs can cultivate NC by creating a strong culture of reciprocity and mutual investment (Liu, 2022). When an organisation demonstrates a significant commitment to its employees' well-being—through investments in their training and development, ensuring their health and safety, treating them fairly, and valuing their input through Empowerment and Continuous Improvement systems—it can invoke a powerful norm of reciprocity (Pahos & Galanaki, 2022). Employees may internalise a sense of duty to "pay back" the organisation for its investments and fair treatment. This is often reinforced by Top Management, which frames the organisation as a "family" or a "team," strengthening the ethical imperative to remain loyal (Arocas & Valle, 2022). Research supports the notion that perceived organisational support, a key feature of people-oriented QMPs, is a significant antecedent to NC (Sartori et al., 2023).

Continuance Commitment and OP

The link between CC and OP is weak, often negative, or at best neutral. Employees with high CC remain with an organisation because they need to—due to sunk costs, a lack of alternatives, or financial obligations—not because they want to (Herrera & Heras-Rosas, 2021). This motivation results in a calculative, minimal-effort approach to work. Their primary goal is to retain their job, not to excel or help the organisation succeed (Serenko, 2023). This can manifest as mere compliance with rules, resistance to change, and a lack of initiative or innovation. In a quality context, such employees might follow SPC charts because they are forced to, but they will not look for root causes or suggest improvements (Xueyun et al., 2023). Therefore, while CC may reduce turnover, it does not contribute to, and can even detract from, the proactive and engaged behaviours required for superior organisational performance (Binatari et al., 2022).

Affective Commitment and OP

The positive relationship between AC and OP is the strongest and most consistent finding in commitment research. Employees with high AC strongly identify with the organisation's goals and wish to contribute to its success (Suciati et al., 2021). This emotional drive translates into

tangible benefits: they exhibit higher levels of discretionary effort, engage in organisational citizenship behaviours (OCBs) that help colleagues and improve processes, demonstrate lower rates of absenteeism and turnover, and are more likely to champion the organisation to outsiders (Zhao et al., 2022). A seminal meta-analysis confirmed a substantial positive correlation between AC and performance metrics. For an organisation pursuing quality, an effectively committed workforce is essential; they will diligently follow quality procedures, proactively seek improvements, and provide superior customer service, directly driving enhancements in operational and financial performance (Rachman, 2022).

Normative Commitment and OP

The relationship between NC and OP is positive but generally understood to be weaker than that of AC. A sense of duty and obligation drives employees with high NC. They are likely to be reliable, dependable, and consistent in their role performance because they feel it is the "right thing to do (Vance et al., 2020)." This ensures stable and predictable output, which supports consistent quality and reduces variability. They are less likely to leave the organisation, preserving institutional knowledge (Motsaathebe & Molefi, 2025). However, because their behaviour is motivated by obligation rather than intrinsic desire or enthusiasm, it may not extend to the same level of extra-role behaviour, creativity, and advocacy exhibited by affectively committed employees. They will do what is expected, but may not go above and beyond (Hadi & Tentama, 2020). Thus, NC supports good performance but may not be sufficient to drive the exceptional performance required for a significant competitive edge (Khaskheli et al., 2020).

Continuance Commitment (CC) as a Mediator between QMP and OP

In contrast, CC is not expected to be a significant mediator in the positive QMP-OP relationship (Khalid, 2020). The very nature of CC is calculative and based on a lack of alternatives, not on a positive exchange. Since QMPs are generally not designed to trap employees but to engage them, they are unlikely to be a strong antecedent to CC (Rubel et al., 2023). More importantly, as established, CC has a negligible or even negative relationship with the proactive, discretionary behaviours that drive performance (Wang & Shaheryar, 2020). Therefore, even if a weak link exists, CC does not constitute a meaningful or positive psychological pathway through which QMPs achieve their performance benefits. Its role as a mediator is theoretically and empirically unsupported (Kubiak, 2020).

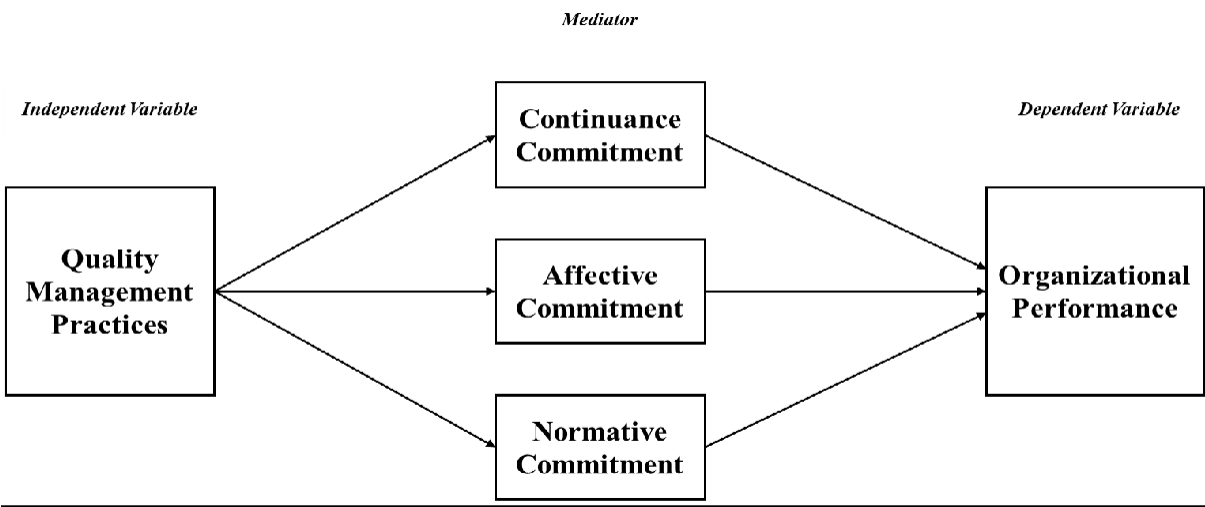
Affective Commitment as a Mediator between QMP and OP

AC is theorised to be the most potent and significant mediator in the QMP-OP relationship (Duarte et al., 2021). The proposed pathway is as follows: Implementing "soft" people-oriented QMPs (e.g., Top management commitment, empowerment, teamwork) creates a supportive, trusting, and engaging work environment (Baber, 2021). This environment fulfils employees' psychological needs, leading to the development of a strong emotional attachment to the organisation (AC). These affectively committed employees, in turn, become voluntary agents of performance (Zhu & Song, 2022). They channel their energy, creativity, and dedication towards achieving organisational objectives, diligently applying "hard" QMPs (e.g., SPC, Benchmarking), seeking out Continuous Improvements, and providing exceptional quality (Kumar et al., 2020). Therefore, AC is the vital psychological engine that translates management's quality practices into tangible results. Empirical support for this is strong; the study found that AC is a key mediating variable through which QMP influences performance outcomes (Iqbal et al., 2020).

Normative Commitment (NC) as a Mediator between QMP and OP

NC can also act as a meaningful mediator, particularly in cultures where collectivism and reciprocity are highly valued. The mediating pathway for NC involves a debt-repayment model (Afshari, 2020). QMPs that demonstrate organisational support and investment in employees (e.g., extensive training, fair treatment, job security) create a perceived debt or moral obligation on the part of the employee (NC) (Sulistiyani, 2022). To repay this debt and fulfil their obligation, employees respond with heightened loyalty, reliability, and consistent role performance. This dependable execution of quality-related tasks and procedures supports stable operational performance (Berry et al., 2021). While the driving force is obligation rather than passion, it nonetheless ensures that quality standards are met consistently, thereby mediating the relationship between QMP and OP, albeit likely with a weaker effect than AC (Claro & Naranjo, 2025).

Figure 1: Theoretical framework



Methodology

Research Design and Sampling Strategy

This study employed a quantitative, cross-sectional, and deductive research design to investigate the proposed hypotheses. The target population consisted of employees working within the public healthcare sector in the twin cities of Rawalpindi and Islamabad, Pakistan. A non-probability convenience sampling technique was utilized to collect data from five major public hospitals. This method was deemed appropriate for accessing a large number of willing participants who possessed direct experience with the phenomena under study specifically, their perception of QMPs and their relationship to their own commitment and their hospital's performance. The final sample size was 540 respondents, encompassing a diverse range of hospital staff including medical officers, nurses, technicians, and administrative personnel to ensure a comprehensive perspective.

Sample size

The study population consists of approximately 28,500 public sector health employees in the Rawalpindi and Islamabad region (Finance, 2024). Data was collected from a final sample of 540 respondents. This sample size exceeds the minimum requirement of 380 calculated using Cochran's formula for a finite population, ensuring the results are statistically robust and generalizable (Cochran, 1977).

Data Collection Procedure

The public sector health workers at Rawalpindi and Islamabad were approached through a structured self-administered questionnaire. The instrument was administered both onsite and electronically via e-mail to ensure greater coverage and active participation. Participation was voluntary and the anonymity of all contributions was always maintained.

Measurement Instrument

The scales employed in this study were derived from instruments that already existed in literature so that face validity and robustness are guaranteed. All items were rated on a five-point Likert scale: strongly disagree (1) to strongly agree (5). As for the specific adaptations: eighteen items of organizational commitment six per dimension (Affective Commitment, AC; Continuance Commitment, CC; Normative Commitment, NC) were adapted from Allen & Meyer, (1996). There are 35 items of quality management practices (QMP) adopted from Alkhaldi & Abdallah, (2022). Four dimensions of OP had been drawn from (Lee et al., 2011; NIST, 2015).

Data Analysis Technique

The data were analyzed in Smart-PLS 4.0 for variance-based SEM, which was selected to suit predictive research and mediation models with complexity. The analysis comprised a two-staged approach:

Measurement Model Assessment: CFA was used to examine the reliability and validity of the measurement model. This analysis involved testing internal consistency (Cronbach's Alpha, Composite Reliability), convergent validity (Average Variance Extracted) and discriminant validity (Fornell-Larcker criterion) (Fornell & Larcker, 1981).

Structural Model Assessment: Bootstrapping was applied to test the proposed paths. This tested the direct effects of QMP on mediators (AC, CC, NC) and outcome (OP), as well as the specific indirect effects examining the proposed mediation.

Results

Measurement and Validity

The measurement model was evaluated to ensure the reliability and validity of the constructs. Confirmatory Factor Analysis (CFA) was conducted using Smart-PLS software. Internal consistency was assessed using Cronbach's Alpha and Composite Reliability (rho_a and rho_c). As shown in Table 4.1, all values for Cronbach's Alpha and Composite Reliability exceed the recommended threshold of 0.70, indicating excellent internal consistency and reliability for all constructs (Hair et al., 2020). Convergent validity was assessed using Average Variance Extracted (AVE). The AVE values for all constructs, as detailed in Table 1, are above the acceptable limit of 0.50, confirming that each construct explains more than half of the variance of its indicators on average, thus establishing strong convergent validity (Fornell & Larcker, 1981).

Table 1: Measurement Model Estimates

Construct	Item	Loading	(α)	CR (rho_c)	AVE
AC	AC1	0.853	0.926	0.942	0.730
	AC2	0.896			
	AC3	0.898			
	AC4	0.888			
	AC5	0.784			
	AC6	0.802			
NC	CC1	0.893	0.953	0.962	0.810
	CC2	0.917			
	CC3	0.903			
	CC4	0.914			
	CC5	0.899			
	CC6	0.873			
NC	NC2	0.770	0.858	0.898	0.638
	NC3	0.799			
	NC4	0.761			
	NC5	0.829			
	NC6	0.831			
OP	OP1	0.808	0.857	0.903	0.699
	OP2	0.835			
	OP3	0.862			
	OP4	0.839			
QMP	QMP1	0.766	0.982	0.983	0.653
	QMP2	0.765			
	QMP4	0.803			
	QMP6	0.826			
	QMP8	0.808			
	QMP9	0.808			
	QMP10	0.818			
	QMP11	0.813			
	QMP12	0.787			
	QMP14	0.815			
	QMP15	0.802			
	QMP16	0.802			
	QMP17	0.801			
	QMP18	0.814			
	QMP19	0.830			
	QMP20	0.815			
	QMP21	0.802			
	QMP22	0.804			
	QMP23	0.792			
	QMP24	0.812			
	QMP25	0.821			
	QMP26	0.836			
	QMP27	0.839			
	QMP28	0.791			
	QMP29	0.796			
	QMP30	0.811			
	QMP31	0.799			
	QMP32	0.843			
	QMP33	0.809			
	QMP34	0.813			

All factor loadings, reliability values (α , rho_a, rho_c), and AVE values meet the recommended thresholds, confirming the constructs' reliability and convergent validity.

Discriminant Validity

Discriminant validity was assessed using the Heterotrait-Monotrait (HTMT) ratio and the Fornell-Larcker criterion. The HTMT ratios, presented in Table 2, are all well below the conservative threshold of 0.85, indicating that the constructs are distinct from one another (Ab Hamid et al., 2017; Henseler et al., 2015).

Table 2: HTMT Ratio

AC	CC	NC	OP	QMP
AC				
CC	0.582			
NC	0.445	0.412		
OP	0.500	0.456	0.644	
QMP	0.509	0.360	0.235	0.146

Furthermore, as per the Fornell-Larcker criterion in Table 3, the square root of the AVE for each construct (diagonal values) is greater than its highest correlation with any other construct (off-diagonal values), providing robust evidence for discriminant validity (Fornell & Larcker, 1981).

Table 3: Fornell-Larcker Criterion

	AC	CC	NC	OP	QMP
AC	0.854				
CC	0.549	0.900			
NC	0.400	0.372	0.799		
OP	0.455	0.412	0.557	0.836	
QMP	0.484	0.353	0.218		

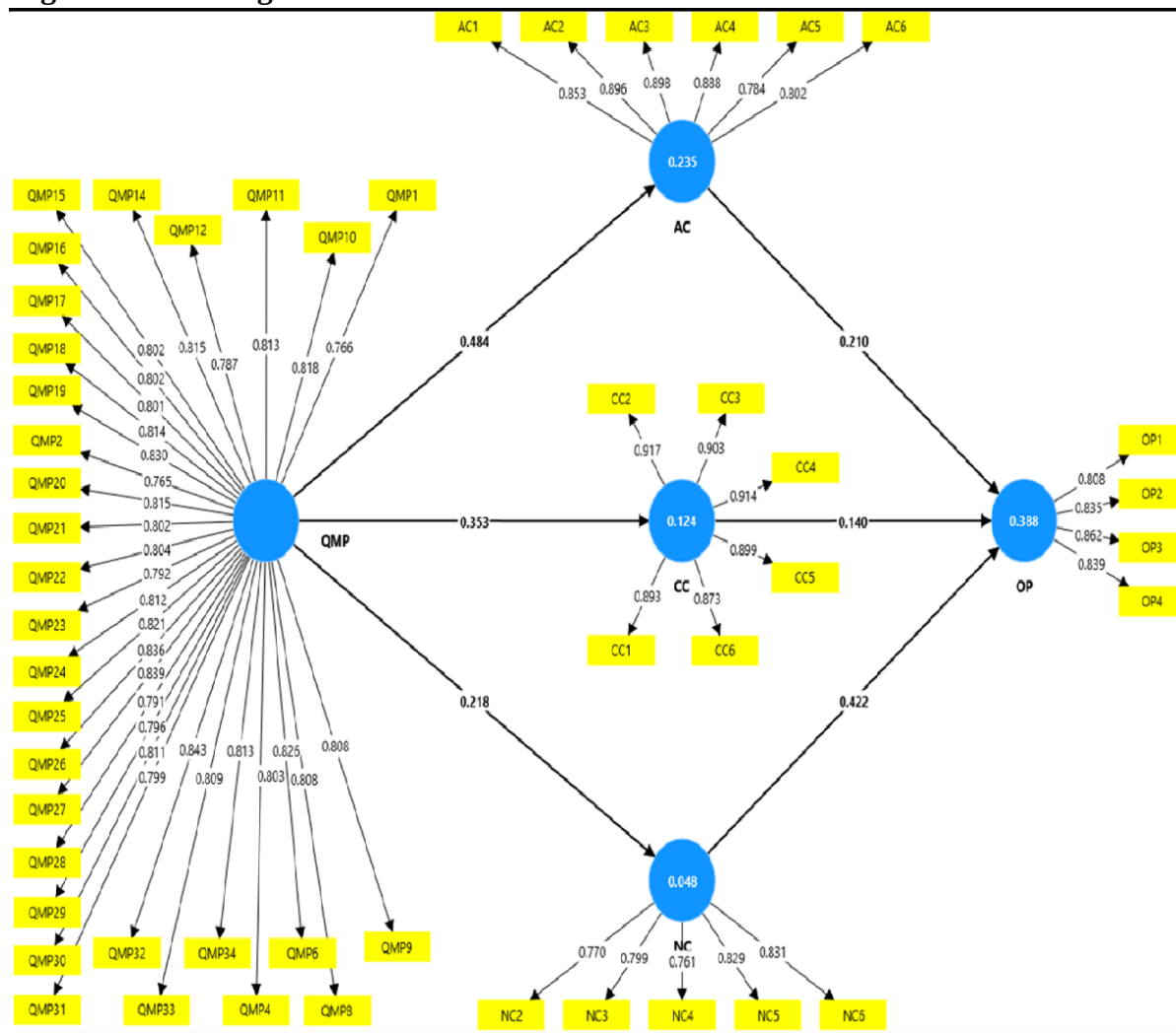
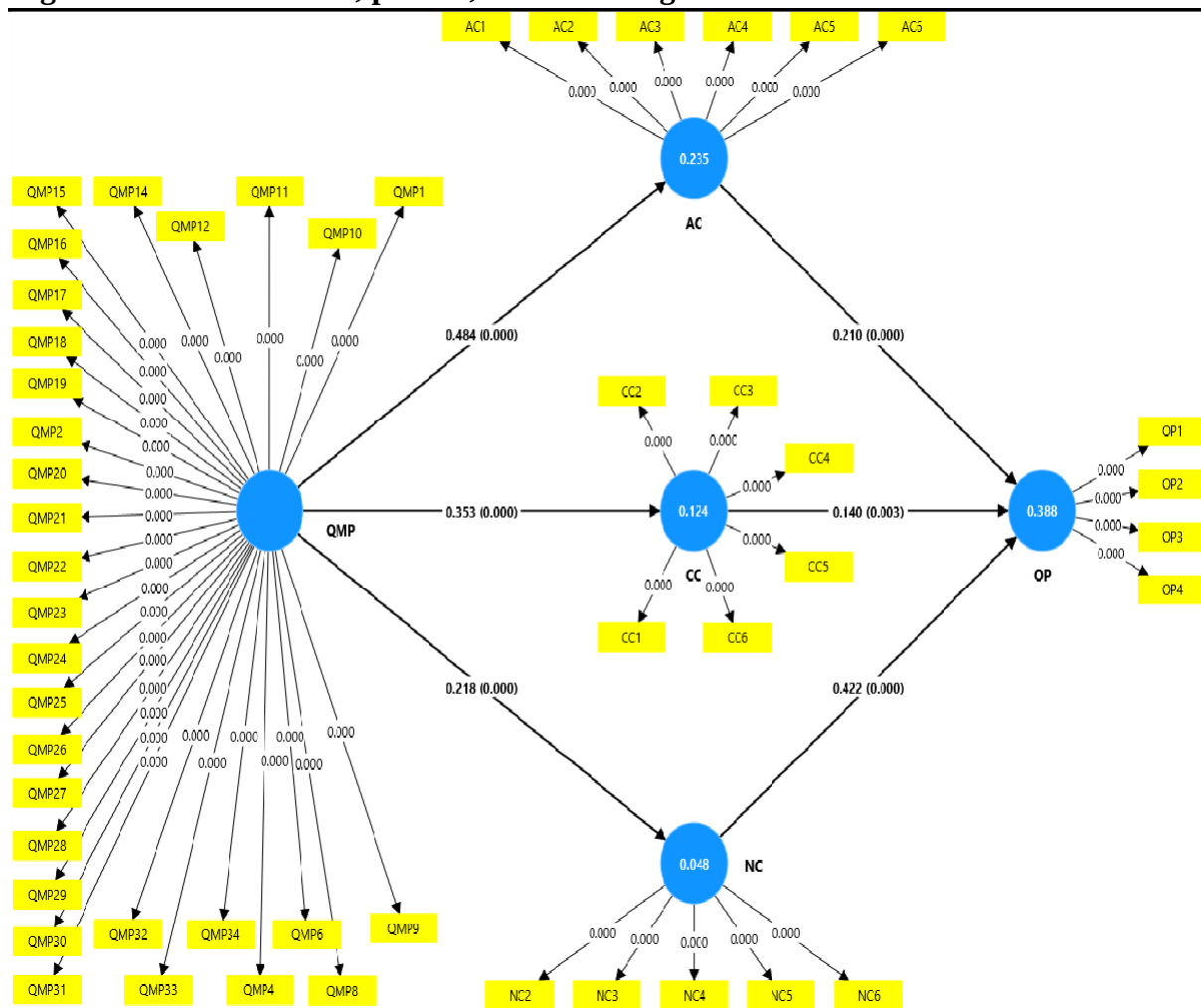
Figure 2: Path diagram of valid items and R²

Figure 3: Path coefficient, p value, factor loading and R²**Structural Model (Bootstrapping)**

The findings provide strong empirical support for the proposed research model, confirming both direct and indirect mediating effects.

The analysis first confirms a significant positive direct effect of QMP on OP (H1: $\beta = 0.243$, $p < 0.001$). This indicates that implementing QMP directly enhances performance in the studied organizations. Furthermore, the results strongly support the hypothesis that QMP is a crucial antecedent to all three dimensions of OC. QMP has a significant positive effect on CC (H2: $\beta = 0.353$, $p < 0.001$), a very strong effect on AC (H3: $\beta = 0.484$, $p < 0.001$), and a smaller yet still significant effect on NC (H4: $\beta = 0.218$, $p < 0.001$). This means QMP initiatives successfully foster a workforce that is emotionally attached to the organization, perceives high costs of leaving, and feels a moral obligation to remain.

The analysis also confirms that each dimension of commitment itself is a significant driver of organizational performance. Both CC (H5: $\beta = 0.140$, $p = 0.003$) and AC (H6: $\beta = 0.210$, $p < 0.001$) have a positive impact. Most notably, NC (H7: $\beta = 0.422$, $p < 0.001$) demonstrates the strongest direct influence on performance, suggesting that a sense of duty and obligation is the most powerful performance driver among the commitment types.

Crucially, the results confirm the core mediating hypothesis of the study. The specific indirect effects are all statistically significant, proving that organizational commitment functions as a vital "black box" mechanism through which QMP translates into performance gains. The paths QMP → CC → OP (H8: $\beta = 0.049$, $p = 0.005$), QMP → AC → OP (H9: $\beta = 0.102$, $p < 0.001$),

and $\text{QMP} \rightarrow \text{NC} \rightarrow \text{OP}$ ($\text{H10: } \beta = 0.092, p < 0.001$) are all confirmed. In summary, the implementation of quality management practices leads to enhanced organizational performance not only directly as show in Table 4.

Table 4: Direct and Mediating Effect

Hypotheses	Relationship	Original sample (O)	M	SD	t	P
H1	$\text{QMP} \rightarrow \text{OP}$	0.243	0.243	0.033	7.464	0.000
H2	$\text{QMP} \rightarrow \text{CC}$	0.353	0.354	0.053	6.665	0.000
H3	$\text{QMP} \rightarrow \text{AC}$	0.484	0.485	0.049	9.869	0.000
H4	$\text{QMP} \rightarrow \text{NC}$	0.218	0.220	0.048	4.563	0.000
H5	$\text{CC} \rightarrow \text{OP}$	0.140	0.139	0.048	2.930	0.003
H6	$\text{AC} \rightarrow \text{OP}$	0.210	0.211	0.051	4.142	0.000
H7	$\text{NC} \rightarrow \text{OP}$	0.422	0.422	0.041	10.342	0.000
H8	$\text{QMP} \rightarrow \text{CC} \rightarrow \text{OP}$	0.049	0.049	0.017	2.837	0.005
H9	$\text{QMP} \rightarrow \text{AC} \rightarrow \text{OP}$	0.102	0.102	0.024	4.176	0.000
H10	$\text{QMP} \rightarrow \text{NC} \rightarrow \text{OP}$	0.092	0.093	0.021	4.321	0.000

QMP = Quality Management Practices; AC = Affective Commitment; CC = Continuance Commitment; NC = Normative Commitment; OP = Organizational Performance.

Discussion

This study aimed to investigate the mechanism through which QMP enhance OP in the public sector hospitals of Rawalpindi and Islamabad, Pakistan, by examining the mediating roles of the three dimensions of Organisational Commitment (OC): CC, AC, and NC. The findings provide strong support for the proposed hypotheses and offer a nuanced understanding of the social and psychological processes at play. The discussion interprets these results through the dual theoretical lenses of TQM and Social Exchange Theory (SET).

Direct Effects

The findings provide robust empirical validation for the proposed direct relationships within the model, confirming the foundational principles of both TQM and SET. The significant positive effect of QMP on OP ($\text{H4: } \beta = 0.243, p < 0.001$) establishes that the systematic implementation of quality standards directly enhances efficiency and outcomes in Pakistan's public health sector, demonstrating the transferability of TQM principles to resource-constrained environments. Furthermore, the results confirm QMP as a potent antecedent to all three dimensions of organisational commitment. The strong effect on AC ($\text{H3: } \beta = 0.484, p < 0.001$) can be interpreted through the lens of SET's reciprocity norm, where organisational investments in QMP—such as empowerment and recognition—are reciprocated with emotional attachment and identification. The significant impact on Continuance Commitment (CC) ($\text{H2: } \beta = 0.353, p < 0.001$) is explained by the increased perceived costs of leaving associated with specialised QMP training, while the effect on NC ($\text{H1: } \beta = 0.218, p < 0.001$) suggests employees internalise the ethical values of quality and care, fostering a sense of moral obligation. Crucially, all three commitment dimensions were confirmed as significant drivers of performance (H5, H6, H7), with NC ($\beta = 0.422, p < 0.001$) emerging as the strongest predictor, highlighting that a sense of duty is the most potent motivator for healthcare workers in this context, surpassing both emotional attachment and calculative retention.

Discussion of the Mediating Mechanisms

The confirmation of the specific indirect effects (H8, H9, H10) represents the core theoretical contribution of this study, unveiling the nuanced psychological mechanism that translates quality practices into performance gains. The results demonstrate that organisational commitment functions as a vital mediating "black box," revealing a dual pathway for QMP's influence. The first is a direct technical pathway where process optimisation and error reduction directly enhance performance. The second, and equally critical, is an indirect social-psychological pathway explained by Social Exchange Theory: the organisation's provision of QMP is perceived as a benefit, which employees reciprocate through heightened commitment, thereby motivating the discretionary effort and behaviours that directly improve performance. The partial nature of this mediation indicates that both pathways operate concurrently and are mutually reinforcing. This synergy between the technical system of TQM and the human system, as explained by SET, is essential for creating a sustainable performance advantage. It clarifies that successful QMP implementation requires more than just installing processes; it necessitates winning employee buy-in by fostering a workforce that is emotionally invested, feels morally obligated, and perceives value in staying. This ensures that quality initiatives are not just followed but championed by committed employees.

QMP and performance are significantly mediated by employee commitment, as explained by Social Exchange Theory. The results show that QMPs, perceived as organisational investments, foster a sense of duty (normative commitment) and emotional attachment (affective commitment), which in turn motivate employees to drive performance gains. In conclusion, for practical recommendations, hospital administrators should implement QMP not just as a technical tool but as a value-driven strategy to cultivate this sense of duty and belonging, thereby unlocking the full performance potential of their workforce.

Conclusion

In conclusion, this study successfully demystifies the "black box" between QMP and OP in Pakistan's public health sector. The findings confirm that OP is enhanced through two simultaneous pathways: a direct technical effect from process improvements and a robust indirect effect mediated by employee commitment. Crucially, the research provides nuanced evidence that QMP fosters all three dimensions of commitment: affective, continuance, and normative. Notably, normative commitment (a sense of moral obligation) emerges as the most powerful driver of performance.

Therefore, the ultimate contribution of this study is to reveal that sustainable performance gains are not achieved by implementing QMP as merely a set of technical procedures. Instead, success is contingent on managing QMP as a profound social exchange that wins employees' hearts (affective commitment), demonstrates valuable investment (continuance commitment), and, most importantly, inspires a shared sense of duty (normative commitment). For managers, this underscores the imperative to champion QMP not just as an operational strategy but as a values-driven culture that resonates with the moral ethos of healthcare professionals.

In light of these findings, it is recommended that hospital administrators and policymakers shift their focus from implementing quality management practices as a mere set of technical procedures to adopting them as a value-driven strategy aimed at cultivating employee commitment. Specifically, efforts should be prioritised on fostering a profound sense of duty and moral obligation (normative commitment) among healthcare staff, as this was the most potent mediator for performance. This can be achieved by framing quality initiatives around core professional values and reinforcing a culture of reciprocity and trust.

Theoretical Contributions

This study integrates TQM and Social Exchange Theory, revealing the dual pathways through which QMP enhance performance. It empirically validates the three dimensions of organisational commitment as critical mediators, solving the "black box" problem. The finding that NC is the strongest performance driver offers a crucial nuance, highlighting the role of moral obligation in high-duty sectors like healthcare.

Practical Implications

This research provides a clear blueprint for healthcare leaders: prioritise building employee commitment alongside process improvement. Managers must frame QMP as a values-driven philosophy, not just a technical tool, to inspire moral duty (normative commitment). By empowering staff and providing development, they can foster the emotional and calculative bonds that transform quality procedures into passionately championed goals.

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