
QUALITY PAPER

Why total quality management fail in Lebanon: an auditor's investigation

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Abstract

Purpose – Understanding the factors hindering total quality management (TQM) implementation also identifies the obstacles to a successful TQM process. Accordingly, the article will guide people in charge of Lebanese organizations to benefit from acquiring an effective quality management transformation.

Design/methodology/approach – This research employs a sequential mixed-methods approach, incorporating qualitative insights from an interview with Mr. Mahmoud Lababidi, Ph.D., founder of IQS International, with quantitative data obtained through a 3-point Likert scale questionnaire distributed to TQM Auditors in Lebanon.

Findings – The findings highlight Lebanon's cultural and systemic challenges that hinder effective TQM implementation. The respondents considered quality management crucial to improving organizational performance and, by implication, supporting societal development. Nonetheless, significant barriers such as inconspicuousness in TQM, unfavorable government and lack of enforcement of TQM standards were mentioned as the prime reasons for TQM's failure.

Originality/value – This manuscript offers original insights into the specific cultural and systemic barriers to TQM in Lebanon, an area with limited prior research. The value lies in providing key factors that could lead to a failure in implementing such a process. These factors can help auditors overcome these barriers by foreseeing them for better TQM practices.

Keywords Total quality management, Innovation, Competitiveness, Organizational culture

Paper type Research article

Introduction

Total quality management (TQM) started in the United States in the 1980s as a response to the competitive environment in Japanese companies, especially in the automobile and technology field. However, due to the instability of companies and the danger from the contextual settings, organizations started to focus on being productive and competitive, so they started to implement quality management techniques to pursue differentiation and superiority (Yamada *et al.*, 2013).

Dean and Bowen (1994) reported that the emergence of TQM was a significant development in management practices and was also responsible for attaining competitive advantage. Although TQM positively correlates with performance, another study showed numerous benefits and various positive outcomes after the implementation (Lam *et al.*, 2011).

Yusuf *et al.* (2007) claimed that 20%–30% is the chance of improvement under the process of TQM; Burrows (1992) argues that 95% is the failure rate after initiating the TQM program. Furthermore, Bak (1992) reported that the TQM technique fails at an 80% rate to attain benefits, and Becker *et al.* (1994) claimed a failure rate between 60% and 70%. In addition, while total quality management was considered the third management tool for success in organizations, it dropped to 15th place by 2007 (Rigby and Bilodeau, 2007).

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Lebanon is one of the countries that followed the adaptation of TQM in the management process recently. Nevertheless, there still needs to be a Quality-dependent culture in Lebanon, but the need to keep up with international standards and regulations was the motive for this movement (Jbeily, 2022).

It is worth noting that information relating to the implementation of TQM in Lebanon is quite limited. However, the available information indicates that the implementation of TQM in Lebanon began in the late 20th century in the manufacturing and services sectors when companies realized the need for improving operational efficiency and customer satisfaction. At the same time, the role played by the Lebanese government in promoting TQM cannot be underplayed (Odigie *et al.*, 2015). In 2009, the government launched The Lebanese Excellence Award (LEA) to promote adoption of TQM in the country. The first instance of a formally recorded form of TQM in the country was within the education sector. The establishment of a Directorate General for Higher Education (DGHE) in 2002 aimed to oversee and manage the operations and initiatives within the private higher education sector, with a focus on regulation, supervision and coordination, and was the first instance of a formally recorded form of TQM in the country.

Although the advantages of TQM are well documented, numerous Lebanese organizations encounter persistent challenges in its implementation. This study examines the specific factors impeding the effective adoption of TQM in Lebanon, with a focus on cultural, organizational and systemic barriers. Instead of analyzing relationships among TQM constructs or assessing the impact of TQM on organizational outcomes, this research aims to identify and describe the obstacles that lead to implementation failure. The findings offer insights to support practitioners, auditors and policymakers in formulating more effective quality management practices tailored to the Lebanese context.

This study investigates the factors that hinder the effective implementation of TQM in Lebanon and identifies the primary obstacles contributing to failure. In contrast to research that primarily tests relationships among TQM variables, this work adopts an exploratory approach to examine the cultural, organizational and systemic barriers influencing TQM implementation in the Lebanese context. Drawing on evidence from quality management auditors, the study expands the limited body of knowledge on TQM challenges in developing countries and offers practical recommendations for organizations seeking to enhance their quality management practices. Therefore, is TQM aged, or should organizations assess the factors of failure to improve the process and ensure a better implementation?

Research questions

Below are the specific research questions that the study is set to address.

- (1) What is the nature and scope of TQM?
- (2) What are the factors hindering TQM implementation in Lebanon?
- (3) What are the obstacles to a successful TQM process?

Literature review

TQM is a management framework that aims to involve employees at all levels of an organization, from frontline workers to top executives, to build long-lasting success through a focus on continual quality improvement and delivering customer satisfaction (Finney, 2021). TQM seeks to engage all employees in identifying and breaking down barriers to quality through an ongoing process of assessment and improvement. When appropriately implemented with commitment from leadership and buy-in from staff, TQM can optimize business processes and drive better outcomes. However, gaining that organization-wide

commitment requires addressing potential obstacles that could undermine a quality management system's full and effective adoption (Younis *et al.*, 2022).

Implementing a TQM system can lead to several significant outcomes, according to Antunes *et al.* (2021).

The primary role of the literature review is to show the factors or obstacles that hinder TQM in previous studies and to shed light on how cultures affect TQM's successful implementation in general. In the upcoming steps, we will discuss the special factors in Lebanon that hinder a correct implementation of TQM, which will give multiple perspectives on how Lebanon's culture contributes to the failure of such implementation.

TQM obstacles

The literature review on obstacles to TQM implementation clearly shows that organizations must thoroughly assess any potential problems before embarking on a TQM program to avoid the entire system's later failure (Permana *et al.*, 2021). If potential issues are not identified and addressed early, TQM efforts are highly likely to fail in achieving their goals. These issues include having an organizational culture that conflicts with TQM principles, insufficient collaboration between departments, excluding employees from the decision-making process, inadequate training programs, a lack of strong leadership commitment to change, and insufficient time dedicated to thorough training and education for all stakeholders. Addressing these challenges upfront is crucial to ensuring the success of TQM initiatives (Bielić *et al.*, 2020).

Mohsen Alawag *et al.* (2023) carried out a significant investigation that looked into the challenges of TQM implementation; they used factor analysis (FA), bringing together various obstacles as one thing to have them integrated into a few key underlying factors. It is a statistical technique that helps to determine patterns and reduces many variables to lesser imaginary ones called factors. The main drivers behind these 21 potential barriers were lack of leadership, a deficiency in employee training and development, and poor planning. Such results show a failure to educate employees about new TQM procedures and roles, which can render implementation unsuccessful (Mohsen Alawag *et al.*, 2023). Similarly, Bielić *et al.* (2020) argued that their study was hindered by a lack of leadership, wrong training and poor planning while examining typical impediments to TQM implementation. It is evident from these findings that organizations should directly deal with such concerns as leadership, training, or planning.

Naidoo and Govender (2023) have also critically examined barriers to implementing TQM through their subsequent significant related work investigating the top 5 most influential obstacles affecting organizations in their sample. The analysis under this approach identified that lack of leadership, employee training, no planning, insufficient customer focus and a lack of resources were also essential obstacles. Essentially, such findings repeated previous studies' main anxieties, regarded as primary inhibitions for realization. Bielić *et al.* (2020) emphasized leadership, training and planning.

Several studies have identified common issues leading to TQM program failures, with the external environment and organizational culture being among the most critical factors to consider (Khalil and Muneenam, 2021).

Organizational culture and TQM implementation

Since the early 1990s, scholars have discussed how organizational culture can impact the successful implementation of TQM. TQM requires a significant cultural shift from a traditional, top-down management style to one focused on continuous process improvement. Companies with cultures that are more open to change generally find it easier to adopt TQM practices.

Lack of resources, lack of customer focus, and inadequate communication were also seen as obstacles, lack of employee participation, executive backing and strategic planning were

consistently judged to be the most impactful reasons TQM initiatives have not always delivered the desired outcomes (Damini, 2023).

Another issue is that the impact of culture, geographic region, and different organizational functions requires more attention. This will be briefly summarized from the literature of previous studies as follows. Clavijo-Buritica *et al.* (2023), based on a study of 600 companies in 20 countries, identified an effect of socio-economic context on management approaches. This means a TQM practice may be considered adequate in one country rather than another, which confirms what Fonseca *et al.* (2021) suggested: quality management is not easily transferred from one culture to another.

Magd and Karyamsetty (2020) argued that there is a need for research and studies that facilitate the planning and implementation of TQM management tools, especially among developing nations. The study points out that developing countries are known for imitating strategies, not planning and creating new ones. Beer (2003) also noticed that copying one country's strategy to another will not assure the success of implementing such an approach.

On the same note, there are still valuable lessons learnt from the implementation of TQM among several nations across the globe. For instance, the successful implementation of TQM in Brazil highlights the significance of ensuring adaptability and innovation through well-structured framework of leadership commitment (Yamada *et al.*, 2013) while the implementation of TQM in Malaysia highlights the need for a robust framework of employee involvement (Mohsen Alawag *et al.*, 2023).

While the existing studies provide valuable insights into the global challenges of TQM, this research specifically focuses on how these issues manifest in the Lebanese context. In Lebanon, cultural, organizational, and systemic factors may influence the outcomes of TQM implementation in unique ways. Although the reviewed literature has extensively examined various challenges and shortcomings in TQM that can lead to its failure in different settings, this study aims to investigate the factors specific to Lebanon that may either align with or differ from the globally identified issues.

Methodology

This research employs a sequential mixed-methods approach, incorporating qualitative insights from an interview with Mr. Mahmoud Lababidi, Ph.D., founder of IQS International, with quantitative data obtained through a 3-point Likert scale questionnaire distributed to TQM Auditors in Lebanon.

Interview

Participant selection. The participant for the interview was Mr. Mahmoud Lababidi, a pioneer in the quality management business, founder of IQS International, a multinational corporation with headquarters in Lebanon and operating in the United States, the United Kingdom, Ukraine, Egypt, Cyprus, Iraq, Canada, Syria and the UAE (an exceptional qualification in the Lebanese context). It is essential to note that the study required an individual with robust knowledge in the operation of TQM across several countries to help in realizing its goals and objectives. This explains why Mr. Mahmoud Lababidi was selected as the sole participant for the interview.

Interview procedure. An in-depth semi-structured interview was conducted with Mr. Lababidi to identify reasons for TQM failures in Lebanon. Mr. Lababidi provided insights into 20 reasons why TQM initiatives may encounter challenges within the Lebanese context. The interview was conducted face-to-face at a mutually agreed location and was recorded with Mr. Lababidi's consent for subsequent transcription and analysis.

Data analysis. The interview transcript was analyzed to identify recurring themes and patterns among the reasons provided by Mr. Lababidi. Key themes and reasons for TQM failures were extracted, providing a qualitative foundation for understanding the phenomenon.

Quantitative phase

Questionnaire development. Based on the insights obtained from the qualitative interview, a Likert scale questionnaire was designed to quantitatively assess the perceived significance of the identified reasons for TQM failures in Lebanon. The questionnaire consisted of 20 items corresponding to the reasons provided by Dr Lababidi, with response options on a 3-point Likert scale: Agree, Neutral, Disagree.

Participant selection. The questionnaire was distributed to a selected sample of 100 TQM Auditors in Lebanon, chosen through purposive sampling to ensure representation from diverse backgrounds and organizations involved in quality management practices. The estimated number of auditors in Lebanon is less than 500, which explains why 100 participants were deemed enough in that population. The response rate is 100% as they all agreed previously to be part of the study. Lakens (2022) points out that studies need at least 9 interviewees to hit the saturation point, but this might vary depending on the nature of the study. Also, studies note that there is no specific guideline for deciding the maximum sample size for qualitative studies. It is therefore the discretion of the researcher to determine a sufficient sample size sufficient to hit a saturation point.

Questionnaire administration. The questionnaire was administered electronically using Google Forms, allowing for efficient data collection and ensuring anonymity of respondents. Participants were provided with clear instructions regarding the Likert scale response format and the importance of providing honest and thoughtful responses.

Data analysis. Quantitative data from the Likert scale responses were analyzed using the R programming language and SPSS. Descriptive statistics, such as frequencies and percentages, were computed to summarize the distribution of responses for each item. Inferential statistics, exploratory FA, eigenvalues, Varimax rotation, positioning analysis and ranking of variables.

Ethical considerations. Ethical guidelines were followed throughout the research process, including obtaining informed consent from participants, ensuring confidentiality of responses, and adhering to data protection regulations. These considerations were approved by the Jinan University ethics review board, under the issue number 120/2024.

Results

Qualitative phase

After interviewing Dr Lababidi, the general question was: what factors led TQM to fail in Lebanon? Most of the answers matched the literature review above, which are the lack of planning, management commitment and employee involvement. However, Dr Lababidi highlighted 20 factors listed and gathered through the interview.

Family company: Implementing a TQM plan in a family organization is tricky because there will be no real accountability of power, negatively impacting the program and leading to failure. The majority of businesses across the country have close family links, which impacts power relations among stakeholders.

Emotionally directed: Lebanon's management and culture are well-known to be emotionally driven, which blocks the way to making tough decisions that could lead to a better quality in the organization and in an effective way.

The absence of a Quality manager and department: Dr Lababidi stated that most Lebanese companies have no Quality manager or department; meanwhile, it is delegated to the HR department or monitored by one of the directors in the organization.

Top management commitment: Instead of solely focusing on providing financial, labor, and other resources for the TQM process, success relies on the active collaboration of everyone in the organization – from top management to employees at all levels.

The unsupportive government: The government needed to set strategies to help the organization implement the TQM program. In Lebanon, there is no significant support from the government yet in this field.

Nonachievable targets: There is no one-year target for TQM in the organizations, which means there is nothing evident to achieve, and most of the targets given by the organizations cannot be achieved.

Lack of Traceability: A product or service should be traceable from the initial supplier to the final seller until it reaches the customer. However, in Lebanon, there is a lack of traceability for imported products, which poses a significant issue, as it results in zero accountability if something goes wrong.

No obligatory standards: There is LIBNOR that helps in putting standards for TQM, but till now, it has done standardization for a small number of products and services, so companies are left to find standards for every single product and service due to the lack of help from the government.

Copying Standards from other cultures: This is one of the riskiest practices an organization can adopt, particularly in Lebanon, where strategies are often copied rather than innovated; copying has a rate of 60% failure (Beer, 2003).

Lack of gap analysis: Using gap analysis, we can determine what strategies we can use for every organization and implement them. Lebanese organizations will feel improvements faster by using this antecedent plan.

Lack of job safety: Auditors said that TQM has many victims when it is implemented; as discussed before, TQM aims to enhance productivity and quality to increase customer satisfaction effectively and efficiently.

Short-term oriented culture: Lebanon, as a small country, always looks for fast profit and returns and intends to see returns immediately after the TQM implementation; expecting immediate results and perceiving early costs as losses, while the benefits typically emerge in the long run.

Personal-oriented: This is one of the issues that depends on the culture of the organization, while the top management thinks that they are the only ones who make decisions and plan and evaluate, without giving the employee the right to be involved in the decision-making or planning or even organizing the TQM process.

Lack of training and development: For a better implementation of TQM, organization initiate a training and development center or department and try to benefit from outsourcing by bringing specialists, especially in the quality management issue.

Nonmember of IAF: Lebanon still needs to become a member of the international Accreditation Federal and needs a council board for quality management.

Outsourcing rather than employing: Organizations think they can outsource for a specialist in TQM for a while, so this consultant can plan, organize, do the process, build up a system, train employees and finally let him go. This is considered a deadly mistake for the organization; as discussed above, there must be a quality director and department, not delegating it to a senior employee or another director.

The government set no specific rules: until now, no law says that if an organization does not follow quality issues in the food or medical industry, then the government could sue this firm.

TQM is a corrective action: In Lebanese culture, TQM is viewed primarily as a corrective action, rather than a proactive approach to preventing mistakes before they occur. This misconception hinders effective implementation and can lead to the failure of the entire process. Correcting this perception is essential for successful TQM adoption.

Lack of educational culture: Lebanon needs an educational culture for TQM; Many studies have shown that the higher the level of educational culture, the higher the rate of successful implementation of TQM.

No commitment to an ethical manner: Bribery and corruption are two reasons TQM fails, especially in the public sector. When there is a conflict of interest between employees who should deliver a product or service to another party, the whole organization will fail the TQM program.

Quantitated phase

An interview is conducted to choose the survey questions; after that, the survey is organized using a 3-point Likert scale, which is essential to narrow the range of responses, focusing on clear options – agree, disagree or neutral. This approach minimizes ambiguity and ensures more definitive and reliable answers by avoiding the dilution of certainty that could arise from having a broader spectrum of choices. To evaluate the dependability of the data collection tools utilized in the primary investigation, a pilot study was carried out. With a smaller, more representative sample of participants in these initial stage 30 participants, the researchers were able to evaluate the assessment instruments’ long-term stability and consistency.

Pilot study

Table 1 show the TQM Scale’s Cronbach alpha value of 0.744 suggests that there is a respectable degree of internal consistency among the scale’s 20 components. Higher Cronbach’s alpha values (between 0 and 1) suggest stronger reliability. For psychology and social scientific research, a number above 0.7 is typically regarded as acceptable, indicating that the TQM Scale items have sufficient correlation and measure the same underlying construct.

Overall reliability

Table 2 show the overall reliability of Cronbach’s alpha (0.86). Cronbach’s alpha indicates that the scale has an overall dependability of 0.86. This suggests a high degree of internal consistency, indicating a strong correlation between the scale’s items and their measurement of the same underlying construct.

Continuity in the event of an item drop

The table also illustrates how removing a particular item from the scale may affect Cronbach’s alpha. In the range (0.85–0.87): If any item is removed, the Cronbach’s alpha values fall between 0.85 and 0.87. This implies that no single item considerably reduces the scale’s overall reliability. Every piece makes a significant contribution to the internal coherence. In conclusion, the scale has a high Cronbach’s alpha value of 0.86 and great internal consistency. Every item is valuable and adds to the scale’s overall reliability since the reliability is consistent across the board. Removing any item does not significantly increase dependability, indicating that the scale is well-made and appropriate for measuring the intended construct.

Descriptive statistics

Do you currently work in a quality management department?

According to the data, 94% of the respondents are actively involved in quality management. This is a significant majority. This high percentage can suggest that quality management is a common function within the organizations represented in the survey.

What is your level of experience in the field of quality management?

The majority of respondents (72%) have between 1 and 6 years of experience in the field of Quality Management, with 41% falling into the 4–6 years category. This suggests that most of

Table 1. Reliability test (pilot study)

	Reliability statistics Cronbach's alpha	Items
TQM scale	0.744	20
Source(s): Authors’ own work		

Table 2. Overall reliability

Reliability test	Cronbach's alpha	Standardized alpha
Overall reliability	0.86	0.87
95% confidence boundaries	Lower: 0.82, Upper: 0.90	Lower: 0.82, Upper: 0.90
<i>Reliability if an item is dropped</i>		
Lack of traceability	0.86	0.88
Unsupportive government	0.85	0.86
No obligatory standards	0.86	0.87
Family organizations	0.87	0.88
Short term-oriented culture	0.87	0.88
Lack of gap analysis	0.86	0.87
The absence of quality manager and department	0.85	0.86
Lack of educational culture	0.85	0.86
No commitment to ethical standards	0.85	0.86
Lack of job safety	0.85	0.86
Personal oriented	0.85	0.86
Lack of training and development	0.85	0.86
Nonmember of IAF	0.86	0.87
Outsourcing rather than employing	0.86	0.87
TQM is a corrective action, Lebanon does not believe in	0.85	0.86
Government not setting clear rules	0.85	0.86
Nonachievable targets	0.85	0.86
Top management commitment	0.85	0.87
Copying standards from other cultures	0.85	0.86
Emotionally directed	0.86	0.87
Source(s): Authors' own work		

the participants have a moderate level of experience in Quality Management, indicating that they are likely familiar with standard practices and processes in the field.

Level of education

The results represent the level of education of the participants, 52% hold a bachelor’s degree, 1% have a BS3 and 40% hold a master’s degree, this indicates a high level of education among the respondents, with many likely pursuing or holding advanced roles that require specialized knowledge, 7% have attained a PHD, reflecting the presence of highly educated individuals, likely involved in research, academia or high-level consultancy within their fields.

Do you consider quality management as an important field for the development of Lebanese society?

Where 97% of the participants said yes. This reflects the importance of QM in Lebanon.

The causes of total quality management (TQM) failures in Lebanon

The information supplied reflects respondents’ opinions about what factors contribute to TQM failures in Lebanon. In three categories—“Agree,” “Neutral” and “Disagree” – the frequency and percentage of replies are displayed in Table 3.

Lack of Traceability: According to a sizable majority (88%) of respondents, TQM failure in Lebanon can be attributed to a lack of traceability. Merely 11% of respondents are in disagreement, and only 11% are indifferent.

Unsupportive Government: The majority, 66%, concur that a government that is not supportive contributes to TQM failure. Nonetheless, 30% are indifferent, indicating considerable ambiguity or divergent viewpoints. Just 4% are not in agreement.

Table 3. Likert scale

Please indicate your level of agreement with the following statements regarding the causes of total quality management (TQM) failures in Lebanon		Agree	Neutral	Disagree	Total
Lack of traceability	Frequency	88	11	1	100
	Percent	88.0	11.0	1.0	100.0
Unsupportive government	Frequency	66	30	4	100
	Percent	66.0	30.0	4.0	100.0
No obligatory standards	Frequency	66	32	2	100
	Percent	66.0	32.0	2.0	100.0
Family organizations	Frequency	17	23	60	100
	Percent	17.0	23.0	60.0	100.0
Short-term oriented culture	Frequency	51	33	16	100
	Percent	51.0	33.0	16.0	100.0
Lack of gap analysis	Frequency	59	34	7	100
	Percent	59.0	34.0	7.0	100.0
The absence of quality manager and department	Frequency	75	22	3	100
	Percent	75.0	22.0	3.0	100.0
Lack of educational culture	Frequency	71	22	7	100
	Percent	71.0	22.0	7.0	100.0
No commitment to ethical standards	Frequency	67	31	2	100
	Percent	67.0	31.0	2.0	100.0
Lack of job safety	Frequency	58	31	11	100
	Percent	58.0	31.0	11.0	100.0
Personal-oriented	Frequency	35	51	14	100
	Percent	35.0	51.0	14.0	100.0
Lack of training and development	Frequency	74	22	3	99
	Percent	74.7	22.2	3.0	100.0
Nonmember of IAF	Frequency	77	19	3	99
	Percent	77.8	19.2	3.0	100.0
Outsourcing rather than employing	Frequency	51	27	22	100
	Percent	51.0	27.0	22.0	100.0
TQM is a corrective action Lebanon does not belief in	Frequency	69	24	7	100
	Percent	69.0	24.0	7.0	100.0
Government not setting clear rules	Frequency	73	22	5	100
	Percent	73.0	22.0	5.0	100.0
Nonachievable targets	Frequency	64	34	2	100
	Percent	64.0	34.0	2.0	100.0
Top management commitment	Frequency	64	27	9	100
	Percent	64.0	27.0	9.0	100.0
Copying standards from other cultures	Frequency	71	20	9	100
	Percent	71.0	20.0	9.0	100.0
Emotionally directed	Frequency	54	18	27	99
	Percent	54.5	18.2	27.3	100.0

Source(s): Authors' own work

No obligatory Standard: Likewise, 66% concur that TQM failure is a result of the lack of mandatory standards. While 2% disagree, a slightly bigger share (32%) is neutral.

Family Organizations: Of the items surveyed, 60% disagree that family organizations are a factor in TQM failure. This item has the highest level of disagreement. Just 17% concur, while 23% are unsure.

Short-Term Oriented Culture: The majority of respondents (51%) are in agreement that a culture that prioritizes short-term goals contributes to TQM failure, whereas 33% are indifferent and 16% disagree.

Lack of Gap Analysis: Of those surveyed, 59% concur that a cause is a lack of gap analysis, with 34% being neutral and 7% disagreeing.

Absence of Quality Manager and Department: A sizable majority (75%) concur that TQM failure can be attributed to the lack of a quality manager and department. Merely 22% express neutrality, while only 3% disagree.

Lack of Educational Culture: Of the respondents, 71% concur that TQM failure is a result of a lack of educational culture, 22% are neutral, and 7% disagree.

No Commitment to Ethical Standards: 31% of respondents are neutral, 2% disagree and a sizable majority (67%) concur that TQM failure is a result of a lack of commitment to ethical standards.

Lack of Job Safety: A sizable neutral group (31%) and 11% disagree with the smaller majority (58%) who believe that a lack of job safety is a contributing factor to TQM failure.

Personal-Oriented Approach: Here, opinions differ considerably; just 35% of respondents said that a personal-oriented approach is a factor in TQM failure. 51% of respondents are neutral, while 14% disagree.

Lack of Training and Development: A sizable majority (74.7%) concur that one of the reasons TQM fails is a lack of training and development. Fewer people (22.2%) are indifferent, and only 3% disagree.

Nonmembership in IAF: The vast majority of respondents (77.8%) concur that a lack of IAF membership is a factor in TQM failure. 3.3% disagree, while 19.2% are neutral.

Outsourcing Rather Than Employing: opinions are more split, with 51% believing that TQM failure is caused by outsourcing rather than hiring, 27% being indifferent and 22% opposing.

TQM as a Corrective Action: While 24% and 7% of respondents are neutral and disagree, the majority (69%) concur that the idea that TQM is only a corrective activity is a contributing factor to its failure.

Government Not Setting Clear Rules: 73% of respondents strongly believe that TQM failure is caused by the government's inability to establish clear regulations, with 22% remaining neutral and 5% disagreeing.

Nonachievable Targets: Only 2% of respondents disagree, while 34% remain indifferent and a sizable majority (64%) concur that nonachievable aims contribute to TQM failure.

Top Management Commitment: While 27% of respondents are neutral and 9% disagree, the majority (64%) believe that top management commitment is crucial.

Copying Standards from Other Cultures: A sizable majority (71%) concur that TQM failure is caused by replicating standards from different cultures, with 20% remaining neutral and 9% disagreeing.

Emotionally Directed: Opinions vary, with 54.5% of respondents thinking that having an emotionally directed approach leads to TQM failure. 18.2% are indifferent, while a sizable 27.3% disagree.

Exploratory factor analysis

According to FA, the observable test/item scores are influenced by multiple underlying (latent) factors. Put otherwise, a test's underlying features may be multifaceted.

Researchers frequently assume what characteristics each question or subtest will measure when developing a new measure. The test is considered to have good factorial validity if the items do, in fact, load on several factors in the manner that is suggested.

Exploratory factor analysis (EFA) test in this study is not intended to reduce the original 20 factors being examined; instead, its purpose is to highlight the relative importance of each factor in understanding and addressing the challenges to the TQM process. By analyzing how these factors group and contribute to the overall framework, the EFA provides valuable insights into their significance. This allows organizations to design a comprehensive and targeted plan that prioritizes managing the specific obstacles to TQM failure. Rather than diminishing the scope of the study, the EFA ensures that each factor's role is acknowledged and integrated into strategies for improvement, making it a pivotal tool for informed decision-making.

Eigenvalues

Table 4 show how much of the total variance each factor accounts for. Since they account for more variance than a single observed variable, factors with eigenvalues larger than one are usually kept in the model. According to the “Kaiser’s rule” or eigenvalue technique, there could be five optimal factors. We can infer from the scree plot that there are three to five components. Just two elements are being revealed via parallel analysis.

Scree test

First Eigenvalue (6.6339115): The highest eigenvalue (6.63) indicates that the first factor or component is the most significant in explaining the variability in the data presented in Figure 1.

Table 4. Total variance explained by principal components

Number of components	Value
1	6.6339115
2	1.6383015
3	1.4594970
4	1.2878402
5	1.1350146
6	1.0129310
7	0.9377604
8	0.8056159
9	0.6733364
10	0.6475095
11	0.5627502
12	0.5455117
13	0.4924048
14	0.4637981
15	0.3860808
16	0.3143193
17	0.2862890
18	0.2563115
19	0.2484441
20	0.2123724

Source(s): Authors’ own work

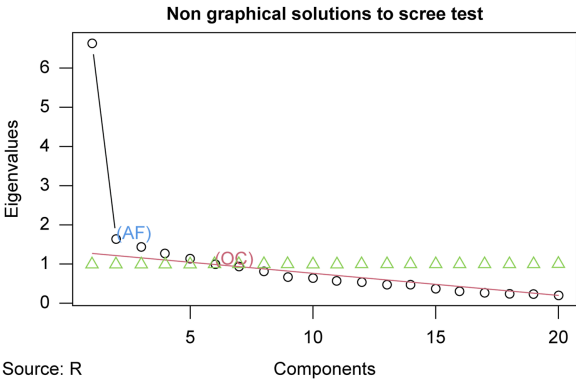


Figure 1. Scree test

Subsequent Eigenvalues: The next eigenvalues decrease gradually, indicating that each successive factor explains less variance than the one before it. In this case, the second factor has an eigenvalue of 1.64, explaining significantly less variance than the first factor.

-Eigenvalues <1: The values decrease below 1 beginning with the sixth eigenvalue (1.0129310). Eigenvalues less than one, which is frequently used as a criterion to decide how many factors to keep in an EFA, generally imply that the factor explains less variance than a single variable.

Dimensionality Reduction: Based on the eigenvalues, you may decide to retain only the factors with eigenvalues greater than 1, as they contribute significantly to explaining the variance. This approach is guided by the “Kaiser criterion,” which is commonly used in FA.

Total Variance Explained: The first few factors with the highest eigenvalues are likely to explain most of the variance in your dataset. As the eigenvalues decrease, the contribution of each factor becomes less meaningful.

In general, the results provide insight into how the variance in the dataset is distributed across different factors or components. Factors with higher eigenvalues should be prioritized as they explain more variance, while those with eigenvalues below 1 may be less important and potentially excluded in further analysis.

Varimax rotation

A method used in component analysis to improve the interpretability of the results is varimax rotation. By maximizing the variation of squared loadings of a factor across variables, varimax rotation makes this simpler and produces a clearer structure where each variable tends to load weakly on some factors and strongly on others.

Table 5 organizes the factor loadings for each variable across different factors. The loading values indicate the strength of the association between each variable and the factor it is associated with. Typically, higher loadings (e.g. above 0.3 or 0.4) suggest that the variable is strongly associated with that particular factor.

Table 5. Factor analysis

Variable	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6
The absence of quality manager and department	0.53	0.32		0.37		
No commitment to ethical standards	0.53			0.32		
TQM is a corrective action Lebanon does not belief in	0.64			0.33		0.38
Government not setting clear rules	0.55					0.42
Nonachievable targets	0.53					
Top management commitment	0.62					
Copying standards from other cultures	0.80	0.31				
Unsupportive government	0.34	0.60				
No obligatory standards		0.75				
Lack of gap analysis		0.54				
Lack of job safety			0.68			
Personal oriented			0.72			
Lack of educational culture	0.35			0.87		
Family organizations					0.88	
Lack of traceability						
Short-term oriented culture						0.41
Lack of training and development	0.49	0.31	0.35			
Nonmember of IAF		0.39				
Outsourcing rather than employing			0.39			
Emotionally directed	0.43					
Source(s): Authors' own work						

Table 6 shows the SS Loadings, Proportion Var and Cumulative Var.

SS Loadings: This represents the sum of squared loadings for each factor, which indicates the amount of variance in the variables explained by each factor.

Proportion Var: The proportion of total variance explained by each factor.

Cumulative Var: The cumulative proportion of variance explained up to each factor.

In this analysis, six factors explain a cumulative variance of 53% of the total variance in the dataset. The p -value (0.885) suggests that retaining six factors is sufficient, given the Chi-square test.

Positioning analysis: multidimensional scaling

A statistical method called multidimensional scaling (MDS) is used in positioning analysis to show how different objects or things compare or differ, usually in two or three dimensions.

Figure 2 shows the correlation between variables, where the majority are correlated negatively in the positioning of two axes.

Ranking of variables

Table 7 presents the ranking of variables based on their scores, calculated using SPSS. To further enhance the clarity and visualization of this ranking, we utilized the R language, as demonstrated in Figure 3, which provides a more streamlined and organized depiction of the variables in a single figure. The ranking variable test is essential for providing a structured plan for stakeholders in the quality management field to address factors that could hinder the implementation of TQM. By prioritizing these obstacles – from the most agreed upon to the least – based on feedback from 100 auditors, the study leverages the expertise of professionals who are deeply involved in the practical aspects of quality management. These auditors' insights help to identify and rank challenges systematically, offering a clear roadmap for

Table 6. Total variance

	Factor1	Factor2	Factor3	Factor4	Factor5	Factor6
SS Loadings	3.51	1.92	1.63	1.50	1.14	0.84
Proportion Var	0.18	0.10	0.08	0.07	0.06	0.04
Cumulative Var	0.18	0.27	0.35	0.43	0.49	0.53

Source(s): Authors' own work

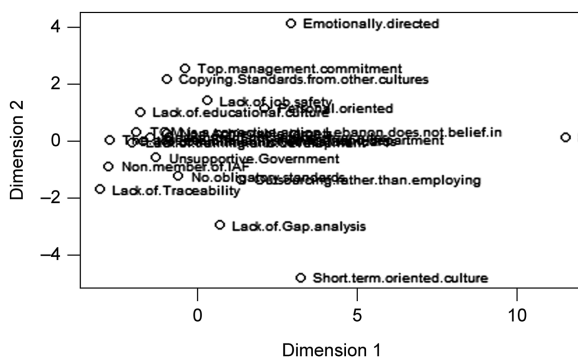


Figure 2. MDS plot of factors

Table 7. Ranking of variables

Factor	Score
Lack of traceability	2.875000
Nonmember of IAF	2.760417
Absence of quality manager and department	2.729167
Lack of training and development	2.708333
Government not setting clear rules	2.666667
Lack of educational culture	2.656250
No commitment to ethical standards	2.645833
No obligatory standards	2.625000
Unsupportive government	2.614583
TQM is a corrective action; Lebanon does not believe in	2.614583
Nonachievable targets	2.614583
Copying standards from other cultures	2.604167
Top management commitment	2.531250
Lack of gap analysis	2.500000
Lack of job safety	2.489583
Short-term oriented culture	2.354167
Outsourcing rather than employing	2.312500
Personal oriented	2.250000
Emotionally directed	2.250000
Family organizations	1.552083
Source(s): Authors' own work	

organizations to focus their efforts on overcoming the most significant barriers to successful TQM implementation.

High-impact factors

Lack of Traceability (2.875) – This factor has the highest score, indicating that a significant lack of traceability is a major concern. Traceability is crucial for ensuring quality and accountability, so its absence can severely impact organizational effectiveness.

Nonmember of IAF (2.760) – Being a nonmember of the International Accreditation Forum (IAF) suggests a lack of formal accreditation, which may affect credibility and quality assurance.

Absence of Quality Manager and Department (2.729) – The absence of dedicated quality management roles and departments signifies a weak focus on quality control, which can lead to inconsistent standards and practices.

Lack of Training and Development (2.708) – Insufficient training and development opportunities can hinder employee performance and organizational growth.

Government Not Setting Clear Rules (2.667) – Unclear or undefined governmental rules can create confusion and hinder effective regulation and compliance.

Moderate impact factors

Lack of Educational Culture (2.656) – A deficiency in educational culture implies limited emphasis on continuous learning and improvement.

No Commitment for Ethical Standards (2.646) – Lack of commitment to ethical standards may lead to unethical practices and damage the organization’s reputation.

No Obligatory Standards (2.625) – Absence of mandatory standards can result in inconsistent practices and a lack of quality assurance.

Unsupportive Government (2.615) – A government that does not support industry development can hinder progress and innovation.



Figure 3. Ranking of variables

TQM is a Corrective Action; Lebanon Does Not Believe In (2.615) – This indicates skepticism or resistance to TQM as a proactive approach, seeing it more as a reactive measure.

Nonachievable Targets (2.615) – Setting unrealistic or unattainable targets can demotivate employees and lead to project failures.

Copying Standards from Other Cultures (2.604) – Relying on standards from other cultures without adaptation may not fit local contexts and needs.

Top Management Commitment (2.531) – A lower score here suggests that top management commitment may be lacking, which is critical for driving organizational success.

Lower impact factors

Lack of Gap Analysis (2.500) – Failing to perform gap analysis can prevent identifying areas for improvement and strategic planning.

Lack of Job Safety (2.490) – Insufficient job safety measures can lead to workplace hazards and affect employee well-being.

Short-term Oriented Culture (2.354) – A focus on short-term goals rather than long-term strategy can limit sustainable growth.

Outsourcing Rather Than Employing (2.313) – Preferentially outsourcing instead of hiring may affect employee loyalty and organizational capability.

Personal Oriented (2.250) – A personal-oriented approach may affect objectivity and professionalism in decision-making.

Emotionally Directed (2.250) – Decision-making driven by emotions rather than data and rational analysis can lead to inconsistent and biased outcomes.

Family Organizations (1.552) – The lowest score suggests that family-based organizational structures are less impactful compared to other factors, though they might still influence operations and culture.

The results reveal that the most pressing issues are related to traceability, formal accreditation, quality management and training. These factors are crucial for establishing robust quality systems and effective organizational practices. Moderate concerns involve government regulations, ethical standards and management commitment. Lower-scored factors suggest areas of less immediate concern but still important for overall organizational health. This result is illustrated in Figure 4, which highlights the top 5 variables by their mean scores. This visualization provides a clearer understanding of the most significant variables, making it a useful reference for future researchers who may build on these findings to explore the most critical areas for further study.

Discussion

The survey aimed to identify the reasons behind the failure of TQM in Lebanon. The most common reason was lack of traceability, as noted by 88% of the respondents, while only 11% either disagreed or were indifferent. Out of the respondents, 66% argued that a lack of government support was a direct cause of TQM failure, while 30% were indecisive, meaning that they supported both arguments. Lack of obligatory standards was mentioned by 66% of the participants as a reason for failure, while a more significant number (32%) were indifferent to that statement, and only 2% were opposed. Notably, the respondents expressed the highest level of disagreement, 60%, on the statement. About 59% of the participants indicated that the lack of gap analysis was identified as a cause, while 34% were neutral, and 7% disagreed.

The lack of a quality manager and department was considered to be a major problem because 75% of the respondents said that it causes TQM failure. Twenty-two percent said that they had a neutral attitude, while 3% disagreed with the statement. Likewise, the statement on the lack of educational culture being a factor toward TQM failure elicited 71% agreement, 22% neutral reaction and 7% disagreement. Lack of commitment to ethical standards was

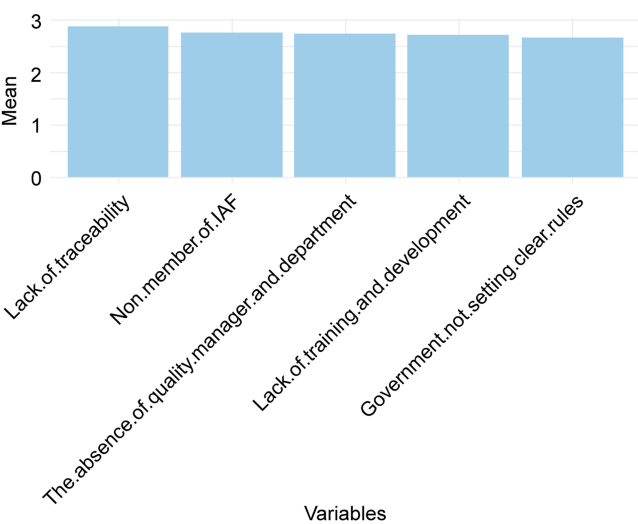


Figure 4. Top 5 variables by mean

supported by 67% of respondents, while 31% were neutral and 2% disagreed. Job safety was perceived to be lacking among the respondents, with 58% agreeing, 31% being in the middle, and 11% disagreeing with the statement.

TQM is only a corrective action, was a view supported by 69% of respondents. 24% neither agreed nor disagreed, while 7% disagreed. Here, 73% of respondents attributed the failure of TQM to the fact that the government had not established clear regulations, 22% were in the middle, and 5% were in the disagreeing camp. Sixty-four percent said nonachievable targets were the reasons, while 34% were neutral, and another 2% disagreed. Management support was considered important by 64% of the respondents. Twenty-seven percent remained inconclusive, while 9% disagreed.

Conclusion and recommendations

Unlike studies that focus on testing the correlations or causal relationships between TQM variables, the present research adopts an exploratory approach aimed at identifying and categorizing the key factors that contribute to the failure of TQM implementation within the Lebanese context. Nonetheless, major barriers such as inconspicuousness in TQM, unfavorable government and lack of enforcement of TQM standards were mentioned as the prime reasons for TQM's failure. The education and experience of the respondents also highlight that these ideas are based on professional knowledge that further validates the study's conclusions.

In an attempt to respond to the challenges as mentioned above, the following recommendations can be made. First, there is a need for more profound governmental support: setting mandatory requirements for the quality and development of the legislation that would correspond to international standards. It could address the issues of inadequate traceability and assist organizations in meeting high-quality standards in their operations.

Second, organizations should pay special attention to the formation of separate divisions on quality management headed by competent managers. Furthermore, sustaining an educational culture alongside constructiveness, ethics and professionalism, as well as professional development, contributes significantly to creating an enduring TQM culture.

It is recommended that the linkage between high support factors that lead to failure in the implementation of TQM be looked into. This could be a great step toward finding a supportive way to block such an effect and knowing where an organization can interfere to successfully implement TQM in the future.

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