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The mediating effect of TQM on the relationship between market orientation and organizational performance

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ABSTRACT

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The purpose of the present paper was to explore whether total quality management (TQM) mediated the influence of market orientation (MO) on organizational performance (OP). The study was conducted using a quantitative way of investigation with the help of the survey instrument as the primary tool for data collection. Firm ICT managers completed the survey, and the data collected was used to explore the pathways proposed. After having been collected, the data were screened using the SPSS 26 version, and the hypothesized correlations were tested using the same data. The results indicate that both MO and TQM had significant impacts on OP. Such a connection was also impacted by the implementation of TQM. The information and communication technology (ICT) industry is popular among developing countries and is considered as one of the most employers and tools that fasten economic progress. The results provide new insights into the relationships and impacts of MO and TQM on organizational performance to owners/managers, practitioners, and academicians in the ICT sector. The owners and managers can serve as the guidelines to make better decisions in implementing MO with TQM standards to outperform in all aspects and sustain market competition. The owners and managers are advised to develop better strategies to adopt MO and TQM plans into more effective and performance-oriented approaches. This study is the first to do empirical research on the connections between overall quality management, market orientation, and organizational performance in the ICT sector of an Arab developing country.

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1. Introduction

Information communication and technology companies like other sectors are the fastest developing and growing, and always seeking to enhance their capabilities and strategies to enhance their performances. Information and Communication Technology (ICT) Association-Jordan stated some of the highlight points of the significance of the ICT sector in the Hashemite Kingdom of Jordan as mentioned below: firstly, The ICT sector's role in contributing to the country's gross domestic product (GDP), the volume of investment in this sector and providing job opportunities. Secondly, despite the importance of the ICT sector in the national economy, the profit of Jordanian ICT firms decreased in the past three years, as reported by TRC 2020. Therefore, for the ICT companies to continue to support the growth of the national economy, there should be continuous enhancement of the performances of these firms which addresses the performance improvement for ICT firms. Finally, organizational performance (OP) is the first and most important sub-element of performance (Sharabati et al., 2023). A lack of managerial experience, poor market orientation, and weak implementation of quality management are to

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blame for the fragility of organizational performance in most emerging nations. In Jordan, it has also been argued that the underperformance of Jordanian ICT firms may potentially be attributed to the low BE quality, which is incapable of satisfying the customer's needs. Additionally, the lack of strategic market orientation (MO) constitutes a major aspect in realizing poor growth. The current study has, therefore, sought to investigate the issue of quality and MO about the OP of the Jordanian ICT sector. Total Quality Management (TQM) (Al-Qayoudhi et al., 2022) might be defined as a system to generate and produce high-quality products, goods, or services consistently at a reduced cost and increased productivity to meet consumers' demands. Moreover, market Orientation represents A significant method and aspect to adopt in this regard. It may also create a marketplace with a culture in which competitive performance and Customer desires are encouraged and OP. Hence a nice working environment is important. OP in the Jordanian ICT sector, quality performance, and service sector cost and productivity ought to be included. Since the ICT firms in the BE mean to be such that they may excel in the marketplace and achieve a feasible benefit, a MO mean must be included as well. Many practitioners have combined an MO approach with TQM to enhance the quality performance shift OC spends model and achieve OP in the remaining years and added a more focused approach in the service sector. Accordingly, the MO approach for improving OC has attracted both scientific and practitioner attention. For the utility of an MO in ICT, many executives also felt urged to reduce expenditure, eliminate positioning with productivity outcomes, and reintroduce OP on an ME strategy. Hence an MO approach has been increasingly employed (Homaid et al., 2015).

2. Literature Review and Hypotheses

This research looks at the relationship between MO and OP in the Jordanian ICT sector, with TQM serving as a mediator between the two. In addition to constructing a theoretical framework and testing hypotheses, this study provides empirical data derived from the literature reviewed.

2.1 Organizational Performance (OP)

OP is essentially a gauge of how ICT firms use their resources to generate revenue (Schiersch et al., 2024). Performance can be characterized as the results of business operations or goal achievement, efficient management of capital, and client and employee satisfaction (Pantouvakis et al., 2024). Financial and non-financial performance are included in performance indicators. Additionally, performance depicts total gains and losses. The financial, business process, customer, employee, and learning and commitment perspectives are based on performance evaluation. A review of these different types of OP indicators indicates that no agreement exists about specific indicators to measure OP in the ICT sector. Moreover, there is a lack of studies that use the holistic approach to measure OP based on several factors, despite the BCS approach, which is the best method to measure OP in the service sector. For the OP is multidimensional as a single construct, simultaneous evaluation of these various dimensions is preferable to individual performance dimension consideration when inferring the efficacy of managerial activities (Al-Tit, 2016). In particular, in the services sector, market performance, customer relationship, and operational performance play an important role in improving the holistic OP (Nakabuye et al., 2023). At the same time, Gahari and Surabaya (2024) stated the role of innovation performance and employees' performance, and Richnák and Gubová (2021) added social responsibility because of its important role in the service sector. Each of the following indicators reflects a specific level of activity: customer connections, staff employee performance, innovation performance, operational performance, market performance, and social responsibility (Almuntfjy et al., 2024). In previous studies, inventory performance was not mentioned in the services sector due to its lack of importance in improving organizational performance. This research will focus on OP within the services sector. For example, a measurement can be associated with an OP and evaluated through their financial and non-financial indicators. To assess a single OP, some researchers used multiple performance factors to explore all dimensions of an organization's performance, such as "operational performance, employee performance, innovation performance, customer results, social responsibility, and market and financial performance".

2.2 Total Quality Management (TQM)

TQM is a quality improvement philosophy that seeks to provide customers with high-quality goods, services, and products while increasing providers' efficiency. The first proposition for total quality control proposed a radical way of quality that depends mostly on a scheme of prevention rather than repair. Ahmed et al. (2024) defined TQM as a quality improvement philosophy that improves an organization's competitive edge due to continuous improvement of the process management and environment organization, quality services, and products. Also, TQM is a continuous improvement strategy, customer focus, effective process management, management leadership, quality products and services, information analysis, and staff education and enhancement (Gaudenzi & Qazi, 2021). According to Tarhini et al. (2016), an institution can acquire a competitive edge by optimizing a few quality factors that its competitors overlook. Many people have identified that TQM remains an issue in most organizations. These organizations implement the wrong strategy and an irregular process, are unacquainted with the ways the TQM practices and drive success factors, or incorrectly deploy the success factors (Sabella et al., 2014). Therefore, the study needs to clarify the critical factors to understand key factors for significant practices. The findings identify those TQM practices and the quality gurus: leadership management, supplier relationships, customer focus, strategic planning teamwork, and information analysis were agreed upon based on the previous ICT executives. Consequently, given these conflicting results, more study into the relationship between TQM and performance is necessary. As a result, this hypothesis is posited.

H₁: *TQM positively affects organizational performance.*

2.3 Market Orientation

MO is a continuous process of collecting market information that the organizational department utilizes in making decisions and actions (Nuryati et al., 2024). MO enhances consumer satisfaction and a company's performance is associated with a positive and significant publication. As one form of corporate culture, MO gives rise to behaviors that are necessary to create outstanding value for consumers, leading to excellent performance (Gahari & Surabaya, 2024). Repeated exceptional performance is the result of MO that signals businesses' commitment to producing products and services that satisfy and exceed customer expectations and wants. This commitment reflects the expectation that functioning MOs are performance-focused and promote organizations by translating the potential advantages of adaptability, flexibility, expertise, and responsiveness into a distinct strategic asset. Therefore, in this dynamic organizational context, MO appears to be a critical factor for performance. Jaworski and Kohli (1993) explain that the MO concept's basic elements are intelligence dissemination, intelligence generation, and responsiveness. These constructs should generate concern for the following hypothesis:

H₂: *MO positively affects organizational performance.*

The quality management and marketing literature has published little empirical research on the link between MO and TQM procedures. Some studies have shown the connection between MO and TQM practices. Marketing operations and TQM processes require comprehensive systematic data collection to meet customer expectations, which will necessitate collaboration with other units. Customer value development requires strong collaboration between an organization's quality and marketing departments. Day suggests that building a market-oriented organization involves taking certain 'such steps' to increase market sensing and the ability to interact with customers. These abilities are aided by the adoption of TQM methodologies. TQM is the belief that the organization is an interconnected assembly of processes as opposed to a collection of different functional groups that interact as an organization. Both TQM and MO require an organizational structure that is created about the flow of value-adding activities and systems of authority bestowing implementation control (Alsmairat et al., 2024). TQM implementation can provide businesses with a wide range of tools they could use for the same goal due to information nature practices and market orientation. The success of TQM procedures is an internally constraining but reiterative procedure that cannot develop outside of an organization's borders, which Day has observed as a drawback in attempting to use TQM to achieve MO (Joy et al., 2024). Effectively implemented TQM methods can assist an organization's evolution toward a more market-oriented approach, relying on bottom-up modification and strong top management commitment. The change program requires cross-functional projects, unified objectives, and a distribution system. It can increase a firm's ability to respond to its customers (Testa et al., 2024). Therefore, the hypothesis is expected.

H₃: *MO positively affects TQM.*

Similarly, the resources approach should be used to model market orientation (MO) to identify an organization's core competencies to be market-oriented (Jaworski & Kohli, 1993), TQM, as an illustration. Although MO has been found to positively and considerably influence organizational resources like TQM, no management research has discussed the influence of MO on TQM capabilities, especially in the ICT sector (Sundram et al., 2020). This demonstrates that there is a void in the body of literature that the current study fills. It has been suggested that TQM procedures can help organizations acquire, integrate, and use their resources in a way that better aligns with market prospects, and, as a result, an advantageous position in a marketplace is attained (Yeng et al., 2018). Additionally, it is argued that a complicated link exists between organizational resources, other organizational resources, and organizational performance and that abilities can be utilized as mediators in that relationship. Additionally, the current literature claims that organizational capabilities are likely to mediate the association between performance and resources (Ali et al., 2021). However, Jawabreh et al. (2023) argued that TQM moderates organizational performance when combined with MO and organizational capacities (via changes to organizational practices like TQM). Some empirical evidence has been found to support TQM's mediating function. TQM practices mediate the link between organizational strategy and performance. So, the following hypothesis is posited:

H₄: *TQM mediates the relationship between MO and organizational performance.*

To explain how a firm may use its resources and capabilities to attain a competitive advantage, the Resource-Based View, which is a strategic theory, was used. According to the resource-based framework, strategic dimensions like MO and TQM can be classified as a set of internal resources that may generate competitive advantages. TQM practices have not been examined as a mediating variable in RBV, and prior studies have demonstrated a gap in previous research by testing the implications of MO and TQM on performance using RBV theory. Previous literature dealt with TQM, MO, and OP, which are key factors that greatly impact the association between strategic orientations. When TQM is adequately embedded into critical parts of the firm, superior results are produced. Thus, the present research was aimed at determining the association between MO, TQM, and OP in ICT enterprises. Fig. 1 presents the third theoretical model:

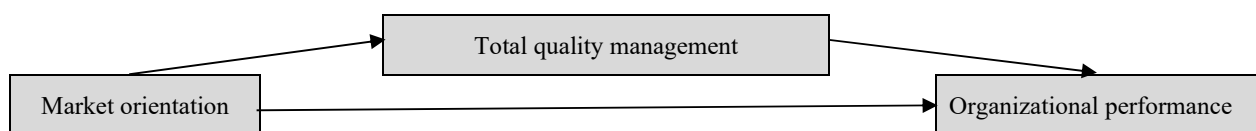


Fig. 1. Conceptual model

3. Methodology

The study was carried out on managers from one hundred and forty-three ICT organizations. Given this small population, all the management was involved. Managers were the best people to interview since they hold places from executive positions, making them adequate respondents capable of giving information on strategy implementation in their organizations. Therefore, the research sample is a perfect representative of the entire population. Using the approach from previously reviewed literature, the researcher developed the questionnaire. To ensure high reliability and validity, we used the construct measures from earlier studies. In the assessment, we allocated the first part to the six dimensions of MO orientation, including intelligence generation, intelligence dissemination, and responsiveness. In the second section and according to (Sabella et al., 2014) the six TQM practices have eight aspects of the mediating component: customer focus, information analysis, leadership management, teamwork, strategic planning, and supplier relationship. The third section measured the dependence variable of the organizational performance MO contextual link (Ali & Waheed, 2024). The Likert scale questionnaire sent out had five propositions with “1” meaning strongly disagree; 2 disagree, 3 neutral, 4 agree, and 5 strongly agree. Such questions resulted in a seventy-six percent effective response rate after the analyzed the returned surveys dispatched, with a total of 109 usable out of the possible 143 completed surveys. The applicable data analysis for this research was the Partial Least Squares because it is a popular structural equation modeling technique utilizing the principal component analysis-based estimation approach. PL was the most reliable method based on previous analyses for predictive research models with formative model constructs.

Table 1
Construct Measurements

Market orientation	Intelligence Generation (IG)	(Jaworski & Kohli, 1993)
	Intelligence dissemination (ID)	(Jaworski & Kohli, 1993)
	Responsiveness (ER)	(Jaworski & Kohli, 1993)
Total quality management	Leadership management (LM)	(Lam et al., 2011)
	Customer focus (CF)	(Wang et al., 2012)
	Teamwork (TW)	(Talib et al., 2013)
	Information analysis (IA)	(Sabella et al., 2014)
	Supplier relationship (SR)	(Andrewis et al., 2018)
	Strategic planning (SP)	(Lam et al., 2011)
Organizational performance	Operational performance (OPP)	(Sadikoglu & Olcay, 2014)
	Employee performance (EP)	(Sadikoglu & Olcay, 2014)
	Innovation performance (IP)	(Sadikoglu & Olcay, 2014)
	Customer results (CR)	(Sadikoglu & Olcay, 2014)
	Social responsibility (SR)	(Sadikoglu & Olcay, 2014)
	Market and financial performance (MP)	(Sadikoglu & Olcay, 2014)

4. Data Analysis

The reliability of the instrument was measured by the researchers who used Cronbach's-Alpha.

Table 2
Reliability and Validity

Variables	Cronbach's alpha	AVE	CR	Variables	Cronbach's alpha	AVE	CR
Market orientation	0.933	0.943	0.624	Organization	0.955	0.959	0.542
Intelligence Generation (IG)	0.875	0.924	0.802	Operational performance	0.843	0.906	0.762
Intelligence dissemination (ID)	0.872	0.912	0.723	Employee performance	0.917	0.937	0.750
Responsiveness (ER)	0.847	0.908	0.767	Innovation performance	0.864	0.917	0.786
Total quality management	0.971	0.973	0.591	Customer results (CR)	0.651	0.976	0.954
Leadership management (LM)	0.911	0.935	0.742	Social responsibility (SR)	0.887	0.930	0.815
Customer focus (CF)	0.859	0.915	0.782	Market and financial	0.892	0.926	0.757
Teamwork (TW)	0.952	0.969	0.912				
Information analysis (IA)	0.940	0.954	0.807				
Supplier relationship (SR)	0.925	0.947	0.817				
Strategic planning (SP)	0.893	0.922	0.702				

After measuring the reliability, the researchers assess Convergent validity which is the steadiness of connected and related constructs. The Average Variance Extracted was used after four constructs. AVE should be at least 0.50, according to the document. Internal consistency was used. The AVE was measured concerning the Convergent validity measured. After AVE, the internal consistency was measured. Measures the two research Cronbach's alpha named coefficient alpha CA. CR and CA's value is between 0 and 1, and the closer it is to 1, but less than 1 is preferred to 0.7. It is evident from Table 2 that CA and CR's measures were all above 0.70 so the measures were reliable to measure the variables of this study. In addition, the AVE which is all above 0.50. Thus, the AVE, factor loadings, and the Composite Reliability parameter have all the required nothing. Therefore, this me concludes that meeting the requirements that meet the requirements hence the measurement model is so supportive and still stands. The descriptive statistics for mean and standard deviations (Std.) were obtained using SPSS. Three categories were used to analyze the five-Likert scale; low when the values are less than 2.33 [$4/3 + \text{lowest value (1)}$], a high value is greater than 3.67 [$\text{highest value (5)} - 4/3$], and moderate when the values fall between the two extremes. Noor and Kumar classified this in their 2014 study based on the 5-point Likert scale interpretation which is similar and substantial to the present research. Table 3 indicates all factors are within the moderate category and mentions only leadership management, customer focus, and strategic planning scored not moderate. It is important to analyze the normality of the data

after ensuring the instrument is reliable. The researchers suggest checking normality using kurtosis and skewness among other similar sources (Hair et al., 2017). Skewness .147-.868 and Kurtosis -1.560 and -.131 from Table 3 show these values are similar to what is portrayed as normal (Hair et al., 2017).

Table 3
Skewness and Kurtosis

Variables	Mean	Std. Deviation	Label	Skewness	Kurtosis
Market orientation	2.47	1.08	Moderate		
Intelligence Generation (IG)	2.70	1.24	Moderate	.149	-1.415
Intelligence dissemination (ID)	2.37	1.09	Moderate	.582	-.796
Responsiveness (ER)	2.36	1.08	Moderate	.529	-.995
Total quality management	2.48	1.03	Moderate		
Leadership management (LM)	2.14	1.03	Low	.868	-.131
Customer focus (CF)	2.23	1.11	Low	.831	-.434
Teamwork (TW)	2.49	1.24	Moderate	.529	-1.048
Information analysis (IA)	2.78	1.45	Moderate	.275	-1.459
Supplier relationship (SR)	2.67	1.28	Moderate	.147	-1.375
Strategic planning (SP)	2.27	1.11	Low	.857	-.176
Organizational performance	2.52	1.09	Moderate		
Operational performance (OPP)	2.56	1.31	Moderate	.482	-1.072
Employee performance (EP)	2.43	1.29	Moderate	.522	-1.190
Innovation performance (IP)	2.34	1.29	Moderate	.741	-.809
Customer results (CR)	2.69	1.33	Moderate	.200	-1.560
Social responsibility (SR)	2.65	1.26	Moderate	.136	-1.488
Market and financial performance (MP)	2.47	1.14	Moderate	.383	-1.269

This study employed the tolerance value and Variance Inflation Factor (VIF) to determine whether multicollinearity issues were present among the variables (Brien, 2007). Table 4 shows no multicollinearity as the tolerance values ranged between 0.798 and 0.928, and the VIF values ranged between 1.078 and 1.240. Therefore, no multicollinearity exists among the independent variables.

Table 4
Collinearity Statistics Tolerance

Model		Collinearity Statistics Tolerance	
		Tolerance	VIF
MO	Organization performance	0.807	1.240
TQM		0.798	1.254
MO	TQM	0.820	1.219

The first step in a PLS-SEM analysis is the measurement model (outer model). Based on researchers' suggestions, a factor with a loading of less than 0.70 should be removed because it adds little to the prediction of a variable (Hair et al., 2017). This model deals with the measurement that shows how theoretically loaded indicators relate to a construct above 0.70. (See Table A1 in Appendix). The test convergent validity in this study. Convergent validity tests the existing similar constructs that are linked and connected. This was achieved in the average variance extracted which should be at least 5, and in the composite reliability coefficient which should be over .60. These conditions were satisfied. See Table 5.

Table 5
Convergent Validity

Construct	Cronbach's alpha	CR	AVE	Construct	Cronbach's alpha	CR	AVE
IA	0.791	0.911	0.912	SP	0.792	0.861	0.787
IG	0.865	0.922	0.747	OPP	0.863	0.875	0.721
ID	0.855	0.901	0.693	EP	0.922	0.884	0.764
LM	0.882	0.899	0.743	IP	0.771	0.911	0.680
CF	0.892	0.889	0.658	SOR	0.863	0.897	0.659
TW	0.785	0.901	0.754	CR	0.855	0.875	0.668
IA	0.783	0.854	0.699	MP	0.855	0.833	0.719
SR	0.810	0.844	0.723				

Discriminant validity can be associated with confirming that the items of a variable measure the variable and any item is designed to measure rather than any other variable. Tables 6 and 7 show that discriminant validity was achieved.

Table 6
Discriminant Validity of the Second Order

	Market orientation	Organizational performance	Total quality management
MO	0.904		
OP	0.820	0.860	
TQM	0.830	0.851	0.864

Table 7
Discriminant Validity of the First Order

	CF	IA	IG	ID	RE	TW	CR	EP	IP	LM	MP	OPP	SOR	SP	SR
CF	0.884														
IA	0.711	0.898													
IG	0.749	0.711	0.895												
ID	0.654	0.623	0.722	0.850											
RE	0.710	0.593	0.651	0.807	0.876										
TW	0.649	0.571	0.612	0.562	0.547	0.955									
CR	0.558	0.622	0.652	0.621	0.577	0.508	0.977								
EP	0.707	0.484	0.555	0.633	0.746	0.527	0.541	0.866							
IP	0.616	0.584	0.633	0.588	0.576	0.730	0.777	0.608	0.887						
LM	0.812	0.781	0.767	0.648	0.696	0.637	0.564	0.553	0.599	0.862					
MP	0.619	0.629	0.626	0.684	0.552	0.548	0.455	0.601	0.578	0.661	0.870				
OPP	0.520	0.582	0.544	0.393	0.441	0.354	0.635	0.459	0.530	0.625	0.602	0.873			
SOR	0.730	0.690	0.734	0.702	0.710	0.612	0.714	0.755	0.698	0.702	0.784	0.608	0.903		
SP	0.674	0.779	0.694	0.459	0.518	0.511	0.493	0.456	0.521	0.728	0.628	0.544	0.687	0.838	
SR	0.705	0.733	0.710	0.615	0.704	0.639	0.686	0.688	0.732	0.757	0.616	0.543	0.834	0.713	0.904

The results of the measurement model in the current research note that the “reliability and validity” of all constructs were achieved. Therefore, the structural model was analyzed to determine the relationships between the variables.

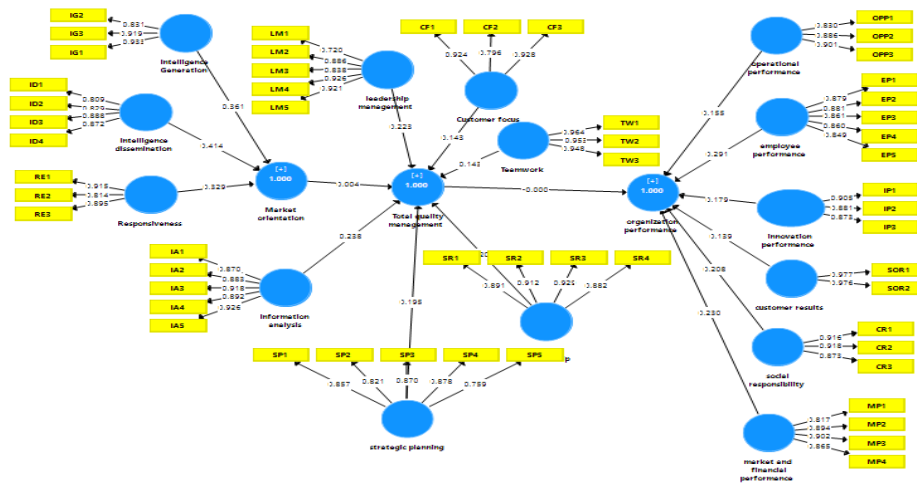


Fig. 2. Measurement Model

Table 8 supports the first hypothesis by demonstrating a significant and favorable relationship between MO and organizational performance ($\beta=0.227$; $t=1.932$; $p=0.05$). The main discovery regarding the relationship between MO and organizational performance is consistent with those made by (Lekmat et al., 2018). TQM has a significant link with performance, according to results from Table 8 ($\beta=0.340$; $t=3.596$; $p=0.01$). The second hypothesis on these relationships is therefore accepted and is consistent with (Amin et al., 2017; Honarpour et al., 2018). MO and organizational performance were shown to be significantly correlated ($p=0.05$; $t=2.133$; $\beta=-0.253$). This conclusion aligns with (Han et al., 1998). The mediation results also confirmed Hypothesis 4. This study showed that TQM mediates the association between market orientation and organizational performance. See Table 10.

Table 8
Results of Hypothesis Testing of Direct Relationship

Relationships	Std. Beta	Std. Error	T Statistics	P Values	Decision
MO → OP	0.227**	0.058	1.932	0.017	Supported
TQM → OP	0.340***	0.045	3.596	0.000	Supported
MO → TQM	0.253**	0.043	2.133	0.015	Supported

Note: ***: $p < 0.01$; **: $p < 0.05$.

Table 9
Results of Hypotheses Testing (Mediation)

Relationship	Std. Beta	Std. Error	t-values	p-values	Confidence Intervals CIs		Decision
					LLCI	ULCI	
MO → TQM → OP	0.123***	0.025	4.346	0.000	0.166	0.278	Supported

Note: ***: $p < 0.01$.

5. Conclusions

This study explored the mediating impact of TQM on the association between MO and OP in Jordanian ICT companies. This study's empirical evidence confirms that MO positively impacts organizational performance and total quality management. The assumption of Resource-Based Value guided the development of the theoretical framework for this investigation (RBV). According to the findings, TQM and MO significantly affected organizational performance in Jordanian ICT companies. The data also show that TQM mediated the link between MO and OP.

6. Managerial Implications

This paper constructed a research framework using relevant published studies to ascertain the relationships among MO, TQM, and OP. For managers and decision-makers, these research findings suggest many commercial avenues. The government can use this study's findings as a roadmap to address economic concerns affecting the Jordanian ICT sector and improve performance. Government and ICT organizations should work together to create a market-oriented approach. Furthermore, these organizations should encourage adopting TQM via appropriate policy programs and training. Owners and managers of ICT businesses should therefore focus on enhancing their staff members' capacities to consider important market-oriented and high-quality methods. Owners and managers of ICT companies can create a sustained competitive edge by coming up with innovative plans and utilizing the potential benefits of their flexibility and proximity to clients.

7. Limitations and Future Research

There are certain limitations to this study. First, Adem et al. (2018) contended that using a cross-sectional snapshot to investigate the temporal nature of an organization's learning orientation is inappropriate. To address the constraints of a cross-sectional study, longitudinal studies that track changes in TQM implementation, market orientation, and organization performance are recommended. Second, because the data were collected from the Jordanian ICT sector, it is difficult to apply the findings to other organizations or industries that operate in more stable environments. As a result, the findings should be interpreted with caution. Because the data for this study were acquired from the ICT sector, future research employing manufacturing industries or comparing manufacturing and service sectors could shed more light on the MO and TQM links. Third, while the MO scale was utilized in this study, other scales may be suitable. Using alternative scales on the same sample may give additional information on the linkages between MO, TQM, and organizational performance. Finally, the study did not explore organizational culture or structure as potential mediators.

References

- Adem, S. Al, Childerhouse, P., Egbelakin, T., Wang, B., Teerlink, M., Tabassum, R., Fogarty, S. T., Bag, S., Gupta, S., Kumar, A., Sivarajah, U., Id, S., Dubey, R., Gunasekaran, A., Childe, S. J., Bryde, D. J., Giannakis, M., Foropon, C., Roubaud, D., ... Verma, S. (2018). Big data analytics and artificial intelligence pathway to operational performance under the effects of entrepreneurial orientation and environmental dynamism: A study of manufacturing organisations. *Industrial Marketing Management*, 226(0123456789), 3–5. <https://doi.org/10.1016/j.ijpe.2019.107599>
- Ahmed, S., Hawarna, S., Alqasbi, I., Mohiuddin, M., Rahman, M. K., & Ashrafi, D. M. (2024). Role of Lean Six Sigma approach for enhancing the patient safety and quality improvement in the hospitals. *International Journal of Healthcare Management*, 17(1), 52–62. <https://doi.org/10.1080/20479700.2022.2149082>
- Al-Qayoudhi, S. A. S., Kamal, E. M., & Said, I. (2022). Success Factors of Total Quality Management (TQM) Practices: A Case Study of University of Technology and Applied Sciences (UTAS) in the Sultanate of Oman. *COMPENDIUM by Paper ASIA*, 40(2b), 59–71.
- Al-Tit, A. (2016). Wpływ wyszczuplenia łańcuchów dostaw na produktywność saudyjskich firm produkcyjnych w regionie al-qassim. *Polish Journal of Management Studies*, 14(1), 18–27. <https://doi.org/10.17512/pjms.2016.14.1.02>
- Ali, K., & Waheed, A. (2024). Synergistic role of TQM 4.0 toward industry 4.0 readiness: a sociotechnical perspective of selected industries. *TQM Journal*, April, 0–29. <https://doi.org/10.1108/TQM-08-2023-0249>
- Ali, M., Rahman, S. M., & Frederico, G. F. (2021). Capability components of supply chain resilience for readymade garments (RMG) sector in Bangladesh during COVID-19. *Modern Supply Chain Research and Applications*, 3(2), 127–144. <https://doi.org/10.1108/mscra-06-2020-0015>
- Almuntfjy, L., Kowang, T. O., Alani, E., & Hazzaa, O. T. (2024). Total Quality Management and Corporate Social Responsibility Integrated Practices for Higher Education Institutions: Conceptual Framework. *International Journal of Professional Business Review*, 9(2), e02633. <https://doi.org/10.26668/businessreview/2024.v9i2.2633>
- Alsmairat, M. A. K., Al-Ma'aitah, N., Al-hwameil, T., & Elrehail, H. (2024). Supply chain partnership and sustainable performance: does TQM mediate the relationship? *International Journal of Quality and Service Sciences*, 16(1), 63–86. <https://doi.org/10.1108/IJQSS-07-2023-0101>
- Amin, M., Aldakhil, A. M., Wu, C., Rezaei, S., & Cobanoglu, C. (2017). The structural relationship between TQM, employee satisfaction, and hotel performance. *International Journal of Contemporary Hospitality Management*, 29(4), 1256–1278. <https://doi.org/10.1108/IJCHM-11-2015-0659>
- Androwis, N., Sweis, R. J., Tarhin, A., Moaref, A., & Amiri, M. H. (2018). Total quality management practices and organizational performance in the construction chemicals companies in Jordan. *Total Quality Management Practices and Organizational Performance in the Construction Chemicals Companies in Jordan*, 25(8).
- Brien, R. M. O. (2007). A caution regarding rules of thumb for variance inflation factors. *Quality & Quantity*, 41(5), 673–

690. <https://doi.org/10.1007/s11135-006-9018-6>
- Gahari, R., & Surabaya, U. A. (2024). *Analysis of Business Strategy, Market Orientation, and Innovation Capability On Competitive Advantage Through PT Abc's Firm Performance*. 5(3), 1196–1203.
- Gaudenzi, B., & Qazi, A. (2021). Assessing project risks from a supply chain quality management (SCQM) perspective. *International Journal of Quality and Reliability Management*, 38(4), 908–931. <https://doi.org/10.1108/IJQRM-01-2020-0011>
- Hair, J., B., H. A., & Chong, R. A. (2017). Industrial Management & Data Systems. *Industrial Management & Data Systems Business Process Management Journal In Management Decision*, 110(5), 111–133.
- Han, J. K., Kim, N., & Srivastava, R. K. (1998). Market Orientation and Organizational Performance: Is Innovation a Missing Link? *Journal of Marketing*, 62(4), 30–45. <https://doi.org/10.1177/002224299806200403>
- Homaid, A. A., Minai, M. S., & Rahman, H. A. (2015). TQM and performance linkage in the microfinance institutions: The mediating role of IT capability. *Asian Social Science*, 11(21), 213–230. <https://doi.org/10.5539/ass.v11n21p213>
- Honarpour, A., Jusoh, A., & Md Nor, K. (2018). Total quality management, knowledge management, and innovation: an empirical study in R&D units. *Total Quality Management and Business Excellence*, 29(7–8), 798–816. <https://doi.org/10.1080/14783363.2016.1238760>
- Jawabreh, O., Baadhem, A. M., Ali, B. J. A., Atta, A. A. B., Ali, A., Al-Hosaini, F. F., & Allahham, M. (2023). The Influence of Supply Chain Management Strategies on Organizational Performance in Hospitality Industry. *Applied Mathematics and Information Sciences*, 17(5), 851–858. <https://doi.org/10.18576/AMIS/170511>
- Jaworski, B. J., & Kohli, A. K. (1993). Market orientation: Antecedents and consequences. *Journal of Marketing*, 57(July), 53–70.
- Joy, R. A., Hawlader, M. S., Rahman, M. S., Hossain, M. R., Shamim, S. I., & Mahmud, H. (2024). Improving Quality, Productivity, and Cost Aspects of a Sewing Line of Apparel Industry Using TQM Approach. *Mathematical Problems in Engineering*, 2024. <https://doi.org/10.1155/2024/6697213>
- Lam, S. Y., Lee, V. H., Ooi, K. B., & Lin, B. (2011). The relationship between TQM, learning orientation and market performance in service organisations: An empirical analysis. *Total Quality Management and Business Excellence*, 22(12), 1277–1297. <https://doi.org/10.1080/14783363.2011.631337>
- Lekmat, L., Selvarajah, C., & Hewege, C. (2018). Relationship between Market Orientation, Entrepreneurial Orientation, and Firm Performance in Thai SMEs: The Mediating Role of Marketing Capabilities. *International Journal of Business and Economics*, 17(3), 213–237. [http://www.ijbe.org/table of content/pdf/vol17-3/02.pdf](http://www.ijbe.org/table%20of%20content/pdf/vol17-3/02.pdf)
- Nakabuye, Z., Mayanja, J., Bimbona, S., & Wassermann, M. (2023). Technology orientation and export performance: the moderating role of supply chain agility. *Modern Supply Chain Research and Applications*, 5(4), 230–264. <https://doi.org/10.1108/mscra-01-2023-0006>
- Nuryati, S., Frimayasa, A., & Arief, Z. (2024). The Influence Of Market Orientation And Innovation On Business Performance In MSMEs Through Competitive Advantage. *Jurnal Scientia*, 13(01), 59–68.
- Pantouvakis, A., Vlachos, I., & Polemis, D. (2024). The impact of maritime service quality on employee satisfaction by seafarers rank: evidence from a global survey grounded on ERG theory. *International Journal of Quality and Reliability Management*, 41(1), 107–126. <https://doi.org/10.1108/IJQRM-12-2022-0354>
- Richnák, P., & Gubová, K. (2021). Green and reverse logistics in conditions of sustainable development in enterprises in Slovakia. *Sustainability (Switzerland)*, 13(2), 1–23. <https://doi.org/10.3390/su13020581>
- Sabella, A., Kashou, R., & Omran, O. (2014). Quality management practices and their relationship to organizational performance. *International Journal of Operations & Production Management*, 34(12), 1487–1505. <https://doi.org/10.1108/IJOPM-04-2013-0210>
- Sadikoglu, E., & Olcay, H. (2014). The Effects of Total Quality Management Practices on Performance and the Reasons of and the Barriers to TQM Practices in Turkey. *Advances in Decision Sciences*, 2014, 1–17. <https://doi.org/10.1155/2014/537605>
- Schiersch, A., Bertschek, I., & Niebel, T. (2024). To diversify or not? The link between global sourcing of ICT goods and firm performance. *Economics of Innovation and New Technology*, 1–23. <https://doi.org/10.1080/10438599.2024.2309675>
- Sundram, V. P. K., Chhetri, P., & Bahrin, A. S. (2020). The Consequences of Information Technology, Information Sharing, and Supply Chain Integration, towards Supply Chain Performance and Firm Performance. *Journal of International Logistics and Trade*, 18(1), 15–31. <https://doi.org/10.24006/JILT.2020.18.1.015>
- Talib, F., Rahman, Z., & Qureshi, M. N. (2013). An empirical investigation of relationship between total quality management practices and quality performance in Indian service companies. *International Journal of Quality & Reliability Management*, 30(3), 280–318. <https://doi.org/10.1108/02656711311299845>
- Tarhini, A., Elyas, T., Akour, M. A., & Al-Salti, Z. (2016). Technology, Demographic Characteristics, and E-Learning Acceptance: A Conceptual Model Based on Extended Technology Acceptance Model. *Higher Education Studies*, 6(3), 72–89. <https://doi.org/10.5539/hes.v6n3p72>
- Testa, M., D'Amato, A., Singh, G., & Festa, G. (2024). Innovative profiles of TQM in banking management. The relationship between employee training and risk mitigation. *TQM Journal*, 36(3), 940–957. <https://doi.org/10.1108/TQM-01-2022-0043>
- Wang, C. H., Chen, K. Y., & Chen, S. C. (2012). Total quality management, market orientation, and hotel performance: The moderating effects of external environmental factors. *International Journal of Hospitality Management*, 31(1), 119–129. <https://doi.org/10.1016/j.ijhm.2011.03.013>

Yeng, S. K., Jusoh, M. S., & Ishak, N. A. (2018). The impact of Total Quality Management (TQM) On competitive advantage: A conceptual mixed method study in the Malaysia Luxury hotel industries. *Academy of Strategic Management Journal*, 17(2), 282–302.

Appendix A

Table A1

Outer Loading

Variables	Items	Loading
TQM	Leadership management (LM)	
	LM1: "Top management always encourages staff to be involved in quality management and improvement activities."	0.720
	LM2: "Top management empowers staff to solve quality problems."	0.886
	LM3: "Top management allocates adequate resources for staff education and training."	0.838
	LM4: "Top management learns quality-related concepts and skills."	0.926
	LM5: "Top management is actively involved in quality management and improvement process."	0.921
	Customer focus (CF)	
	CF1: "Our activities mainly focus on satisfying our customers."	0.924
	CF2: "It is imperative to satisfy our customers and exceed their expectations."	0.796
	CF3: "Our senior executives always emphasize the importance of customers."	0.928
	Teamwork (TW)	
	TW1: "Our company encourages employees to trust each other and work as a team."	0.964
	TW2: "Our company encourages team members to appreciate constructive criticism."	0.953
	TW3: "Our company facilitates communication among team members to generate good ideas about potential changes and solutions to problems."	0.948
	Information analysis (IA)	
	IA1: "This company has an effective system to assess its operational performance."	0.870
	IA2: "This company does have a clear, comprehensive appraisal system."	0.883
	IA3: "All staff in this company understand the indicators linked to their performance well and take them seriously."	0.918
	IA4: "This company adjusts its performance according to the changes in the environment."	0.892
	IA5: "Senior management adjusts the company policy and strategy by analyzing information and facts."	0.926
	Supplier relationship (SR)	
	SR1: "Our company has a Long-Term relationship and long partnership with key suppliers."	0.891
	SR2: "Our company relies on a reasonable few dependable suppliers who are evaluated and selected based on their capability and commitment to product and service quality and value for money."	0.912
	SR3: "We emphasize quality and delivery performance rather than price in selecting suppliers."	0.929
	SR4: "Our suppliers are actively involved in our new product development process."	0.882
	Strategic planning (SP)	
	SP1: "Our company sets and reviews our short and long-term goals through a comprehensive planning process."	0.857
	SP2: "In our company, strategic plans are linked to quality principles."	0.821
	SP3: "Our company has a written strategy covering business operations which is articulated and agreed upon by top management."	0.870
	SP4: "The mission of our company is communicated and supported by our staff."	0.878
SP5: "We always take into account (consider) donors' capability and other stakeholders' needs when we develop our plans, policies, and objectives."	0.759	
MO	Intelligence Generation (IG)	
	IG1: "We generate a lot of information related to market trends (e.g., regulations, technology, politics, and economy)."	0.933
	IG2: "We are fast to detect fundamental changes in our target market environment."	0.831
	IG3: "We periodically review the likely effect of changes in our business environment (e.g., regulation and economy)."	0.919
	Intelligence dissemination (ID)	
	ID1: "We disseminate all Information that can influence the way we serve our customers to the relevant personnel."	0.809
	ID2: "We often lose information about our customers in the system."	0.829
	ID3: "Information concerning competitors' activities often reaches the relevant personnel too late to be of any use."	0.888
	ID4: "Important information related to target market trends (e.g., regulation and technology) is often discarded as it makes its way along the communication chain."	0.872
	Responsiveness (ER)	
ER1: "We are fast to respond to important changes in our business environment (e.g., regulation and technology)."	0.915	
ER2: "We are fast to respond to significant changes in our competitors' price strategies in target markets."	0.814	
ER3: "We are fast to respond to competitive actions that threaten us in our target markets."	0.895	
OP	Operational performance (OPP)	
	OPP1: "Quality of our products/ services is high."	0.830
	OPP2: "The reliability of Our company products/ services is high."	0.886
	OPP3: "The company our products/ services deliver on time to customers."	0.901
	Employee performance (EP)	
	EP1: "Our company employees' commitment is high."	0.879
	EP2: "Our company employees' job performance is high."	0.881
	EP3: "Our company employees' absenteeism is low."	0.861
	EP4: "Our company employees' morale is high."	0.860
	EP5: "Our company employees' turnover rate is low."	0.849
	Innovation performance (IP)	
	IP1: "The technological competitiveness of the company is high."	0.905
	IP2: "The speed of new products/ services development is high."	0.881
	IP3: "The number of the company's new products that are first-to-market is high."	0.873
	Customer results (CR)	
	CR1: "Customer satisfaction has improved."	0.916
	CR2: "Customer retention has improved."	0.918
	CR3: "Customer complaints have decreased."	0.873
Social responsibility (SR)		
SOR1: "Protection of the environment in the company has developed."	0.977	
SOR2: "The company is actively involved in the community."	0.976	

Market and financial performance (MP)	
MP1: "Return on assets of the company has increased."	0.817
MP2: "Market share of the company has improved."	0.894
MP3: "Profits of the company have grown."	0.902
MP4: "Sales of our company have grown."	0.865



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