



TQM and Organizational Performance: A Mediating Role of Strategies for Continues Improvement: Evidence from Coffee Cooperative in Ethiopia

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Abstract

The purpose of this study was to examine total quality management practices and organization performance with the mediating role of strategies for continuous improvement. Besides that, the study aimed to bridge a gap in literature and knowledge of total quality management practices and organization performance with strategies for continuous improvement. The study employed an explanatory and descriptive research design and used a mixed approach. A survey was conducted by using self-administered and structured close-ended questionnaires which were distributed to respondents. Descriptive statistics and correlation statistical tools were used to examine the relationship between total quality management ingredients and organizational performance, and multiple regression analysis was used to measure the effects of independent variables on the dependent variable. The study adopted probability sampling technique, specifically a simple random sampling technique. Data was analyzed using Amos in SPSS. The correlation analysis was performed to identify the direction and the strength of the relationship between variables, whereas SEM (structural equation model) analysis was used to describe the causal effect between and among dependent and independent variables under investigation. Concerning SEM analysis the study found total quality management and strategies had positive and significant effects on organizational performance. It is recommended that firms should continually implement TQM and use strategies properly to improve performance.

Keywords: Total quality management (TQM), Quality and organizational performance, performance measurement, Critical Success Factors (CSFs) of TQM

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Introduction

Globally, manufacturing firms apply quality management practices mainly to meet customers' satisfaction. However, supply chain management is seen as a way of improving competitive performance by integrating the internal functions of a firm with the external operations of the suppliers, customers, and other members of the supply chain network (Hendijani & Saeidi Saei, 2020). This might lead to changes in the traditional structure of the organization. Supply chain management has shifted focus to the coordination and configuration of processes that are essential in manufacturing products on time and ensuring quality products and service delivery to customers. Quality aspects have become one of the most important factors in global competition today. Increasing demand by customers for better quality products in the market marketplace has encouraged many companies to provide quality products and services to compete in the marketplace successfully.

To meet the challenge of this global competition, many businesses have invested substantial resources in adapting and implementing quality management practices in their operations. Quality management is viewed as a strategy to meet or exceed customer's requirements and expectations. Quality management seeks excellence in all aspects of business through organization-wide continuous improvement, commitment by all, and customer focus. It is a firm-wide management philosophy of continuously improving the quality of the products, services, and processes by focusing on the customers' needs and expectations to enhance customer satisfaction and firm performance (Tuominen et al., 2023). (Affes & Jarboui, 2023), observed that the financial performance of organizations can be increased by improving quality performance. Their study showed that organizations whose principles relate to quality are guided by a focus on value created for customers. Organizational performance measures refer to the process of gathering, analyzing, and or reporting information regarding an individual, group, organization, system, or component on its outcome for decision-making. Moreover, performance is monitored through the model of Plan-Do-check-Act (PDCA) (Vuong & Nguyen, 2022).

This section is critical to the organization since it suggests to them whether there was a continuous improvement in terms of customer satisfaction, market share, productivity, cost reduction, profitability, and so forth. Total Quality Management is a description of the culture, attitude, and employee involvement to provide customers with products and services that satisfy their needs. Evidence shows that successful implementation of TQM benefits organizations by improving organizational performance, through incorporating TQM as a method to enhance product and service quality, it is considered very important to investigate the effect of total quality management on organizational performance. According to, (Yosef et al., 2023), quality management practices play a pivotal role in enhancing the performance of cement manufacturing firms. He stated the implementation of quality management practices in most manufacturing firms is done by managers who ensure a lean and efficient staff, strategic quality planning, leadership, customer focus, supplier quality management training, and knowledge and process management.

The cement industry plays a major role in improving living standards all over the world by creating direct employment and providing multiple cascading economic benefits to associated industries. Despite its popularity and profitability, the cement industry faces many challenges due to quality concerns and sustainability issues (Purvis et al., 2019). Thus, the study examined the effect of TQM on organizational performance with the mediation of strategies for continuous improvement to develop a model for applying TQM practices for better organizational performance, and to tackle a gap in the literature and knowledge regarding total quality management practice and its effect on organization performance. In recent decades total quality

management become a very familiar concept and many organizations are implementing TQM for continuous improvement. Empirical studies revealed that successful implementation of TQM benefited organizations by improving organizational performance in many dimensions like product and service quality, customer satisfaction, financial performance, and operation. As society becomes advanced economically, mature culturally, and knowledgeable educationally, society demands increased quality products and services. Therefore, in response to these challenges today a large number of manufacturing organizations are taking initiatives to implement TQM (Alawag et al., 2023). Product and Service failure is the problem that faces many organizations, quality products and services may not always be as intended by the organizations to the customers. The reasons behind these are no production system is perfect, employees make mistakes, systems break down and customers in the production process may cause problems for other customers.

The existing literature demonstrated in their studies that successful implementation of TQM benefited organizations through improving organizational performance in many dimensions, including leadership, customer focus, employee involvement adopting, survey method (Lepistö et al., 2024). Therese (Alsughayir, 2016), Conducted research entitled Total Quality Management and Performance: The Role of Organization Support and Co-worker Support, and found a strong and positive relationship between the extent of implementation of TQM practices and organization performance. The study also found that co-worker support and organization support moderated the relationship between TQM implementation and organization performance. Additionally, different research on total quality management has examined the relationships between Total quality management and organizational performance.

Impact of TQM on financial performance, findings established that TQM is positively related to financial performance (Zehir & Zehir, 2023). Specifically, various studies articulated the relationship between total quality management and organization performance in the African context and forwarded the findings. Investigated an empirical study on the effect of total quality management on industrial Performance in Nigeria, adopting survey methods, the finding indicated Total Quality Management substantially enhanced Industrial performance in the manufacturing sector. Conducted research in Kenya entitled Quality Management Practice and Organization Performance on Kenya cement Factories specifically Savannah cement Factory using descriptive research design by directing through resource-based theory method, the study found a direct and significant relationship between total quality management and organization performance.

Ethiopia's growth and transformation plan has enormous concern for quality, productivity, competitiveness, and existing capacity utilization in all productive sectors of the economy. Concerned with the industrial sector, it is aimed to enhance existing industries' capabilities in the adoption and imitation of total quality management philosophy to achieve productivity and quality improvement in manufacturing industries. To this end, the nation's attention is attracted to exerting massive effort in the dissemination of the management concept which is total quality management. Our country is a late adopter of total quality management. In this regard manufacturing Company adopted the concept of TQM practice and the employees and management of the company are practicing total quality management to boost customer service and enhance organizational performance. The prominent reason to conduct the research was that even though the company was practicing the total quality management practice to deliver quality products and services, but yet, there is a high degree of company customers and employees complaining so they won't get good service from the company and are not delighted with the product and service the company provide. This implies that there is a problem in implementing and exercising TQM practice in the company. So since today's market is dynamic and complex it is mandatory to update the business endeavor timely with current trends of technology to be competent in the global market.

Method

Thus the paper explores the factors that lead to customer complaints. Besides the above-discussed issues as far as the researcher's knowledge and information are concerned there is no study conducted previously on the effect of TQM and organizational performance using strategies as mediators on the case company and this leads to misunderstanding of the practice leads to a lack of knowledge and concept on this area. Thus this paper aimed to fill the location and literature gap, and add value to the understanding of TQM's importance in boosting organizational performance.

Hypothesis of the Study

H1: Strategies for continuous improvement have a statistically significant impact on organizational performance.

H2: Strategies for continuous improvement mediate the relationship between TQM and organizational performance.

H3: TQM practice has a significant impact on organizational performance.

Result and discussions

Literature Review

Theoretical foundation/ Quality Improvement Theory

Quality Improvement Theory postulates that a feature of quality management doctrine is that it places responsibility for manufacturing organizations squarely at the door of top management (Deming, 1986). The theory states that the management is responsible for the systems and that the system generates 80 percent of the problems in firms (Hill, 1995). Deming (1986) noted that no quality management system could succeed without top management commitment; the management invests in the processes, creates corporate culture, selects suppliers, and develops long-term relationships. Deming's Quality Improvement Theory provides businesses with a plan to eliminate poor quality control issues through effective managerial techniques. It's a fact that management's behavior shapes the corporate attitude and defines what is important for the success and survival of the firm. Hubert (2000) has detailed the theoretical approach of Deming (1986) concerning the quality management system, and it envisages the creation of an organizational system that fosters cooperation and learning to facilitate the implementation of process management practices. This, in turn, leads to the continual improvement of the processes, products, and services and helps to instill employee satisfaction. These are critical to promoting customer focus, and, ultimately, helping in the survival of any organization.

Different quality gurus and philosophers defined TQM differently concerning different perspectives. One of the most prominent features of the TQM literature is the absence of any uniform definition of TQM (Talib, 2012). According to Prajogo and McDermott (2005), TQM is a management model that aims to meet customer needs and expectations within an organization through continuous improvement of the quality of goods and services and by integrating all functions and processes within an organization.

Lakhe and Mohanty (1994) defined TQM as a continuous quest for excellence by creating the right skills and attitudes in people to make the prevention of defects possible and satisfy customers totally at all times. Juran (1999, p.337) one of the quality gurus defined TQM as a management approach that centered on quality within an organization, based on involving all its members and aiming at long-term success through customer satisfaction, and benefits to all members of the organization and society.

Critical Success Factors (CSFs) of TQM

Top Management Commitment

Top management commitment is a TQM factor that has been mentioned almost in all TQM literature as a critical success factor of TQM. Top management commitment represents an engine for mobilizing everyone in the organization and creates a conducive environment for the successful implementation of TQM. According to Aletaiby, Kulatunga, and Pathirage (2017), the essential task of the top management is to guarantee this transformation and ensure its commitment to the TQM activities.

Strategic Planning

Customer-driven quality, according to the principles of TQM, is a significant strategic structural concern that is essential to be fundamental to total organizational planning. Any organization that provides quality services can charge more for products or services, resulting in high customer satisfaction. Data shows that improvement in product or service quality has a stronger relationship to increases in market share and customer satisfaction as well (Bayazit et al., 2007).

Employee Empowerment

The success of TQM implementation is facilitated by employee empowerment and involvement in the company (Aletaiby, Kulatunga, & Pathirage, 2017). According to Juran (1999, p.423), Empowerment is a condition in which the employee has the knowledge, skills, authority, and desire to decide and act within prescribed limits.

Information Sharing

Successful implementation of TQM can be achieved by equipping the employees with information regarding the process and the customers. Prompt, sufficient, and pertinent data that are critical to the implementation and practice of TQM constitute information and analysis. In a TQM process, people need to communicate across organizational levels, functions, and locations to work out current problems, prevent new ones, and implement change. Measures for proactive prevention rather than reactive correction are employed to monitor quality in order to sustain a true customer focus (Sureshchandar, Rajendran & Anantharaman, 2010).

EMPIRICAL LITERATURE REVIEW

TQM, strategies for continuous improvement, and organizational performance

Current research trends indicate that firms must emphasize continuous improvement to develop quality products and services continually as well as reduce the cost to create customer satisfaction (Farida & Setiawan, 2022). Continuous improvement focuses on a product's customer service and centralized production process, creating achievement levels that constantly increase for performing current tasks correctly and improving them in the future (Javaid et al., 2021). According to (Haghani et al., 2023), continuous improvements require organizational cultures that give confidence to participants in innovating while minimizing panic along the way while providing themselves with effective tools. Continuous improvement strategies are internal to organizations which result in process changes, where a group of managers who wish to change how current operations occur (Nowell et al., 2017).

(Barker Scott & Manning, 2024) asserted that continuous enhancement cannot directly mediate with improvements in products as well as services due to a relationship presence connecting it with added measurements in quality management, specifically such as consumer emphasis along with collaboration. In summary, the research gap concerning continuous improvement in project performance is whether or not it is continuously identified and evaluated by customers and whether or not it is an element in TQM that contributes directly to project performance (Jong et al., 2019).

Strategies for continuous improvement and organization performance

Continuous improvement (CI) is a method for improving every facet of a company's operations and increasing competitiveness by developing a company's resources. The improvement can involve many goals producing products with zero defects or achieving 100 percent customer satisfaction but continuous improvement has the same basic principles irrespective of the set goals. These principles include the involvement of the company at all levels, finding savings by improving existing processes, not by investing more money, gathering data on company operations, and quantifying that data, which becomes the baseline against which improvements will be measured for continuous improvement. Continuous improvement most often involves creating a team that includes representatives from all areas of the company. The team first spends time learning about their company and other companies (benchmarking is common during this phase). The necessary quantitative data is created. The team then proposes management solutions and begins to implement those solutions. When that is achieved, follow-up mechanisms must be put in place that seek additional improvements as time goes by. The team might change members with time, but hopefully become an established and accepted part of the company even as its schedule changes. If the plans are executed as planned the team will achieve improved quality as a result of its initial efforts.

Continuous Improvement and Organizational Performance

Few empirical research papers have examined the indirect effect of TQM practices with different measures of organizational performance. However, the focus of TQM is on continuous process improvement within organizations to offer superior customer needs and provide value for their money. TQM considers an organization as an assemblage of combined processes that have to be continuously improved by integrating worker experiences and knowledge in accomplishing organizational objectives of attaining superior performance. That correct application of the TQM principle will provide a construction organization the required impetus to improve its overall performance, but research efforts have shown that the relationship between TQM and performance is indirect, while the impacts of TQM practices on different performance measures vary. This study, therefore, argued that the relationship between TQM and organizational performance will indirectly be enhanced by a strategy for continuous improvement.

TQM and organization performance

TQM seeks to create a distinct culture based on the efforts of all members of the organization to meet the customers' needs and desires at the lowest cost, effort, and time. This indicates that TQM has become important to organizations through reducing costs, increasing profits and productivity, increasing customer satisfaction, achieving competitive advantage and high returns. The application of TQM in institutions are required to obtain some international quality certificates, to give the organization a good reputation in eyes of external customers, as well as to develop a sense of unity of purpose, team spirit and mutual trust among individuals, in

addition to enhancing the sense of belonging to the work environment. Organizational performance is a comprehensive index reflecting the degree of realizing previously set goals. It is very significant to the study of the effectiveness and efficiency of business operations. The authors believed that highly educated, well-trained, and competent employees would have more capacity to generate added value to organizational performance. The emergence of quality plays a fundamental role to the degree that it has become a climax priority for many companies worldwide, to achieve their objectives and gain a competitive edge. Total quality management, therefore, assists organization increases their profits through incorporating the quality elements at each step hence avoiding the organization the burden of correcting completed products. This would mean that resources that had been allocated to do other work must be pulled back to repair the product. Organizations which had adopted TQM have improved their customer satisfaction level hence increasing organizational performance. TQM has enabled many firms which had adopted to compete competitively, in the market without fear, registering higher profits, and market share and cutting down on operating costs.

Conceptual Framework of the Study

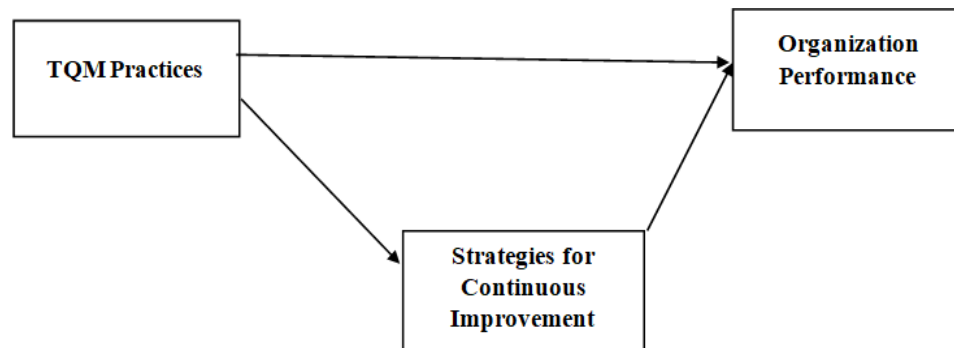


Figure 1: Conceptual framework

(Source: Adopted from R. Jimoh et al. (2018), with modifications)

RESEARCH DESIGN AND METHODOLOGY

Research Design and Approach

This study was conducted by using a mixed research approach; the quantitative research method is best suited for looking at cause and effect between and among variables, and testing theories and hypotheses (Muijs, 2010). The method used to explain relationships or phenomena is by collecting numerical data and analyzing based on mathematical methods. In addition to this, the study applied descriptive techniques through direct quotations of responses and facts.

Target Population and Sampling Technique

The target population of the study was composed of 13, cooperative unions found in the west Guji zonebule hora woreda whose total population was 5,250 members who are involved in the Coffee supply chain. In determining the sample size the paper used a probability sampling technique. From the probability sampling technique, simple random sampling techniques were applied. Simple random sampling was used to randomly select respondents from each stratum of the population. Data were collected from each group according to population proportion.

Sample size

To determine the sample size of the respondents the researcher used the following formula:

$$n = \frac{z^2(p * q)N}{e^2(N - 1) + z^2(p * q)}$$

Where: n- sample size, z- confidence interval, p- the proportion of success, q- the proportion of failure, N-number of the target population, standard error. Thus:

$$n = \frac{1.96^2(0.75 * 0.25)5250}{(0.05)^2(5250 - 1) + 1.96^2(0.75 * 0.25)}$$

n=287

DATA ANALYSIS

Validity and Reliability

Table 1 below clearly shows the summary of the reliability result test from the questionnaire. Furthermore, to obtain uni-dimensionality of constructs, the inter-item correlation for all the scale items was checked by using the confirmatory factor analysis; the values of the item to the total correlation of all items are greater than 0.3 here indicating that the items have a strong inter-item correlation with their constructs and then factor analysis is appropriate. As indicated in Table 4.2, the below correlation of all constructs revealed results between 0.381-0.637, from this, it can be understood that the construct has a good correlation.

Table1. Reliability result test from the questionnaire

Items	No of items	Cronbach's alpha point	Inter item correlation
TQM practices	16		
Top management commitment	4	0.760	0.441
Strategic Planning	4	0.713	0.381
Information Sharing	4	0.766	0.450
Employee Empowerment	4	0.777	0.469
Strategies for continuous improvement	6		
Quality improvement strategy	2	0.700	0.541
Organization development strategy	2	0.728	0.573

Appraisal strategy	2	0.778	0.637
Organization performance	6		
Employee performance	2	0.702	0.547
Financial performance	4	0.760	0.451

(Source: Survey Data: 2023)

The results of the factor analysis performed on TQM practices are reported in Table 4.3. The Kaiser– Meyer–Olkin (KMO) statistic and Bartlett test for sphericity (approx. chi-square: 310.523; df: 6; sig. 0.000) confirm the adequacy of the sample used for the factor analysis. Table2 Factor Analysis Test of KMO & Bartlett’s Test of Sphericity and Communalities for Total Quality Management.

Table 2. KMO and Bartlett’s test for TQM practices
KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.	.754
Bartlett's Test of Approx. Chi-Square	310.523
Df	6
Sig.	.000

(Source: data analysis 2023)

The current study showed the average extracted communalities test values of the factors was 0.60 of the recommended value as mentioned in Table 4.4.1, below. From this, it can be indicated that the data were suitable for factor analysis.

Table 4. Communality test for TQM practices

	Initial	Extraction
Top management commitment	1.000	.585
Strategic planning	1.000	.718
Information Sharing	1.000	.589
Employee empowerment	1.000	.508

Extraction Method: Principal Component Analysis.

The study extracted four factors Top Management Commitment, Strategic Planning, InformationSharing, and Employee Empowerment: these factors together explain 60.0% of the variance, as indicated in the table below.

Table 5. Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.400	60.005	60.005	2.400	60.005	60.005
2	.677	16.925	76.930			
3	.544	13.598	90.528			
4	.379	9.472	100.000			

Extraction Method: Principal Component Analysis.

(Source: Data analysis 2023).

Structural Model Assessment

To assess the structural model of the study, the following criteria were considered very essential for the model to be satisfactorily achieved. These criteria included (the R-square of endogenous latent variables, estimates for path coefficients, effect size (f^2), and the prediction relevance (Q^2 and q^2). The R-square is a measure of the predictive accuracy of a model by estimating the amount of variance explained in each of the endogenous constructs (Hair et al., 2021). The higher the R-square values, the greater the predictive ability of the model. The rule of thumb states that R-square values of 0.67, 0.33, or 0.19 for endogenous latent variables in the inner path model could be considered substantial, moderate, or weak.

The coefficient of determination, R-square, for this study, found 0.72 for the organizational performance endogenous latent variable as shown in Figure 4.1. This indicates that the two latent variables (TQM practices and strategies for continuous improvement) highly explained approximately 72% of the variance in organizational performance. TQM practices alone explained 42% of the variance in organizational performance. Following Sarstedt et al. (2014), the coefficient sizes, relevance, and significance of the relationships depicted by the structural model were examined. The model shows that strategies for continuous improvement had the strongest effect on organizational performance (0.50), followed by TQM (0.42). Therefore, it can be inferred that both TQM practices and strategies for continuous improvement are moderate predictors of organizational performance. As shown in Figure 4.1, all the paths were statistically significant at 95% levels of confidence; thus, all the manifest variables were significant in explaining the constructs included in the model. Critical assessment indicates that strategies for continuous improvement by organizations exhibit a higher direct effect on organization performance than TQM practices. However, when further analysis was undertaken, it became evident that strategies for continuous improvement acted as mediators between organizational performance and TQM practices; the researcher therefore estimated the total effects suggested by Sarstedt et al. (2014) as

$$\text{Total Effect} = \text{Direct Effect} + \text{Indirect Effect} \quad \text{Total effect} = 0.51 + 0.42 * 0.50 = 0.465$$

From the above equation, it can be seen that the total effects are less than the direct effect of TQM practices on organizational performance (0.51) but greater than the direct effect of strategies on performance. The next section will examine whether strategies for continuous

improvement mediate the relationship between TQM practices and organizational performance.

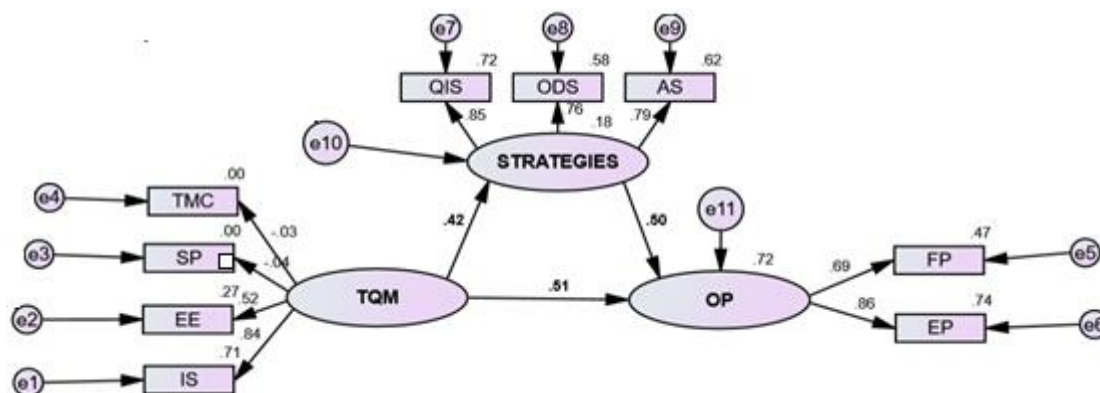


Figure 2. Structural regression model

(Source: Data analysis 2023).

Mediation analysis

Testing mediation effect using SEM requires significant correlations between the independent variable, the mediating variable, and the ultimate dependent variable (Haghani et al., 2023). In accordance of (Nitzl et al., 2016), technique, indirect effect should be higher than direct effect to indicate the mediator effect occurs in a structural modeling. The analysis revealed the finding of regression weight that TQM has a significant positive ($\beta = .394$, $p < .001$) direct effect on organizational performance. This indicates when TQM goes up by 1, organization performance approximately goes up by 0.394. So, this supports hypothesis 3 that the TQM has a significant impact on organization performance. Similarly, strategies have a significant effect on organizational performance ($\beta = .354$, $p < .000$). Additionally, strategies for continuous improvement have a significant impact on TQM ($\beta = .454$, $p < .000$). From this hypotheses 1 and 2 are also supported. Overall, the regression results support the conditions for mediation to be realized. It can be concluded that strategies mediate the relationship between TQM and organizational performance.

Table 7 Summary of regression weight
Regression Weights: (Group number 1 - Default model)

	Estimate	S.E.	C.R.	P
STRATEGIES - TQM	.454	.136	3.347	***
OP - TQM	.394	.123	3.194	.001
OP - STRATEGIES	.354	.074	4.772	***

(Source: Data analysis 2023).

Further analysis was performed to establish the significance level of the mediation effect. Therefore, hypothesis- 4 can be analyzed that examine the effect of mediator strategies on the relationships between TQM and organization performance. Hence, to determine the mediator effect of strategies, the model is run by SEM (AMOS). As a result, in the regression equation

without a mediator, the estimate of the causal path from TQM to organization performance was positively significant ($r=.51$; $p<.001$). In addition, the effects of strategies on TQM were statistically significant ($r=0.42$, $p<0.001$). The path diagram of Figure 2 above of the mediation model includes the standardized estimates (r) for the causal paths for the indirect ($r=.290$, $p<0.001$) and direct ($r=0.51$, $p<0.001$) effects of strategies on organization performance. Both estimated paths for the direct and indirect effect of strategies on organization performance were statistically significant but also the estimate of the direct effect ($r=.50$, $p<0.001$) of TQM on organization performance was statistically significant. The indirect effect of strategies on organization performance was .451. That is, due to the indirect (mediated) effect of strategies on organization performance that shows when strategies go up by 1 standard deviation, organization performance goes up by 0.451 standard deviation. This is in addition to any direct effect that TQM may have on organizational performance.

Table 7. Standardized total, direct, and indirect effects (coefficients)
Standardized Total Effects (Group number 1 - Default model)

	TQM	STRATEGIES	OP
STRATEGIES	.420	.000	.000
OP	.718	.495	.000

Standardized Direct Effects (Group number 1 - Default model)

	TQM	STRATEGIES	OP
STRATEGIES	.420	.000	.000
OP	.510	.495	.000

Standardized Indirect Effects (Group number 1 - Default model)

	TQM	STRATEGIES	OP
STRATEGIES	.000	.000	.000
OP	.208	.000	.000

(Source: Data analysis 2023).

In the course of analyzing the total effects, it appears that strategies for continuous improvement mediate the relationship between TQM practices and organizational performance. To establish this, the approach presented by (Tibbe & Montoya, 2022), was followed by first excluding strategies for continuous improvement from the model. The direct effect between TQM practices and organizational performance value was 0.51 and significant at a 95% confidence level. In estimating the full model, the corresponding results of bootstrapping generate 0.42, which is also significant at 95% confidence levels. The variance accounted for (VAF) was calculated using the following formula:

$$\text{VAF} = \text{Indirect effect} / \text{Total effect} \quad \text{VAF} = 0.51 + 0.208 - 0.42 = 0.29$$

$$\text{VAF} = 0.29 / 0.51 = 0.56$$

The result produced a VAF value of 0.451, based on the rule of thumb given by Hair et al. (2014), which stated that if $\text{VAF} > 80\%$, it is full mediation – $20\% < \text{VAF} < 80\%$; partial mediation and there is no mediation if $\text{VAF} < 20\%$. Hence, from the result, it can be inferred that strategies for continuous improvement partially mediate the relationship between TQM practices and

organizational performance. Further, the results showed an index ratio of 56% with a partial mediation effect of strategies, suggesting that without strategies, TQM could influence organizational performance. This statement is far from those (Fairchild & McDaniel, 2017), who stated that in the case of full mediation, the predictor variable loses its power to influence the dependent variable except through a mediator. Despite a full mediation, the index of mediation indicated that organization performance received 56% of the indirect effect from TQM through strategies, leaving 44% unaccounted for. Therefore, it can be presumed that the balance of 56% may be accounted for by other mediating factors not considered in this study that necessitate further investigation. Hereafter strategies were considered as mediators of the effect of TQM on performance, still exist but in smaller magnitude, therefore, potentially, strategies partially mediate the path between TQM and performance.

Table 8. Hypothesis testing
Regression Weights: (Group number 1 - Default model)

	Estimate	S.E.	C.R.	P
STRATEGIES - TQM	.454	.136	3.34	***
OP - TQM	.394	.123	3.19	.001
OP -STRATEGIES	.354	.074	4.77	***

***p-significant at $p < 0.01$. (Source: Data analysis 2023).

Hypothesis	P- value	Decision
Strategies for continuous improvement have a statistically significant impact on organizational performance.	Significant	Accepted
Strategies for continuous improvement mediate the relationship between TQM and organizational performance.	Significant	Accepted
TQM practice has a significant impact on organizational performance.	Significant	Accepted

(Source: Data analysis 2023).

Conclusion

The conclusions of the study, therefore, have varied managerial implications. The managers of the organizations need to assess the extent to which their strategies can improve or lead to continuous improvement. In line with this, managers will be able to promote the positive influence of TQM practices via quality and employee performance to achieve the main philosophy behind TQM. The implementation of these practices, together with strategies for continuous improvement, will lead to better quality performance of the organization. Based on this study, it is advocated that future studies should focus on the influence of culture on TQM practices since organizational culture affects organizational performance.

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