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ABSTRACT

In today's competitive landscape, while it is crucial to promote and enhance managerial creativity for sustaining organizational resilience within an increasingly competitive environment, there are limited studies examining this relationship in fragile economies, especially in service sectors like the Yemeni insurance industry, where economic uncertainty is high and there is an urgent need for internally-based innovative activities. This study focuses on how Organizational Culture (OC) affects Managerial Creativity (MC) directly and indirectly via Total Quality Management (TQM), specifically in Yemen's insurance industry. The research framework is based on socio-technical systems theory, combining both Cultural (Social) and Quality Management (Technical) subsystems to understand creative managerial behavior in resource-constrained service environments. The study used a quantitative research design, collecting data from 292 managers in Yemen's insurance sector in Sana'a. Data analysis employed Partial Least Squares Structural Equation Modeling (PLS-SEM). Results show that organizational culture significantly predicts TQM implementation ($\beta = 0.776$, $p < 0.001$) and managerial creativity ($\beta = 0.784$, $p < 0.001$). TQM positively relates to managerial creativity ($\beta = 0.344$, $p < 0.001$) and partially mediates the OC-MC relationship ($\beta = 0.267$, $p < 0.001$). The model explains 66.2% of the variance in managerial creativity, demonstrating strong explanatory power. This study extends socio-technical systems theory by illustrating how social and technical subsystems interact to foster innovation.

Contribution/Originality: This study contributes to extending socio-technical systems theory by illustrating how the interaction of a social subsystem and a technical subsystem result in the emergence of a dynamic capability for innovations. In addition, it expands understanding of how the relationship between organizational creativity develops in a vulnerable economy.

1. INTRODUCTION

In a technological and globally competitive age, organizations are under increasing pressure to maintain creativity and flexibility (Hokmabadi, Rezvani, & De Matos, 2024). Managerial creativity is defined as a manager's capability to generate and execute new ideas that improve decision-making and performance (Amabile, 2019). Thus, the management creativity becomes critical to organizational resilience. Creativity is not socially and structurally autonomous; creativity is a part of the organization that is socially and structurally bounded by surrounding norms and managerial practices to facilitate or constrain creativity (Zhang, Zeng, Liang, Xue, & Cao, 2023).

Organizational culture (OC) is the accumulation of "shared values, beliefs, and norms used to regulate collective behavior" (Denison, 1990; Schein, 2016). A culture characterized by participation and adaptability is conducive to

openness to risk-taking and a willingness to learn the elements critical for creative and efficient problem solving (Martins & Terblanche, 2003; Naranjo-Valencia, Jiménez-Jiménez, & Sanz-Valle, 2016). On the other hand, Total Quality Management (TQM) provides organizations with a methodology intended to put in place structured managerial practices. TQM stresses the importance of customer focus, teamwork, improvement processes, and management leadership in an organizational inquiry (Bobe & Teklay, 2025; Oakland, 2014). When OC and TQM systems are aligned, organizations can transform collective creative capacity and capability into a defined process that will produce sustainable innovation (Aichouni, Silva, & Ferreira, 2024; Prajogo & Sohal, 2006).

Despite considerable prior work related to the relationships between OC, TQM, and MC, several conceptual and empirical gaps remain. It is noticed that the majority of the existing research gives attention to the employees' creativity ignoring the managerial level creativity, which is the direct driver of strategic renewal and complex decision-making (Miron-Spektor & Paletz, 2024). Similarly, although several studies have addressed TQM as a driver of organizational performance, its mediating role in translating and transforming the OC values into creative actions among managers is still less known (Dimitrantzou, Psomas, Bouranta, & Kafetzopoulos, 2022; Yunis, Jung, & Chen, 2013). Adding to that, most of the empirical evidence is conducted in high-income and stable contexts, where low-income and unstable contexts are still unexplored (Issah, Bluwey, & Ackah, 2024; Yirga & Beshir, 2025). These gaps are particularly salient in Yemen's insurance sector, where economic volatility, regulatory ambiguity, and conservative managerial systems lead to hindered managerial creativity and innovation (Ganesan, 2025). Hitherto, rising customer expectations demand adaptive and creative managerial responses. In such settings, it is essential to strengthen participatory cultural values and TQM-driven improvement routines. This may offer an internally grounded path to enhancing creativity, even in the absence of robust external resources. However, empirical studies validating these dynamics in fragile service economies remain scarce.

Accordingly, this study addresses the following research question.

How does organizational culture influence managerial creativity, and what is the mediating role of Total Quality Management in this relationship within the Yemeni insurance sector?

In order to answer this research question, three complementary theoretical perspectives were adopted and employed in the study, which includes socio-technical systems theory (Baxter & Sommerville, 2011), the Resource-Based View RBV (Mailani, Hulu, Simamora, & Kesuma, 2024), and Organizational Culture (OC) theory (Denison & Mishra, 1995). The combination of these three perspectives together views OC as the social subsystem and TQM as the technical subsystem. These two subsystems interplay and interact to produce the innovative and managerial behavior that leads continuing competitive edge.

This investigation results in three main contributions. First, it advances socio-technical systems theory by testing the interaction between cultural and managerial fields in a developing-world service context. Second, it expands our understanding of managerial creativity by calling attention to TQM as a mediating mechanism that institutionalizes creativity in structured and orderly processes. Finally, this also provides relatively rare empirical evidence from Yemen that innovation capacity can be developed even in a volatile environment when focusing on internal alignment, as opposed to relying on external investment. As a cohesive contribution, these three process- and system-oriented contributions jointly advance theory, methodology, and practice in the fields of organizational culture, quality management, and creativity.

1.1. Theoretical Lenses

This research employs three complementary theoretical perspectives, namely socio-technical systems theory, resource-based view (RBV), and organizational culture theory, to explain the dynamic interaction between cultural and managerial systems that promotes creativity. Socio-technical systems theory (Baxter & Sommerville, 2011) posits that the potential for organizational innovation is a result of the alignment of social and technical subsystems. In this context, organizational culture is the social subsystem that fosters behaviors and relationships within the

organizational setting, and total quality management (TQM) is the technical subsystem that governs managerial systems in the organizational setting. When the social and technical subsystems are aligned, they create the contexts for creativity to emerge as a system property rather than an individual trait (El Manzani, Sidmou, & Cegarra, 2019).

From the RBV perspective (Barney, 1991), culture is an intangible strategic resource that develops collaboration and learning, while TQM serves as a dynamic capability that implements cultural resources in the form of continuous improvement and feedback mechanisms (Issah et al., 2024). The point of convergence allows managers to turn cultural values into creative action.

Finally, organizational culture theory (Denison & Mishra, 1995) posits how values of involvement, adaptability, and mission clarity leads to the improvement of innovation. When these values are reinforced by TQM principles of teamwork, quality improvement, and customer focus, they become institutionalized and creativity becomes encouraged and reliable (Coelho, Mojtahedi, Kabirifar, & Yazdani, 2022). Therefore, socio-technical theory clarifies the interactional mechanism, RBV elaborates on the strategic value, and culture theory delineates the behavioral dynamics underlying the relationship between organizational culture, TQM, and managerial creativity.

2. LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

2.1. Organizational Culture as the Foundation for Managerial Creativity

Organizational culture (OC) is a common pool of the collective shared values, beliefs, and norms of behavior that shape the way organizational members understand events and address problems (Denison, 1990; Schein, 2016). It serves as the primary source of shaping managers' decision-making, relationship dynamics, and innovation processes (Martins & Terblanche, 2003; Zhang et al., 2023). A participatory, learning-oriented, and adaptable culture beams conditions of openness, psychological safety, and trust that are often regarded as some of the most essential factors for creativity (Amabile, 1997; Miron-Spektor & Paletz, 2024).

The managerial creativity is totally differentiated from the so-called employee creativity. In other words, the former is linked to a higher level in terms of problem-solving, strategic resource allocation, and cross-functional integration (De Barros, Resende, & Pontes, 2025). Research continues to demonstrate that empowering and shared responsibility cultures provide managers with the ability to try new ideas and challenge existing routines (Valentin & Călin, 2024; Yusof et al., 2024). In contrast, control-oriented or hierarchical cultures suppress innovation through excessive formalization and fear of failure (Iddrisu, 2025).

In service industries like insurance, customer experience and responsiveness generate competitiveness, so flexibility and customer orientation are critical aspects of culture (Kandampully, 2002). Managers positioned in cultures can creatively rethink the design and delivery of services, the design of products, and the communication processes to accommodate more dynamic expectations from their clients. In socio-technical systems thinking, culture is the social subsystem that determines communication and collaboration norms, which serve to permit and stimulate these kinds of creative managerial behaviors to emerge and thrive (Baxter & Sommerville, 2011).

In economies as fragile as Yemen, establishing a culture that is participative and trust-based opens the path for decreasing the burden of external constraints, such as reduced resources and bureaucratic inertia. The establishment of a shared purpose approach, the firms can introduce a feeling of inclusion and solve overlooked creative potential among the managers and employees. Thus, OC has a double-edged role. Specifically, it acts as both an environmental enabler and a strategic intangible asset for sustained creativity and adaptability (Denison & Mishra, 1995; Mailani et al., 2024).

H₁: OC has a positive and significant effect on MC.

2.2. Organizational Culture and the Implementation of Total Quality Management

Empirical evidence consistently shows that a participative, open, and collaborative culture is fundamental to successfully embedding TQM principles (Morales-Huamán et al., 2023; Sadikoglu & Zehir, 2010). In such cultures,

values like shared responsibility and customer focus make TQM a natural, intrinsic practice rather than an imposed set of rules (Coelho et al., 2022; Palumbo & Douglas, 2024). Conversely, in hierarchical or compliance-driven cultures, TQM implementation often remains superficial, yielding symbolic rather than substantive improvements (Prajogo & Sohal, 2006).

Recent studies reinforce this, demonstrating that cultural alignment enhances TQM's impact on innovation and performance (Almaamari, Al-Mekhlafi, Kanwal, & Dawwas, 2025; Bobe & Teklay, 2025; Coelho et al., 2022). This is critically relevant in the Yemeni insurance sector, where dominant formal structures and low risk tolerance necessitate a participative culture. Without this cultural foundation, TQM efforts risk being perceived as mere administrative formalities rather than transformational practices, underscoring that culture provides the essential behavioral infrastructure for institutionalizing continuous improvement.

H₂: OC has a positive and significant effect on the implementation of TQM.

2.3. Total Quality Management as a Catalyst for Managerial Creativity

It is established that the appropriate implementation of TQM influences managers' ability to generate new ideas (Basadur & Robinson, 1993). Creativity is typically viewed as spontaneous and intuitive, but it is the TQM role that provides the structure to convert creativity into systematic innovation across the organization (Bisho & Sam, 2022; Prajogo & Sohal, 2006). The TQM principles, such as customer focus, employee engagement, continuous improvement, and leadership commitment, create the managerial conditions for creativity to be maintained and replicated (Kim, Kumar, & Kumar, 2012; Oakland, 2014).

First, customer orientation incentivizes managers to be more inventive when designing and delivering service (Meneses, Coelho, & Dimas, 2026). Second, the continuous improvement (Kaizen) principle inspires tests and small-scale innovation as part of everyday work (Reza et al., 2025). Third, employee engagement promotes participative problem solving and knowledge sharing, which are critical precursors of creative thought (Kwon & Kim, 2025). Finally, top management support legitimizes risk-taking and gives peace of mind for experimentation (Chen, Amoako, Quansah, Danso, & Jidda, 2023).

According to the argumentations of some early scholars, many of the early scholars argued that because TQM emphasizes standardization, it could impede innovation (Benner & Tushman, 2003). Recent research and scholars have shown, however, that TQM can enable easier creativity if it is used in a supportive/flexible cultural environment. TQM can produce what Aichouni et al. (2024) describe as "Structured Creativity". This model allows for the discipline of a process yet, combined with an ability to be open to new ideas, enables organizations to continuously innovate and do so effectively.

In Resource-limited environments like Yemen, there is an increased likelihood of risk as well as an increased likelihood of failure. In such contexts, TQM creates a foundation upon which to embed new ideas into the organization. Organizations using TQM create a steady structure that allows for creativity to be included as part of ongoing improvements (continuous improvements), which allows for a continual development of an organization's continuous improvement system. Continuous improvements allow organizations to convert individual creative ideas and thoughts into collective learning and create innovative operational practices (Bobe & Teklay, 2025; Issah et al., 2024). TQM serves as both a catalyst for turning creative managerial ideas into tangible, successful outcomes and as a conduit through which creative ideas can be refined, improved, and finally delivered to others within the organization.

H₃: TQM has a positive and significant effect on MC.

2.4. The Mediating Role of Total Quality Management

The mediating mechanism of TQM between OC and MC lies in its ability to translate cultural potential into structured managerial processes (Hassan, Rhee, & Dedahanov, 2019). Specifically, OC provides the normative and

attitudinal foundations such as values of openness, trust, and shared learning (Bogale & Debela, 2024). On the other hand, TQM operationalizes these attributes through continuous improvement routines, feedback systems, and participatory management practices (Dimitrantzou et al., 2022; Zu, Robbins, & Fredendall, 2010).

From a socio-technical systems standpoint, TQM can be viewed as the technical subsystem that operationalizes the social subsystem (culture), which is potential for generating uniqueness into a deliverable innovation (Baxter & Sommerville, 2011). Through this convergence, creativity becomes institutionalized; it is not just encouraged but built into the organizational routines (El Manzani et al., 2019; Salzmänn-Erikson, Olsson, Rezagholi, Fjellström, & Osarenkhoe, 2024). Two empirical studies also suggested a role for TQM in bridging cultural enablers of innovation with the resulting performance (Yunis et al., 2013) and Isnaini et al. (2021).

The mediating role of TQM is a particularly critical mechanism, especially in developing and turbulent economies like Yemen. It stabilizes the creative process by providing procedural clarity and accountability. Additionally, it leverages collectivist cultural strengths such as cooperation and adaptability (Heringer, Carvalho, & Sampaio, 2022). For example, in the Yemeni insurance sector, where uncertainty and limited resources limit and hinder organizational creativity, TQM offers a practical mechanism to systematize and sustain creativity.

In this sense, TQM is defined as a processual mediator that links supportive cultural values to the behavioral outcome of creativity. By creating structure through feedback loops and enacting participative management practices to operationalize supportive cultural values, it turns cultural aspirations into ongoing creative performance across the organization, rather than isolated acts of creativity.

H₁: TQM mediates the relationship between OC and MC.

2.5. Conceptual Framework

Building on the previous section, the study suggests that although TQM may serve as a mediating force, it will do so with a cultural foundation as the essential driver of both TQM and innovative management practices. As TQM ("as a system of shared values, beliefs, and practices") will reflect the cultural values of an organization, the integration of the social systems view with the technical systems view provides a complete vehicle for relational innovativeness. From a socio-technical systems view, that is, organizational culture (social subsystem) and TQM (technical subsystem) would need to harmonize to innovate sustainably, and ultimately, the above will reflect how culture originates and drives the rest of the model. Figure 1 shows the study conceptual model showing the relationships between the study variables.

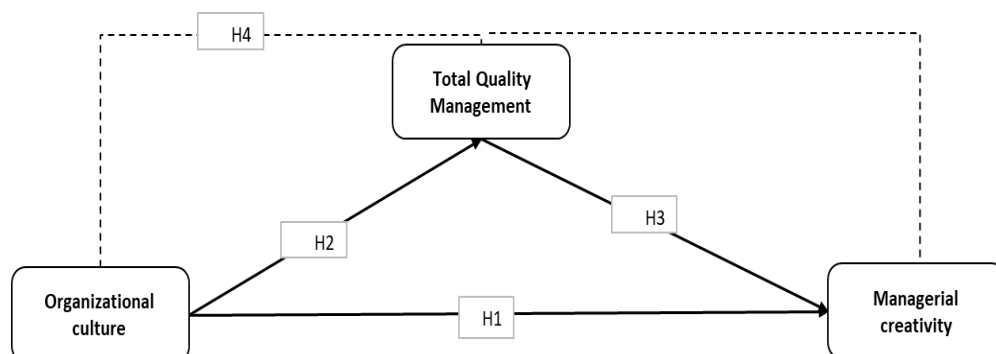


Figure 1. Study conceptual model.

3. RESEARCH METHODOLOGY

3.1. Research Design

This study employed a quantitative, cross-sectional, field-survey design to explore the effect of organizational culture on managerial creativity in insurance companies located in the capital, Sana'a, Yemen, by using Total Quality Management (TQM). This design was implemented to provide empirical inquiry to produce ascertainable evidence

of the hypothesized associations among the concepts in the study and generalizable findings within the target population (Creswell, 2014). This form of research relates to objectivity, statistical rigor, and dependability inferences of structural relationships among variables grounded on theory and observed data.

3.2. Population and Sample

The study population included all licensed and operating insurance companies in Sana'a, which form the basis of the Yemeni insurance industry. The focus was on managers, heads of departments, and supervisors since they play a significant role in executing decision-making, quality management, and creative problem-solving; therefore, they were more likely to provide a perspective specific to the research. With a reasonably small population size, a census was originally considered; however, due to access issues and since the purpose of the research was to achieve some degree of representation of managerial levels across the companies in the population, a proportionate stratified random sampling technique was used. A ($N = 350$) number of questionnaires were distributed, and ($N = 292$) valid responses were collected, corresponding to a valid response rate of 84.8%, which is acceptable in organizational research in developing country settings (Baruch & Holtom, 2008).

The appropriateness of the sample size ($N = 292$) was assessed using G*Power 3.1 software to ensure sufficient statistical power to detect medium effect sizes in the PLS-SEM model. For three predictors with an effect size (f^2) = 0.15, $\alpha = 0.05$, and a statistical power of 0.95, the minimum required sample was 119. The achieved sample size exceeded this minimum, providing adequate power and accommodating model complexity (Hair, Hult, Ringle, & Sarstedt, 2021).

3.3. Measurement Instruments

For this study, the researchers measured all variables of interest through validated multi-item scales. The researchers adapted and modified (from already published research) these scales to fit the insurance industry's context in Yemen. Responses were recorded using a 7-point Likert scale (1 = Strongly Disagree to 7 = Strongly Agree). The operationalization of the constructs measured in this study is provided in Table 1.

Table 1. Measurement of the study variables.

Construct	Dimensions	Description / Focus	Number of items	Key References
Total Quality Management (TQM)	Customer focus	Measures the organization's emphasis on understanding and meeting customer needs.	5	Bouranta, Psomas, Suárez-Barraza, and Jaca (2019); Yunis et al. (2013); Lepistö, Saunila, and Ukko (2024); Filippi, Gaio, and Zamarian (2024); Hariyani, Hariyani, Mishra, and Sharma (2024) and Fadhel and Alqurs (2025)
	Continuous improvement	Captures the organization's commitment to continuously improving processes and services.	5	
	Employee involvement	Reflects employee participation in problem-solving and decision-making related to quality management.	5	
	Top management commitment	Measures the support and commitment of senior management toward TQM initiatives.	5	
Organizational Culture	Organizational beliefs	Captures shared assumptions and beliefs that guide behavior within the organization.	5	Bogale and Debela (2024); Simovic, Lesjak, Perović, and Podovšovnik (2023); Pham, Vu, Phan, and
	Organizational expectations	Reflects expected behaviors and performance standards within the organization.	5	

Construct	Dimensions	Description / Focus	Number of items	Key References
	Organizational norms	Captures customary practices and unwritten rules guiding day-to-day actions.	5	Nguyen (2024) and Fernandes, Pereira, and Wiedenhöft (2023)
	Organizational values	Measures core values that shape organizational priorities and decisions.	5	
Managerial Creativity	Fluency	Ability to generate multiple ideas and solutions for organizational challenges.	5	Scratchley and Hakstian (2001); Ul Haq and Pifarré (2023); Grajzel, Acar, Dumas, Organisciak, and Berthiaume (2023) and Said-Metwaly, Van den Noortgate, and Kyndt (2017)
	Flexibility	Capacity to apply diverse approaches and perspectives to problem-solving.	5	
	Originality	Ability to produce novel and innovative ideas or solutions.	5	
	Problem sensitivity	Awareness and identification of emerging problems or opportunities in organizational processes.	5	

All measurement items were pre-tested with a panel of five academic experts and ten industry practitioners to provide a measure of content validity, clarity of language, and contextual appropriateness. Based on the feedback collected from the pre-test, we further confirmed that the measurement scales were suitably crafted to measure the constructs in the Yemeni insurance context.

3.4. Data Collection Procedure

Data were collected using a self-administered survey that was made available as either a printed questionnaire or an online survey (electronic survey) between March and June 2024. Prior to data collection, formal permission for the study was sought from the management team of all insurance companies involved in this research. The researchers assured respondents that their responses were anonymous and confidential to mitigate social desirability bias and encourage honesty in their responses. Surveys were voluntary, and no identifying information was collected. Additionally, several technical remedies were used to decrease common method variance (Podsakoff, MacKenzie, & Podsakoff, 2012) in the data collection process, such as randomizing questions, employing different scale anchors, and providing clear verbal instructions stating that there were neither right nor wrong answers on any question.

3.5. Data Analysis Techniques

The data analysis was conducted by employing Partial Least Squares Structural Equation Modelling (PLS-SEM) with SmartPLS 4.0, given that this method is recognized as the appropriate method for testing complex models, with small sample sizes, and normal distribution of data (Hair et al., 2021). PLS-SEM is also a modern statistical method of data analysis, which helps in assessing the measurement model and structural model at once. In addition, it is suitable for examining the relationships between OC, TQM, and MC. The analysis was done in two key phases, which include the measurement model assessment and the structural model assessment according to Hair, Risher, Sarstedt, and Ringle (2019). The first phase of the analysis involves assessing the measurement reliability and construct validity of measurement scales. Cronbach's alpha (CA) and Composite Reliability (CR) were used to analyze three measurement scales, confirming their reliability and internal consistency. Average Variance Extracted (AVE) calculations on each scale verified convergent validity, indicating the assessment's convergent reliability. Additionally, calculating the Heterotrait-Monotrait (HTMT) ratio provided evidence that different constructs within the same measurement are empirically distinct from each other (Henseler, Ringle, & Sarstedt, 2015). The next phase was to obtain values for the path coefficients (β), t-value and p-value for each of the paths as shown in Figure 2 using

bootstrapping with 5,000 resamples in order to determine the significance of those paths (Hair et al., 2019). Additionally, R^2 was used to evaluate the rate of variance explained by the model, f^2 was used to evaluate the size of effects, and Q^2 was used to evaluate the predictive power of the model. Finally, mediation analysis was performed using the bootstrapping approach of Hair et al. (2019) to evaluate the indirect effect of TQM on how OC relates to MC. For the purpose of minimizing response bias, responses were collected from multiple companies and managerial levels over a three-month period. Furthermore, though the response rate was over 80%, an early-late respondent analysis was conducted to assess potential nonresponse bias following the approach of Armstrong and Overton (1977). Independent sample t-tests results showed no differences between the two groups in the main constructs of the study, which confirmed the absence of non-response bias. Since the data was collected using the same instrument, from the same respondents at the same point in time, it was important to check for CMV issues. Therefore, the researchers conducted several procedural and statistical remedies. Procedurally, some actions were taken, such as question order randomization, reverse-coded items, and assurances of anonymity to reduce respondents' evaluation anxiety. At the statistical level, statistical tests such as Harman's single-factor test showed that the first unrotated factor accounted for only 32.7% of the total variance, well below the 50% threshold, indicating that CMV was not a significant concern. To support that, another test, the full collinearity assessment, was also performed (Kock, 2015). The findings of VIF test produced values below 3.3 for all constructs. This further confirmed that the CMV is not present in the study.

3.6. Ethical Considerations

The ethical considerations of academic research were thoroughly adhered to. Approval for the study was obtained from the Research Ethics Committee at Sana'a University. All participants gave their informed consent. Data collection and analysis ensured both confidentiality and anonymity. Data were only used for academic purposes.

Table 2. Reliability, internal consistency, and convergent validity.

Construct	Dimension	Indicator	Outer loading	Cronbach's alpha	CR	AVE
Managerial creativity	Fluency	INFLU1	0.825	0.888	0.892	0.690
		INFLU2	0.866			
		INFLU3	0.820			
		INFLU4	0.821			
		INFLU5	0.819			
	Flexibility	INNRES1	0.736	0.879	0.882	0.676
		INNRES2	0.853			
		INNRES3	0.865			
		INNRES4	0.839			
		INNRES5	0.811			
	Originality	INOR1	0.717	0.894	0.897	0.706
		INOR2	0.895			
		INOR3	0.886			
		INOR4	0.834			
		INOR5	0.857			
	Problem sensitivity	INOSEN1	0.824	0.898	0.903	0.708
		INOSEN2	0.851			
		INOSEN3	0.817			
		INOSEN4	0.861			
		INOSEN5	0.853			
Organizational culture	Organizational beliefs	OBEL1	0.681	0.814	0.823	0.574
		OBEL2	0.714			
		OBEL3	0.774			
		OBEL4	0.800			
		OBEL5	0.812			
	Organizational expectations	OEX1	0.864	0.892	0.911	0.710
		OEX2	0.912			
		OEX3	0.927			
		OEX4	0.863			
		OEX5	0.608			
	Organizational norms	ONOR1	0.788	0.848	0.853	0.621

Construct	Dimension	Indicator	Outer loading	Cronbach's alpha	CR	AVE
	Organizational values	ONOR2	0.741			
		ONOR3	0.799			
		ONOR4	0.828			
		ONOR5	0.782			
		OVA1	0.736	0.862	0.886	0.642
		OVA2	0.798			
		OVA3	0.783			
		OVA4	0.830			
Total quality management	Customer focus	OVA5	0.855			
		QCUF1	0.866	0.933	0.935	0.789
		QCUF2	0.913			
		QCUF3	0.918			
		QCUF4	0.911			
	Continuous improvement	QCUF5	0.830			
		QIMPR1	0.893	0.948	0.950	0.829
		QIMPR2	0.917			
		QIMPR3	0.900			
		QIMPR4	0.933			
	Employee involvement	QIMPR5	0.908			
		QSTSH1	0.877	0.945	0.947	0.821
		QSTSH2	0.943			
		QSTSH3	0.919			
		QSTSH4	0.914			
	Top management commitment	QSTSH5	0.875			
		QTMCI	0.871	0.946	0.946	0.822
		QTMCI2	0.914			
		QTMCI3	0.933			
		QTMCI4	0.891			
		QTMCI5	0.922			

4. RESULTS

4.1. Measurement Model Evaluation

4.1.1. Reliability, Internal Consistency, and Convergent Validity

Provided in Table 2 is the assessment of the reflective measurement model for reliability and validity based on Hair et al. (2021). All constructs passed the assessment with acceptable levels of psychometric properties. The values of the indicator loadings for all constructs surpassed the minimum standard of higher than 0.70 (0.681–0.943), with one indicator (OEX5=0.608) falling below the threshold but justifiable theoretically. Although OEX5 is slightly below the threshold, Hair et al. (2019) suggests that loadings as low as 0.400 are acceptable if the AVE value across all constructs exceeds 0.500. Cronbach's alpha values for the multi-item constructs ranged from 0.814 to 0.948, and composite reliability was well above the standard of greater than 0.70 (0.823 to 0.950). The range of Cronbach's alpha and composite reliability demonstrates excellent internal consistency across all constructs. The averages of variance extracted (AVE) ranged from 0.574 to 0.829, exceeding the adequate benchmark of 0.50, which also demonstrates convergent validity. In conclusion, all constructs, Organizational Culture, Total Quality Management, and Managerial Creativity exhibit high reliability and validity, confirming that the measurement model is appropriate for further structural testing.

Table 3. Discriminant validity (HTMT) criterion.

	1	2	3	4	5	6	7	8	9	10	11	12
1. Fluency	—											
2. Flexibility	0.883	—										
3. Originality	0.733	0.748	—									
4. Problem sensitivity	0.809	0.824	0.732	—								
5. Beliefs	0.664	0.632	0.622	0.544	—							
6. Expectations	0.621	0.594	0.712	0.552	0.774	—						
7. Norms	0.73	0.747	0.756	0.662	0.619	0.608	—					
8. Values	0.593	0.624	0.639	0.629	0.651	0.692	0.626	—				
9. Customer focus	0.684	0.669	0.689	0.619	0.593	0.669	0.657	0.525	—			
10. Continuous improvement	0.654	0.636	0.729	0.617	0.554	0.778	0.623	0.537	0.835	—		
11. Employee involvement	0.657	0.626	0.709	0.616	0.558	0.795	0.53	0.528	0.765	0.85	—	
12. Top management commitment	0.621	0.632	0.702	0.529	0.559	0.791	0.575	0.494	0.787	0.894	0.808	—

4.1.2. Discriminant Validity (HTMT) Criterion

Table 3 includes an evaluation of the discriminant validity of the constructs, using the Heterotrait-Monotrait (HTMT) ratio of correlations criterion proposed by Henseler et al. (2015). Table 3 shows the HTMT values between all latent constructs. The HTMT values were all less than the more conventional cutoff of 0.85 and well below the more liberal cutoff of 0.90, proving that each construct is empirically different from the others. In summary, the constructs of Organizational Culture, Total Quality Management, and Managerial Creativity each measure different and exclusive facets of the conceptual framework and do not excessively overlap. Therefore, the measurement model can be shown to have strong discriminant validity, and the construct structure can be considered acceptable for structural model analysis.

Table 4. Coefficient of Determination (R^2), Effect Size (f^2), and Predictive Relevance (Q^2).

Dependent variable	R^2	Q^2	Independent Variable	f^2 (Effect Size)
Managerial creativity	0.662	0.497	Organizational Culture	0.315
			Total Quality Management	0.139
Total quality management	0.603	0.496	—	—

4.2. Structural Model Assessment

The structural model assessment was designed to evaluate explanatory power, effect sizes, and predictive relevance regarding the model as displayed in Table 4. The findings presented in Table 4 indicate that the coefficient of determination (R^2) for Managerial Creativity was 0.662, explaining that Organizational Culture and Total Quality Management accounted for 66.2% of the variance in managerial creativity, indicating considerable explanatory power (Hair et al., 2021). Similarly, R^2 for Total Quality Management was 0.603, indicating Organizational Culture explains 60.3% of the variance in Total Quality Management, which is again substantial. Regarding effect size (f^2), Organizational Culture exhibited a large effect on Managerial Creativity ($f^2 = 0.315$) and a moderate effect on Managerial Creativity from Total Quality Management ($f^2 = 0.139$). According to Cohen (1988), this is considered moderate to high. The predictive relevance (Q^2) values based on the blindfolding procedure were 0.497 for Managerial Creativity and 0.496 for Total Quality Management, showing the model's predictive relevance was above zero, reflecting strong predictive relevance for both dependent variables (Hair et al., 2021). In summary, these results demonstrate adequate explanatory and predictive capabilities of the structural model, supporting its suitability for hypothesis testing.

4.3. Hypotheses Testing (Bootstrapping)

The key findings from the PLS-SEM analysis, testing the hypothesized relationships, are summarized as follows:

- Organizational Culture (OC) demonstrated a strong, significant positive effect on Managerial Creativity (MC) ($\beta = 0.784$, $p < 0.001$), supporting H1.
- Organizational Culture (OC) also had a strong, significant positive effect on Total Quality Management (TQM) implementation ($\beta = 0.776$, $p < 0.001$), supporting H2.
- Total Quality Management (TQM) had a significant positive effect on Managerial Creativity (MC) ($\beta = 0.344$, $p < 0.001$), supporting H3.
- TQM partially mediated the relationship between OC and MC, with a significant indirect effect ($\beta = 0.267$, $p < 0.001$), supporting H4.
- The structural model exhibited strong explanatory power, explaining 60.3% of the variance in TQM and 66.2% of the variance in Managerial Creativity.

Table 5. Hypothesis testing (bootstrapping).

Path	β	SE	t	p
Organizational Culture $\rightarrow$ Managerial Creativity	0.784	0.031	25.276	0.000
Organizational Culture $\rightarrow$ Total Quality Management	0.776	0.025	30.906	0.000
Total Quality Management $\rightarrow$ Managerial Creativity	0.344	0.084	4.108	0.000
Organizational Culture $\rightarrow$ Total Quality Management $\rightarrow$ Managerial Creativity (Indirect Effect)	0.267	0.066	4.079	0.000

Table 5 summarizes the results of the hypothesis tests conducted through bootstrapping. All relationships were statistically significant ($p < .001$), providing strong evidence supporting the proposed model. The direct path between Organizational Culture and Managerial Creativity was positive and significant ($\beta = 0.784$, $t = 25.276$, $p = 0.000$), indicating that a supportive and adaptable culture positively contributes to Managerial Creativity. Organizational Culture also had a strong, positive impact on Total Quality Management ($\beta = 0.776$, $t = 30.906$, $p = 0.000$), suggesting that a supportive organizational culture encouraging teamwork, continuous development, and shared beliefs facilitates the successful adoption of Total Quality Management. Total Quality Management also had a statistically significant positive effect on Managerial Creativity ($\beta = 0.344$, $t = 4.108$, $p = 0.000$), indicating that principles such as customer focus, employee involvement, and continuous improvement enhance Managerial Creativity. Figure 2 displays the total effects, illustrating the results of H1, H2, and H3.

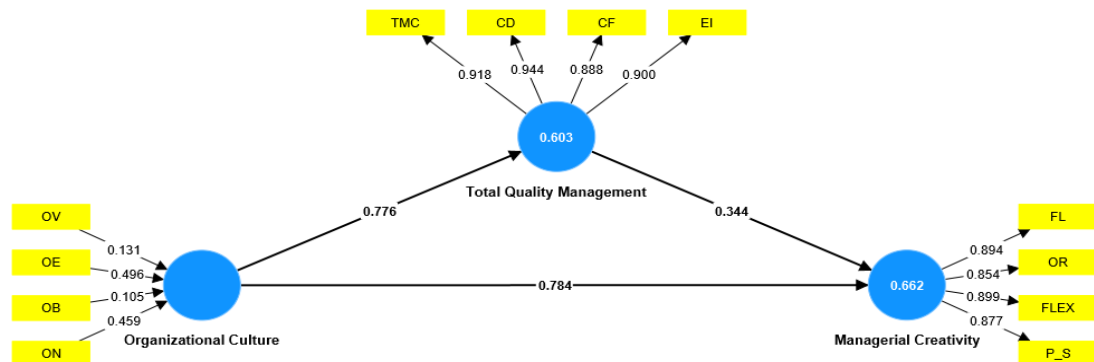


Figure 2. Total effect (H1, H2, H3).

Note: OV = Organizational Values; OE = Organizational Expectations; OB = Organizational Beliefs; ON = Organizational Norms; TMC = Top Management Commitment; CD = Continuous Development; CF = Customer Focus; EI = Employee Involvement; FL = Fluency; OR = Originality; FLEX = Flexibility; P_S = Problem sensitivity.

Furthermore, the indirect effect of Organizational Culture on Managerial Creativity through Total Quality Management was also found to be significant ($\beta = 0.267$, $t = 4.079$, $p = 0.000$), suggesting partial mediation. This indicates that TQM serves as a complementary process that allows organizational culture to positively influence managerial creativity. Figure 3 shows the results of mediation H4.

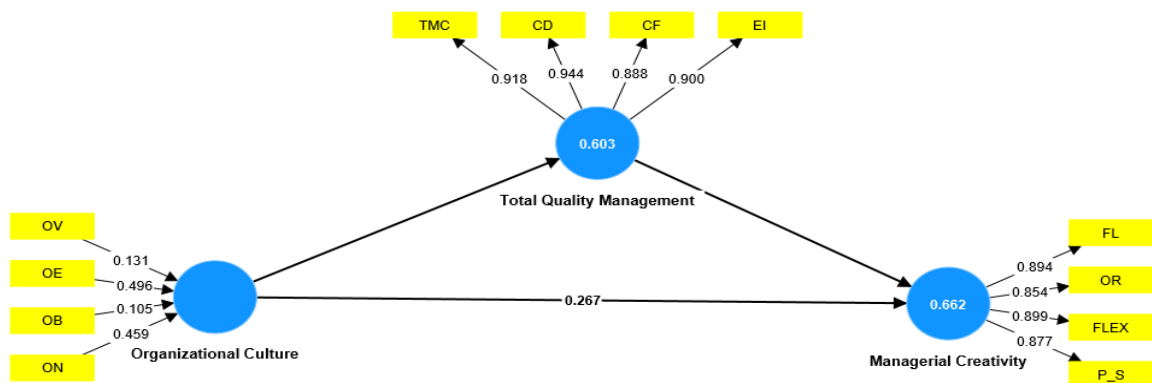


Figure 3. Mediation analysis (H4).

Note: OV = Organizational Values; OE = Organizational Expectations; OB = Organizational Beliefs; ON = Organizational Norms; TMC = Top Management Commitment; CD = Continuous Development; CF = Customer Focus; EI = Employee Involvement; FL = Fluency; OR = Originality; FLEX = Flexibility; P_S = Problem sensitivity.

5. DISCUSSION

This research investigated the impact of organizational culture on managerial creativity, considering both direct and indirect effects through the mediating variable of Total Quality Management (TQM) in the context of insurance companies in Sana'a, Yemen. Data analyzed using PLS-SEM, the findings suggest that each of the proposed associations was statistically significant, establishing that organizational culture and TQM explained a significant proportion of variance in managerial creativity. In the following discussion, we interpret our findings in relation to the wider theoretical and empirical literature and consider the implications of this for theory, research, and practice.

5.1. Organizational Culture as a Direct Driver of Managerial Creativity

The study findings revealed that OC has a strong and robust impact on MC, indicating that the stronger the OC values, beliefs, expectations, and norms are, the more creative and innovative the managers become. From a theoretical standpoint, these findings reinforce RBV theory, which posits that OC is an intangible asset and a source in firms that boosts management creativity (Denison & Mishra, 1995; Mailani et al., 2024).

The OC norms, beliefs, expectations, and values create psychological safety in the work environment, which helps push managers to be innovative and creative in their work (Lateef, 2020). Within this framework, culture acts as a cognitive and emotional pusher that helps managers challenge routines and create useful ideas (Zhang et al., 2023). In addition, cultures promoting openness, collaboration, and a commitment to lifelong learning create some intrinsic motivation, which are essential preconditions for creativity in management (Ding & Hong, 2025; Hassan et al., 2019).

The results of this research correspond to the empirical evidence found by Martins and Terblanche (2003) that supportive organizational culture was the strongest determinant of organizational innovation, and with Zhang et al. (2023), whose results indicate that collaboration and autonomy-oriented cultural characteristics positively influenced creative management practices. Additionally, according to Miron-Spektor and Paletz (2024), all the ambidextrous cultures balancing exploratory and exploitative elements promote leader creativity, providing additional support to an already established pattern of findings.

Contextually, in situations where there is not an established or consistent level of formal organizational structure, culture can serve as an increasingly important enabler for both experimentation and the resolution of problems by managers. Consequently, creating a culture that supports and incentivizes employees to take the initiative to carry out their job responsibilities and take risks may be the most effective way to enhance a manager's ability to be creative.

5.2. Organizational Culture as a Foundation for TQM Implementation

The study findings demonstrated a significant correlation between the representative entity's corporate culture and its ability to successfully apply Total Quality Management (TQM) in business operations and processes ($\beta = 0.776$, $p < 0.001$). This finding implies that the greater the degree of an organization represents a strong corporate culture that embraces TQM, the more it is likely to integrate and transfer the principles of TQM into day-to-day operations. In addition to aiding with the success of implementing TQM, the corporate culture is also representative of the type of methodology an organization uses to classify, evaluate, and respond to the implementation of TQM.

The finding is in accordance with socio-technical systems theory (Baxter & Sommerville, 2011), which proposes that sustained quality improvement relies on the goals of social factors (values, norms, collaboration) aligning with technical systems (TQM tools and procedures). The finding also supports the resource-based view (Barney, 1991; Denison & Mishra, 1995), where culture is considered a rare and inimitable resource that adds to the effectiveness of quality initiatives through the motivations and engagement of members, communication, and collaboration on problem-solving.

A culture that promotes participation and is oriented towards learning supports Total Quality Management (TQM) through generating a sense of psychological ownership and mutual accountability (Fundin, Bäckström,

Ingelsson, Snyder, & Westin, 2025). In a participative, learning-oriented culture, employees engage with quality goals as a shared value as opposed to an externally imposed requirement, which prompts proactive improvement behavior (Marpaung, 2024). Alternatively, a culture with a strong hierarchical or control-oriented dimension creates an environment where information does not flow naturally, feedback is not part of the culture, and private, or even public value is about compliance, disabling and breaking the cycle of continuous learning that is key to TQM system success (Lee & Ding, 2023). This aligns with Coelho et al. (2022), who found that cultural openness enhances the effectiveness of quality management systems, and Palumbo and Douglas (2024), who showed that shared responsibility and communication promote sustainable TQM practices.

These results go in line with the previous research of Prajogo and McDermott (2005); Baird, Jia Hu, and Reeve (2011), and Sadikoglu and Zehir (2010), who note that quality initiatives are most successful within cultural settings defined by shared responsibilities, teamwork, and trust. In these situations, Employees demonstrate increased intrinsic motivation, resulting in employee behaviors aimed toward producing high-quality outcomes rather than simply following orders from management (Eniola, Olorunleke, Akintimehin, Ojeka, & Oyetunji, 2019; Morales-Huamán et al., 2023).

The context of the evidence is also important. In developing and crisis-prone economies, the implementation of quality management often fails due to the rigidity of organizational culture and poor employee empowerment (Almaamari et al., 2025). Thus, the findings made in this study indicate that establishing a participatory culture is a key to successfully instilling continuous improvement and customer focus within service organizations. The culture, therefore acts as both a precursor and catalyst for successful TQM implementation, converting it from a technical tool to a management philosophy that is value-based (Dejanović & Nikolić, 2023).

5.3. TQM as a Catalyst for Managerial Creativity

The findings of the study confirmed that TQM has a significant role in boosting MC ($\beta = 0.344$, $p < 0.001$). This indicates that structured quality practices can enhance rather than constrain creativity. This challenges earlier critiques that TQM's standardization hinders creativity and make organizations narrow-minded (Benner & Tushman, 2003; Martinez-Costa & Martínez-Lorente, 2008). In addition, this finding is in line with more recent findings that emphasize “structured creativity” within disciplined quality environments (Aichouni et al., 2024; Khan, Smith, & Lee, 2024).

According to Lasrado (2019), “TQM contributes to creativity through several pathways”. Customer focus encourages innovative service delivery (Marco, 2025), and continuous improvement (Kaizen) encourages an experimentation mindset (Jadhav, 2025; Silva, 2025). Employee involvement fosters idea generation and cross-functional collaboration, and top management commitment provides the necessary support for risk-taking (Chen et al., 2023; Dodgson, Gann, & Salter, 2008; Ghani, Hyder, Yoo, & Han, 2023; Kim et al., 2012). Collectively, these dimensions create a climate in which creativity becomes an institutionalized practice rather than an individual initiative. In service industries, TQM provides managers with a wide variety of techniques and tools, enabling them to gain greater freedom of thought and ability to solve new problems (Bobe & Teklay, 2025; Issah et al., 2024). By creating opportunities for managers to give feedback to each other, work together, and share ideas, a continuous improvement cycle can be established where managers can refine their work processes and have the chance to utilize others' ideas to create new solutions in day-to-day decision-making (Wassan, Memon, Mari, & Kalwar, 2022). In this way, TQM should not be perceived as a simple control mechanism; rather, TQM should be seen as an opportunity for managers to combine their efficiency with their creativity (Jadhav, 2025).

5.4. The Mediating Role of TQM

The results of this study indicated that Total Quality Management (TQM) mediates the relationship between Organizational Culture (OC) and Management Creativity (MC) with a beta coefficient of .267, p-value of <.001.

Although Organizational Culture is the source of the fundamental values for creativity, it is TQM that transforms those values into systematic, replicable procedures to enhance creativity and innovation for the organizations. Subsequently, these findings support the position advanced by Prajogo and McDermott (2005) and Zu et al. (2010) that TQM is a method for translating organizational culture's normative, value-based expectations into management systems that provide a sustainable basis for creativity and innovation.

This mediating mechanism exemplifies the socio-technical integration proposed by Baxter and Sommerville (2011), where TQM is the technical part that allows for the conversion of the cultural forms of potential (the social part) into quantifiable creative performance. There is also a growing body of literature supporting this view and demonstrating that by using cultural elements to support an organization's TQM practices, organizations can create an environment that fosters creativity and builds the ability of an organization to respond quickly to change (Isnaini et al., 2021; Salzmann-Erikson et al., 2024).

The research concludes that businesses cannot depend solely on cultural changes to promote their creative output. If organizations lack technical methods enabling employees to focus their creative thoughts practically, cultural changes will likely go unrealized; therefore, TQM can serve as a method of translating a desire for a creative workforce into a working system. This system allows employees to be innovative while providing the company with the ability to remain competitive and improve its service through creativity.

5.5. Theoretical and Contextual Implications

This research provided theory-based contributions to both the STS (socio-technical systems) and RBV (Resource-Based View) frameworks. From the STS perspective, TQM (Total Quality Management) is an empirical manifestation of the technical component of STS. Specifically, it is the technical subsystem through which the social subsystem (i.e., organizational culture) creates the foundation for measuring and building upon creative potential. From the RBV perspective, organizational culture and TQM are not merely separate entity resources; instead, they are complementary, forming a collection of "intangible" assets that support the development of capabilities that will enable innovation as a source of sustained competitive advantage even when there are limitations to the availability of commercial resources available in the market.

Contextually, this study transforms the discussion from just documenting fragile states' challenges to establishing an empirically evidenced model for acting in fragile contexts. It shows that socio-technical alignment and resource-based strategy are not merely theories for stable corporations from the West but can be used for developing countries, even those suffering from the lack of adequate resources and instability. It has provided proof of their strength in a completely uncertain environment, as evidenced by the case of Yemen, offering a shine of hope and a practical guide for thousands of organizations attempting to innovate in a difficult environment around the world.

Theoretically, this study makes specific contributions to socio-technical systems (STS) theory and the Resource-Based View (RBV). For STS theory, it empirically demonstrates that TQM functions as the technical subsystem that operationalizes the social subsystem (organizational culture), transforming cultural potential into a measurable, dynamic capability for innovation. For the RBV, it identifies organizational culture and TQM not as isolated assets but as complementary intangible resources that collectively build a dynamic capability for structured creativity and sustained competitive advantage, even in resource-scarce contexts.

5.6. Practical Implications

From a managerial perspective, the research provided several recommendations to consider. One of these is that there should be support, improvement, and encouragement of fostering a participative culture, instilling trust, which in turn supports managerial creativity along with TQM principles. Additionally, there must be institutionalization of TQM principles, which can provide a structural platform for creative problem-solving behaviors among managers.

Third, the alignment of cultural values with TQM systems produces creative behaviors at the managerial level, which in turn supports innovations at the organizational level.

Leaders and policymakers must leverage these messages to change their strategy, moving from saving the world externally to helping engineer internal change. While Yemen is very distinct from other developing countries experiencing similar difficulties (and needs to develop its own solution to its unique situation), many of the strategies being utilized by Yemen's government could benefit many developing countries. The message is simple - do not wait for the economy to salvage itself. Instead, create a culture where your people are empowered and put in place systems that influence their creative capacity. An internal focus is the most reliable foundation to endure external storms and achieve sustainable competitive advantage.

5.7. Limitations and Future Research Directions

Despite the value and contributions of the research, there are some limitations to note. First, due to the cross-sectional nature of the research, we cannot determine causation from the relationship between organizational culture, TQM, and managerial creativity; therefore, longitudinal research designs could be beneficial both to determine causal relationships and to observe changing impacts of cultural and quality management practices on creativity over the longer term. Second, the research was conducted only in insurance companies in Sana'a, Yemen, and therefore results may only be true for the insurance industry; other service- or manufacturing-based industries could be utilized for greater external validity.

Third, the study utilized self-reported survey data, which, while there are potential ways to account for common method variance, has the potential to be subject to common method bias. Future considerations could employ multi-source data such as managerial performance data, customer feedback, and peer evaluations to triangulate the results. Fourth, while TQM emerged as a potential mediator, as described previously, TQM's association with other organizational factors, such as leadership style, knowledge management, or organizational learning, might also have significant impacts on managerial creativity and be combined for future studies. Fifth, adding several potential moderating variables (i.e., organizational size, market turbulence, or readiness for digital transformation) would further enhance the understanding of the contexts in which culture and TQM foster creativity. These paths would further improve the theoretical contributions and practical applications of organizational culture and TQM for advancing innovation in managerial settings.

6. CONCLUSION

The objective of this study was to analyze the influence of organizational culture on the creativity of managerial personnel within the Insurance Industry of Yemen, and also to demonstrate how TQM mediates this relationship. To accomplish this, our research was informed by socio-technical systems theory, the Resource-Based View, and theories regarding organizational culture. The findings support the argument that creativity is not an isolated attribute belonging solely to managers nor necessarily the influence of their individual genius, but rather it emerges from the alignment of organizational culture with standardized and structured quality practices. Both authors have read and approved the final edition of the paper.

According to empirical data, there is a high correlation between an organization's culture and the degree to which it implements total quality management (TQM) and utilizes creativity among its managerial staff. Additionally, TQM positively impacts a manager's ability to innovate and functions as a partial mediator between organizational culture and managerial innovation. These findings indicate that a participative and learning-oriented organizational culture provides the social conditions necessary to foster creativity, whereas TQM operationalizes these values into routine practices that help sustain innovation. The combination of TQM and cultural values accounts for over 66% of the variance in managerial innovation, indicating that this combined model is an extremely good indicator of managerial creativity.

In a fragile, highly constrained environment such as Yemen, the research provides clear and useful examples of how organizations may develop innovative outcomes by developing strong internal alignment between organizational cultural value systems and quality-related systems. An organization can create an environment where innovation is produced, rather than relying on external relationships with resource providers (e.g., external funding sources, supporting regulatory environments). A successful environment may, therefore, be achieved through establishing shared values, developing collaborative work norms, and creating processes for continuous improvement. Innovative, effective management is created through developing a strong foundation of both internal and external trust.

To summarize, this research expands our theoretical understanding of socio-technical alignment, contributes empirical knowledge about organizational culture, total quality management (TQM), and managerial creativity, and offers practical advice to leaders aiming to create innovative, adaptive organizations operating under difficult circumstances. Future studies can broaden the findings by studying different industries, using longitudinal designs, and incorporating other potential mediators and boundary conditions that may enhance our understanding of how to foster an environment conducive to managerial creativity.

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Transparency: The authors state that the manuscript is honest, truthful, and transparent, that no key aspects of the investigation have been omitted, and that any differences from the study as planned have been clarified. This study followed all writing ethics.

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REFERENCES

- Aichouni, A. B. E., Silva, C., & Ferreira, L. M. D. F. (2024). A systematic literature review of the integration of total quality management and industry 4.0: Enhancing sustainability performance through dynamic capabilities. *Sustainability*, 16(20), 9108. <https://doi.org/10.3390/su16209108>
- Almaamari, Q. A., Al-Mekhlafi, A.-B. A., Kanwal, N., & Dawwas, M. I. F. (2025). Organizational culture role in linking TQM practices to performance in the Yemen oil and gas sector. *Cogent Business & Management*, 12(1), 2492842. <https://doi.org/10.1080/23311975.2025.2492842>
- Amabile, T. M. (1997). Motivating creativity in organizations: On doing what you love and loving what you do. *California Management Review*, 40(1), 39-58. <https://doi.org/10.2307/41165921>
- Amabile, T. M. (2019). *Creativity in context: Update to the social psychology of creativity*. UK: Routledge.
- Armstrong, J. S., & Overton, T. S. (1977). Estimating nonresponse bias in mail surveys. *Journal of Marketing Research*, 14(3), 396-402. <https://doi.org/10.1177/002224377701400320>
- Baird, K., Jia Hu, K., & Reeve, R. (2011). The relationships between organizational culture, total quality management practices and operational performance. *International Journal of Operations & Production Management*, 31(7), 789-814. <https://doi.org/10.1108/01443571111144850>
- Barney, J. (1991). Firm resources and sustained competitive advantage. *Journal of Management*, 17(1), 99-120. <https://doi.org/10.1177/014920639101700108>
- Baruch, Y., & Holtom, B. C. (2008). Survey response rate levels and trends in organizational research. *Human Relations*, 61(8), 1139-1160. <https://doi.org/10.1177/0018726708094863>
- Basadur, M., & Robinson, S. (1993). The new creative thinking skills needed for total quality management to become fact, not just philosophy. *American Behavioral Scientist*, 37(1), 121-138. <https://doi.org/10.1177/0002764293037001013>

- Baxter, G., & Sommerville, I. (2011). Socio-technical systems: From design methods to systems engineering. *Interacting with Computers*, 23(1), 4-17. <https://doi.org/10.1016/j.intcom.2010.07.003>
- Benner, M. J., & Tushman, M. L. (2003). Exploitation, exploration, and process management: The productivity dilemma revisited. *The Academy of Management Review*, 28(2), 238-256. <https://doi.org/10.5465/AMR.2003.9416096>
- Bisho, A. H. A. I., & Sam, M. F. B. M. (2022). Total quality management integrated strategy: Its implication to organizational success. *Proceedings on Engineering Sciences*, 4(3), 371-378. <https://doi.org/10.24874/PES04.03.014>
- Bobé, B. J., & Teklay, B. (2025). Integrating total quality management and management control systems: A systematic literature review and proposed integrative framework. *Journal of Accounting & Organizational Change*, 21(7), 56-89. <https://doi.org/10.1108/JAOC-10-2024-0337>
- Bogale, A. T., & Debela, K. L. (2024). Organizational culture: A systematic review. *Cogent Business & Management*, 11(1), 2340129. <https://doi.org/10.1080/23311975.2024.2340129>
- Bouranta, N., Psomas, E., Suárez-Barraza, M. F., & Jaca, C. (2019). The key factors of total quality management in the service sector: A cross-cultural study. *Benchmarking: An International Journal*, 26(3), 893-921. <https://doi.org/10.1108/BIJ-09-2017-0240>
- Chen, H., Amoako, T., Quansah, C. E., Danso, S. A., & Jidda, D. J. (2023). Assessment of the impact of management commitment and supply chain integration on SMEs' innovation performance: Moderation role of government support. *Heliyon*, 9(5), e15914. <https://doi.org/10.1016/j.heliyon.2023.e15914>
- Coelho, C., Mojtahedi, M., Kabirifar, K., & Yazdani, M. (2022). Influence of organisational culture on total quality management implementation in the Australian construction industry. *Buildings*, 12(4), 496. <https://doi.org/10.3390/buildings12040496>
- Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.). United States: Lawrence Erlbaum Associates.
- Creswell, J. W. (2014). *Research design: Qualitative, quantitative, and mixed methods approaches* (4th ed.). Thousand Oaks, CA: SAGE.
- De Barros, R., Resende, L. M., & Pontes, J. (2025). Exploring creativity and innovation in organizational contexts: A systematic review and bibliometric analysis of key models and emerging opportunities. *Journal of Open Innovation: Technology, Market, and Complexity*, 11(2), 100526. <https://doi.org/10.1016/j.joitmc.2025.100526>
- Dejanović, A., & Nikolić, J. L. (2023). Organizational culture as a lever of successful quality management. *Ekonomika*, 69(3), 73-88. <https://doi.org/10.5937/EKONOMIKA2303073D>
- Denison, D. R. (1990). *Corporate culture and organizational effectiveness*. New York: Wiley.
- Denison, D. R., & Mishra, A. K. (1995). Toward a theory of organizational culture and effectiveness. *Organization Science*, 6(2), 204-223. <https://doi.org/10.1287/orsc.6.2.204>
- Dimitrantzou, C., Psomas, E., Bouranta, N., & Kafetzopoulos, D. (2022). The role of organisational culture in total quality management adoption and cost of quality. *Total Quality Management & Business Excellence*, 33(15-16), 1718-1736. <https://doi.org/10.1080/14783363.2021.1997143>
- Ding, J., & Hong, G. (2025). Fostering loyalty and creativity: How organizational culture shapes employee commitment and innovation in South Korean firms. *Behavioral Sciences*, 15(4), 529. <https://doi.org/10.3390/bs15040529>
- Dodgson, M., Gann, D. M., & Salter, A. (2008). *The management of technological innovation: Strategy and practice*. Oxford, England: Oxford University Press.
- El Manzani, Y., Sidmou, M. L., & Cegarra, J.-J. (2019). Does ISO 9001 quality management system support product innovation? An analysis from the sociotechnical systems theory. *International Journal of Quality & Reliability Management*, 36(6), 951-982. <https://doi.org/10.1108/IJQRM-09-2017-0174>
- Eniola, A. A., Olorunleke, G. K., Akintimehin, O. O., Ojeka, J. D., & Oyetunji, B. (2019). The impact of organizational culture on total quality management in SMEs in Nigeria. *Heliyon*, 5(8), e02293. <https://doi.org/10.1016/j.heliyon.2019.e02293>
- Fadhel, R., & Alqurs, A. (2025). Enhancing occupational health and safety through strategic leadership: The mediating role of total quality management in Hodeida hospitals, Yemen. *Risk Management and Healthcare Policy*, 18, 823-842. <https://doi.org/10.2147/RMHP.S506296>
- Fernandes, P., Pereira, R., & Wiedenhöft, G. (2023). Organizational culture and the individuals' discretionary behaviors at work: A cross-cultural analysis. *Frontiers in Sociology*, 8, 1190488. <https://doi.org/10.3389/fsoc.2023.1190488>

- Filippi, E., Gaio, L., & Zamarian, M. (2024). Leveraging the hard and soft elements of TQM: The interplay of benchmarking and improvement processes. *The TQM Journal*, 36(3), 702–719. <https://doi.org/10.1108/TQM-01-2022-0045>
- Fundin, A., Bäckström, I., Ingelsson, P., Snyder, K., & Westin, L. (2025). Positions and transformations on the quality culture continuum motivated by organisational values. *Journal of Organizational Change Management*, 38(8), 176–203. <https://doi.org/10.1108/JOCM-12-2024-0816>
- Ganesan, R. (2025). Health insurance shines in turbulent Yemeni market. *Middle East Insurance Review*. Retrieved from <https://www.meinsurancereview.com/Magazine/ReadMagazineArticle?aid=48993>
- Ghani, B., Hyder, S. I., Yoo, S., & Han, H. (2023). Does employee engagement promote innovation? The facilitators of innovative workplace behavior via mediation and moderation. *Heliyon*, 9(11), e21817. <https://doi.org/10.1016/j.heliyon.2023.e21817>
- Grajzel, K., Acar, S., Dumas, D., Organisciak, P., & Berthiaume, K. (2023). Measuring flexibility: A text-mining approach. *Frontiers in Psychology*, 13, 1093343. <https://doi.org/10.3389/fpsyg.2022.1093343>
- Hair, J. F., Risher, J. J., Sarstedt, M., & Ringle, C. M. (2019). When to use and how to report the results of PLS-SEM. *European Business Review*, 31(1), 2–24. <https://doi.org/10.1108/EBR-11-2018-0203>
- Hair, J. F. J., Hult, G. T. M., Ringle, C. M., & Sarstedt, M. (2021). *A primer on partial least squares structural equation modeling (PLS-SEM)* (3rd ed.). Thousand Oaks, CA: SAGE.
- Hariyani, D., Hariyani, P., Mishra, S., & Sharma, M. K. (2024). Statistical analysis of total quality management employees, customers, suppliers, and management dimensions in hotel industries in Jaipur city, Rajasthan, India. *Sustainability Analytics and Modeling*, 4, 100033. <https://doi.org/10.1016/j.samod.2024.100033>
- Hassan, N., Rhee, J., & Dedahanov, A. (2019). Organizational culture influences on creativity and innovation: A review. *Global Political Review*, 4(2), 33–45. [https://doi.org/10.31703/GPR.2019\(IV-II\).04](https://doi.org/10.31703/GPR.2019(IV-II).04)
- Henseler, J., Ringle, C. M., & Sarstedt, M. (2015). A new criterion for assessing discriminant validity in variance-based structural equation modeling. *Journal of the Academy of Marketing Science*, 43(1), 115–135. <https://doi.org/10.1007/s11747-014-0403-8>
- Heringer, R., Carvalho, A. M., & Sampaio, P. (2022). *The mediating role of organizational culture in managing the relationship between quality and innovation: A conceptual model proposal*. Paper presented at the 2022 IEEE International Conference on Industrial Engineering and Engineering Management (IEEM), IEEE.
- Hokmabadi, H., Rezvani, S. M. H. S., & De Matos, C. A. (2024). Business resilience for small and medium enterprises and startups by digital transformation and the role of marketing capabilities—A systematic review. *Systems*, 12(6), 220. <https://doi.org/10.3390/systems12060220>
- Iddrisu, I. (2025). Understanding the nexus between organizational culture and trust: The mediating roles of communication, leadership, and employee relationships. *Sustainable Futures*, 9, 100555. <https://doi.org/10.1016/j.sfr.2025.100555>
- Isnaini, D. B. J., Danilwan, Y., Mansur, D. M., Ilyas, G. B., Murtini, S., & Taufan, M. Y. (2021). Perceived distribution quality awareness, organizational culture, TQM on quality output. *Journal of Distribution Science*, 19(12), 1–14. <https://doi.org/10.15722/jds.19.12.202112.1>
- Issah, O., Bluwey, E., & Ackah, D. (2024). Total quality management practices, organisational culture and firm performance; service or product innovation. *African Journal of Procurement, Logistics & Supply Chain Management*, 7(9), 135–175. <https://doi.org/10.4314/ajplscm.v7i9.5>
- Jadhav, S. (2025). A systematic review of total quality management (TQM) principles and their impact on organizational performance. *International Journal of Scientific Research and Technology*, 2(10), 232–244.
- Kandampully, J. (2002). Innovation as the core competency of a service organisation: The role of technology, knowledge and networks. *European Journal of Innovation Management*, 5(1), 18–26. <https://doi.org/10.1108/14601060210415144>
- Khan, A., Smith, J., & Lee, R. (2024). Structured creativity in disciplined environments: Fostering innovation within quality management systems. *Journal of Creativity and Innovation*, 12(3), 225–239.
- Kim, D.-Y., Kumar, V., & Kumar, U. (2012). Relationship between quality management practices and innovation. *Journal of Operations Management*, 30(4), 295–315. <https://doi.org/10.1016/j.jom.2012.02.003>

- Kock, N. (2015). Common method bias in PLS-SEM: A full collinearity assessment approach. *International Journal of e-Collaboration*, 11(4), 1-10. <https://doi.org/10.4018/ijec.2015100101>
- Kwon, S.-H., & Kim, J.-S. (2025). Relationship between participative decision-making within an organization and employees' cognitive flexibility, creativity, and voice behavior. *Behavioral Sciences*, 15(1), 51. <https://doi.org/10.3390/bs15010051>
- Lasrado, F. (2019). *Fostering creativity and innovation: Creating a sustainable innovation environment in the United Arab Emirates*. Cham, Switzerland: Palgrave Macmillan.
- Lateef, F. (2020). Maximizing learning and creativity: Understanding psychological safety in simulation-based learning. *Journal of Emergencies, Trauma, and Shock*, 13(1), 5-14. https://doi.org/10.4103/jets.jets_96_19
- Lee, M. C. C., & Ding, A. Y. L. (2023). Hierarchical culture as a cross-level moderator of the relationship between transformational leadership, performance feedback, and employee job performance. *Merits*, 3(3), 504-520. <https://doi.org/10.3390/merits3030030>
- Lepistö, K., Saunila, M., & Ukko, J. (2024). Enhancing customer satisfaction, personnel satisfaction and company reputation with total quality management: Combining traditional and new views. *Benchmarking: An International Journal*, 31(1), 75-97. <https://doi.org/10.1108/BIJ-12-2021-0749>
- Mailani, D., Hulu, M. Z. T., Simamora, M. R., & Kesuma, S. A. (2024). Resource-based view theory to achieve a sustainable competitive advantage of the firm: Systematic literature review. *International Journal of Entrepreneurship and Sustainability Studies*, 4(1), 1-15.
- Marco, P. D. (2025). *Soaring to outrageous service heights*. New York: Skyline Press.
- Marpaung, R. (2024). The role of total quality management and organizational culture in enhancing employee performance: Towards sustainable public service development. *Journal of Ecohumanism*, 3(8), 3909-3918.
- Martinez-Costa, M., & Martínez-Lorente, A. R. (2008). Does quality management foster or hinder innovation? An empirical study of Spanish companies. *Total Quality Management & Business Excellence*, 19(3), 209-221. <https://doi.org/10.1080/14783360701600639>
- Martins, E. C., & Terblanche, F. (2003). Building organisational culture that stimulates creativity and innovation. *European Journal of Innovation Management*, 6(1), 64-74. <https://doi.org/10.1108/14601060310456337>
- Meneses, J. R. A., Coelho, F. J., & Dimas, I. D. (2026). Creativity in the customer era: The mediating role of job stress. *European Journal of Work and Organizational Psychology*, 35(1), 94-110. <https://doi.org/10.1080/1359432X.2025.2562304>
- Miron-Spektor, E., & Paletz, S. B. F. (2024). Culture and creativity in organizations. In the Oxford handbook of cross-cultural organizational behavior. In (pp. 240-267). Oxford, England: Oxford University Press.
- Morales-Huamán, H. I., Medina-Valderrama, C. J., Valencia-Arias, A., Vasquez-Coronado, M. H., Valencia, J., & Delgado-Caramutti, J. (2023). Organizational culture and teamwork: A bibliometric perspective on public and private organizations. *Sustainability*, 15(18), 13966. <https://doi.org/10.3390/su151813966>
- Naranjo-Valencia, J. C., Jiménez-Jiménez, D., & Sanz-Valle, R. (2016). Studying the links between organizational culture, innovation, and performance in Spanish companies. *Revista Latinoamericana de Psicología*, 48(1), 30-41. <https://doi.org/10.1016/j.rlp.2015.09.009>
- Oakland, J. S. (2014). *Total quality management and operational excellence: Text with cases* (4th ed.). Abingdon, Oxon, England: Routledge.
- Palumbo, R., & Douglas, A. (2024). The secret ingredient? Uncovering the effect of organizational culture on quality management: A literature review. *International Journal of Quality & Reliability Management*, 41(1), 195-268. <https://doi.org/10.1108/IJQRM-03-2023-0077>
- Pham, V. K., Vu, T. N. Q., Phan, T. T., & Nguyen, N. A. (2024). The impact of organizational culture on employee performance: A case study at foreign-invested logistics service enterprises approaching sustainability development. *Sustainability*, 16(15), 6366. <https://doi.org/10.3390/su16156366>
- Podsakoff, P. M., MacKenzie, S. B., & Podsakoff, N. P. (2012). Sources of method bias in social science research and recommendations on how to control it. *Annual Review of Psychology*, 63(1), 539-569. <https://doi.org/10.1146/annurev-psych-120710-100452>
- Prajogo, D. I., & McDermott, C. M. (2005). The relationship between total quality management practices and organizational culture. *International Journal of Operations & Production Management*, 25(11), 1101-1122. <https://doi.org/10.1108/01443570510626916>

- Prajogo, D. I., & Sohal, A. S. (2006). The integration of TQM and technology/R&D management in determining quality and innovation performance. *Omega*, 34(3), 296-312. <https://doi.org/10.1016/j.omega.2004.11.004>
- Reza, J. R. D., Alcaraz, J. L. G., Ramírez, C. S., López, J. A. G., Vargas, A. R., & Álvarez, J. L. R. (2025). Achieving strategic goals by continuous improvement and lean manufacturing implementation: A structural equation model-system dynamics approach. *Sustainable Futures*, 9, 100551. <https://doi.org/10.1016/j.sft.2025.100551>
- Sadikoglu, E., & Zehir, C. (2010). Investigating the effects of innovation and employee performance on the relationship between total quality management practices and firm performance: An empirical study of Turkish firms. *International Journal of Production Economics*, 127(1), 13-26. <https://doi.org/10.1016/j.ijpe.2010.02.013>
- Said-Metwaly, S., Van den Noortgate, W., & Kyndt, E. (2017). Approaches to measuring creativity: A systematic literature review. *Creativity. Theories – Research – Applications*, 4(2), 238-275. <https://doi.org/10.1515/ctra-2017-0013>
- Salzmann-Erikson, M., Olsson, A., Rezagholi, M., Fjellström, D., & Osarenkhoe, A. (2024). Bridging technostress and continuous learning in knowledge-intensive organizations: A socio-technical systems approach for the future of healthy working life. *Journal of Infrastructure, Policy and Development*, 8(13), 8938. <https://doi.org/10.24294/jipd8938>
- Schein, E. H. (2016). *Organizational culture and leadership* (5th ed.). Hoboken, NJ: John Wiley & Sons.
- Scratchley, L. S., & Hakstian, A. R. (2001). The measurement and prediction of managerial creativity. *Creativity Research Journal*, 13(3-4), 367-384. https://doi.org/10.1207/S15326934CRJ1334_14
- Silva, F. S. (2025). *Kaizen week: Drive improvements and inspire results in 5 days*. São Paulo, SP, Brazil: UICLAP.
- Simovic, O., Lesjak, M., Perović, Đ., & Podovšovnik, E. (2023). Measuring organizational culture in hotels, restaurants and travel agencies in Montenegro. *Sustainability*, 15(3), 2715. <https://doi.org/10.3390/su15032715>
- Ul Haq, I., & Pifarré, M. (2023). Dynamics of automatized measures of creativity: Mapping the landscape to quantify creative ideation. *Frontiers in Education*, 8, 1240962. <https://doi.org/10.3389/educ.2023.1240962>
- Valentin, G., & Călin, D. (2024). The role of organizational culture in driving innovation: A study of contemporary business practice. *Acta Universitatis Cibiniensis. Technical Series*, 76(1), 46-54. <https://doi.org/10.2478/aucts-2024-0007>
- Wassan, A. N., Memon, M. S., Mari, S. I., & Kalwar, M. A. (2022). Impact of total quality management (TQM) practices on sustainability and organisational performance. *Journal of Applied Research in Technology & Engineering*, 3(2), 93-102. <https://doi.org/10.4995/jarte.2022.17408>
- Yirga, S. A., & Beshir, M. A. (2025). The effect of total quality management practices on innovation: Evidence from selected agricultural technical and vocational education training colleges in Ethiopia. *Journal of Innovation and Entrepreneurship*, 14(1), 21. <https://doi.org/10.1186/s13731-024-00460-x>
- Yunis, M., Jung, J., & Chen, S. (2013). TQM, strategy, and performance: A firm-level analysis. *International Journal of Quality & Reliability Management*, 30(6), 690-714. <https://doi.org/10.1108/02656711311325638>
- Yusof, A. N. B. M., Syukur, S. A. M., Anwar, N. A., Munir, Z. A., Manshor, R., Fauzi, M. W. M., & Kamis, K. (2024). Assessing the effects of organizational culture on the connection between innovation in organizations and human resource management. *Information Management and Business Review*, 16(3), 56-66.
- Zhang, W., Zeng, X., Liang, H., Xue, Y., & Cao, X. (2023). Understanding how organizational culture affects innovation performance: A management context perspective. *Sustainability*, 15(8), 6644. <https://doi.org/10.3390/su15086644>
- Zu, X., Robbins, T. L., & Fredendall, L. D. (2010). Mapping the critical links between organizational culture and TQM/Six Sigma practices. *International Journal of Production Economics*, 123(1), 86-106. <https://doi.org/10.1016/j.ijpe.2009.07.009>

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