

Total Quality Management Benefits and Barraries In Construction Industry

Rasha Al Salihi 1 , Assist.Prof.Dr. Redvan Ghasemlounia2

¹Mcs. Student, Department of Engineering Management, Faculty of Engineering, Istanbul Gedik university
Istanbul, Turkey

(rashakadhim19@gmail.com)

²Assisstant Professor, Department of Civil Engineering, Faculty of Engineering, Istanbul Gedik university
Istanbul, Turkey

(redvan.ghasemolunia@gedik.edu.tr)

Abstract: *The building sector is playing an important part Major factor in any country's development. The Construct industry growth depends on Building project efficiency. Quality is one thing Important factor in construction industry success in this paper the problems of quality definition in the construction industry are discussed, analysis potential advantages of quality implementation and considers quality barriers to Building implementation. Many implementing obstacles. We identify recent patterns that could lead to the Invade barriers. However, the various building actors must Know that improvement is necessary for the construction industry to improve quality TQM is specifically designed to deliver excellence in customer satisfaction by continual improvement full participation of product and processes every person who is a part of dedication that product/process. It's an orchestrated approach enhancement. If implemented correctly, it will support the Company of construction to boost its efficiency.*

Keywords: Total quality management; TQM Elements Key, TQM Elements, barriers of TQM, TQM benefits

INTRODUCTION

Professionals in the sector of the building are confronted with Multifaceted problems. Unprecedented shifts are taking place in the building sector, strategies, expertise, Methodology, and, most importantly, attitudes and aspirations of consumers against the finished result of their construction project.

Efficiency was a big concern in the construction of Industry, particularly when any professional in construction Discussion of quality, need, and promise of quality in the project Implementation, however eventually struggles to reach the Standard and consumer requirements as needed. It is frustrating that In, building sites have continued to be troubled by Unprecise targets and strategies of quality, both of which lead to a Long-term effect on the general building sector.

Sufficient production levels have been achieved in the construction industry for a long time, assets and wealth are both human and material resources with a high ambition while each year is wasted due to lack of adequacy or non-existence of control procedures [1].

These chronic issues have been tracing with low efficiency, and inferior Conditions, and ineffective methods for quality control, which implies that the quality level in the building is not It was sufficiently handled [2].

Since the impact on global competition in the building industry has increased significantly and, as the business continues to decline its competitors by the adversaries, this issue could present an urgent problem.

Customers are extremely selective today, betting on a company's previous records when handing out contracts. Although much of the substandard job may therefore be

Established and fixed during the building and maintenance Step, any defect may only be obvious after the facilities are in service, and this may trigger unnecessary disturbance to the operator Proprietor [3].

Many building firms or associations, thus, to live, their definition of quality must be modified to survive in It's an incredibly dynamic business.

TQM was theoretically possible in recognizing and reacting to what is going on in continuous efforts to develop the environment by being seen as a key factor for the efficiency of organizations [4].

he aim of this paper was to identify the barriers to TQM practice and assess the benefits of implementing TQM, such as reduced rework, reduced errors, and reduced training time rework, decreased Non-conformities, decreased population, lower costs, Improved overall project timeline, enhanced customer Satisfaction, a rise in the morale of workers, and a rise in Market share [5].

An all-encompassing approach can be given by the introduction of the TQM theory. It discusses the culture of work, the dedication of workers, quality management strategy, and, finally, client satisfaction.

It does not only include material analysis or the quality assurance of end products, but tries to produce quality, performance management and at any level is not a formal certification process like the ISO 9000 that focuses only on the procedural specification, its highest prevalence the quality of the human component and processes TQM takes up an essential problem and analyzes the data, discovers the underlying truths, checks it systematically, verifies that the new method works, standardizes it, and then cycles again. The application of the empirical method to the business.

The job of modern enterprise and technology involves a teamwork strategy instead of every engineer doing his thing. TQM, therefore, needs to apply to the business and technical strategies of the organization.

1.DEFINE QUALITY

Definitions play an important role in quality control since the definitions of researchers are the fundamental definitions. as shown in figure .1

1.1. Quality

Quality is the maximum performance degree specified by ISO 8402 competitive response, including efficiency, serviceability, maintenance, and even individual characteristics. We typically think of a successful product or service "quality" that meets or exceeds our standards. These assumptions are based on consumption and cost expectations. These expectations are based on the expectations Usage and the expense thereof.

1.2. Quality Assurances

Quality Assurances are the systemic and expected activities carried out within the framework of quality and Proved, if necessary, to ensure adequate confidence A system is based on quality criteria. The overall project is assessed by quality assurance, Output to have trust regularly the related quality requirements will be met by the project. Quality assurance is mainly sponsored Construction completed which fulfills all contract requirements. Assurance is characterized as a certain degree. Quality insurance employees ensure or ensure constantly that the performance of the contractor satisfies the contract specifications [6].

1.3. Quality Control

Quality control is a project monitoring results to assess if they meet the required standards and ways to eradicate the triggers Inadequate results. ANSI (American National Standards Institute) and ISO define quality control) and as the operating technology, ISO describes quality control and behavior; provides a way to monitor and control, for example, Measure the material, structure, component characteristics, or device used to meet consistency requirements.

1.4. Quality Management

Quality management refers to everyone's operations Works for management, in special top management, defining policy priorities and obligations for quality for the organization's all employees.

1.5. Total Quality Management

Total Quality Management (TQM) The management strategy is absolute quality management an organization that focuses on quality based on employees' engagement

and long-term success to all citizens of the by satisfaction and benefits Society and Organization.

The ISO definition that describes 'TQM is an organization's management approach based on Quality, focused on the engagement of all its employees and targeted at long-term customer satisfaction. Satisfaction and benefits to both social and organizational members [7].

Total Quality Management is an ongoing process for a particular organization's management and staff to ensure future customer satisfaction and customer loyalty. In other words, ten new customers are also carried on by every fulfilled and satisfied customer. In contrast, one unsatisfied client can spread bad word of mouth and hurt the current climate and future clients. Total Quality Control, which requires comprehension, is the last step in the evolution of quality.

In any area of business operations, and the implementation of principles and concepts of quality control. The development of the TQM can be traced to the work of different American specialists, e.g. Sir, Dr. Edward Deming, Dr. Joseph Juran, and Philip Crosby, who have made important contributions to the Continuous creation of this definition [7].

Analyzing the three elements is the best word to describe Total Quality Management: 'Total' Everyone's participation; 'quality' fulfills the needs and expectations of customers; and 'management' System for the attainment of eligible products and services [8].

Oakland defines TQM as a way to increase the productivity, performance, and versatility of "an organization as a whole". Services are the same as output operation. Its co-ordinates companies across all divisions, programs, and activities. Each person at all levels' [8].

The British Standards Institution (BSI) describes Total Quality Control as 'a philosophy of management. and corporate practices to manage an organization's human and material resources Most successful means of attaining the organization's objectives [9].

The main aim of TQM is "Do the right things, right the first time, every time" [10]. TQM should be followed by everyone of all practices, according to him. Producing, marketing, engineering, research, and development, market, HR, etc. TQM's core values include management engagement, staff capability, fact-based decision-making Building, developing constantly, and concentrating on customers.

It must not only discuss improved performance but also enhancing capabilities as regards continuous improvement in the future to achieve better outcomes. There are three biggest ones' Preventative processes.

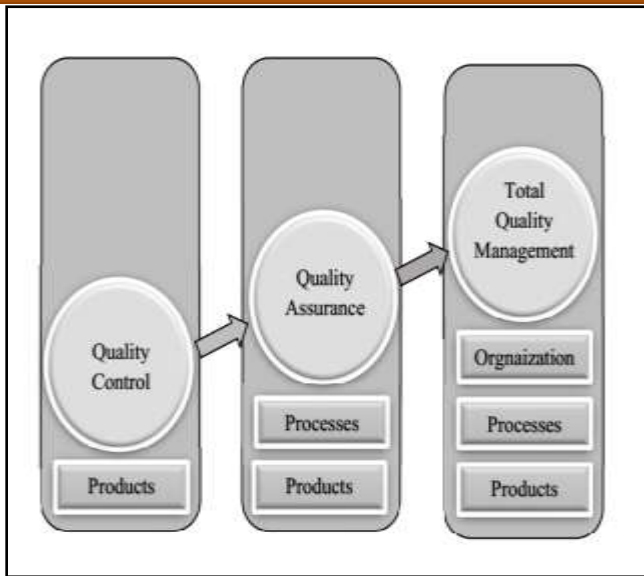


Figure 2. Quality history

3. TOTAL QUALITY MANAGEMENT ELEMENTS

To implement TQM effectively, six major components should be based on: ethics and integrity, Training and Communication; Leadership, and Recognition [10]:

3.1 Ethics and Integrity

Trust Due to the integrity and ethics of the organization, faith during the TQM's work cannot be created. All staff is fully allowed by faith. Enable all employee skills, engagement, and participation [11].

Encourage decision-making at the stage that is nearest to the issue person and ongoing changes to ensure that all are evaluated Employees are charged with metrics. Trust is important for customer satisfaction and is one that builds for the TQM an important climate of cooperation. Ethics It's either a good or a bad situation that transposes the issue. The main parts of ethics and individual ethics are described in the company.

A code of ethics is developed in organizational ethics guidelines stress that when you are involved you should join all workers. Including or ethics Individual opinions of what's right and what's right Intelligence, morality, Factual support, integrity, authenticity, and values.

It's necessary Waiting to get the consumer (internal-external). In comparison to the dignity of duplicity in character. TQM cannot operate in a duplicate atmosphere.

3.2 Training

For workers to be more effective, training is very necessary. Supervisors are supervisors who Responsible for the introduction of TQM in their divisions and the

propagation of the philosophy of TQM works amongst staff [12].

Training programs are required to build and maintain a culture for quality improvement, to understand the meaning of customer satisfaction and the priorities of the organizational laboratory, be able to contribute successfully to the program of quality improvement. Inside their divisions, supervisors are solely responsible for enforcing TQM and explaining the philosophies of TQM to their workers.

Training of staff who need interpersonal skills, the ability to work as a team, solving strategies, that ability to work with a team, Decision-making, performance appraisal to maximize the task, understanding the Enterprise is located. To become more efficient and more competitive, you must be prepared.

3.3 Communications

TQM's success in teamwork is an important factor of the team. The response to the issues that arise in the company will be sought quicker and easier. Teams can Processes and activities will be improved.

People in the teams feel more relaxed to Create potential issues and can be supported by colleagues to identify and Enforce solutions. The three types of teams that TQM organizations have are mainly:

- teams for quality enhancement. Temporary teams have been formed to evaluate the for periods of 3-12 months, issues that occur or reappear are also reported.
- Teams to address issues. Intended to resolve some issues and to describe the genuine root causes. They usually have a life cycle of between one week and three months.
- Working teams. There are small working groups of professional workers.

These teams use terms like employee engagement, self-management, productivity Circles. These teams meet once or twice a week.

3.4 Leadership

TQM responsibility requires that the employer needs to be guided and traced by the goal. Strategic instructions that all workers can recognize and enforce Lead subordinates. Lead subordinates. TQM must be interested in the performance of its corporate supervisor leadership.

The leader should understand TQM, trust in and believe in its values Represent this statement with confidence. Overseeing methods, philosophies, to provide direction, specificity and principles, and priorities, the organization. management. The main factor is to implement and handle TQM from the highest management level.

Employee Overall engagement and commitment are absolutely important in management in compliance with an organizational strategy in defining values and objectives at

all stages to achieve these objectives, identifying structures, processes, and observable measures.

3.5. Recognition

It will be the last part of the structure to be provided for and for Success for teams and individuals. Workers want to consider themselves and their teams. Detection of and appreciation of individual accomplishments is each supervisor's most important objective.

Then, as people understood the merits of significant self-respect improvements, Productivity, efficiency, and commitment permission. Recognition is the greatest impact when near be a reward or a notification from the above Management. The TQM basic principles of the above principles should be applied to Company culture in creating an open collaboration environment between the members and teamwork, clients, and suppliers. Customers. Managers should be mindful of That through total management of quality Principles can dramatically strengthen.

This implementation shown in figure widespread quality processes management should record short-term management advantages such as gaining new company Customer demand and market safety cost reduction via continual enhancement and reduction of performance Losses and productivity improvements [13].

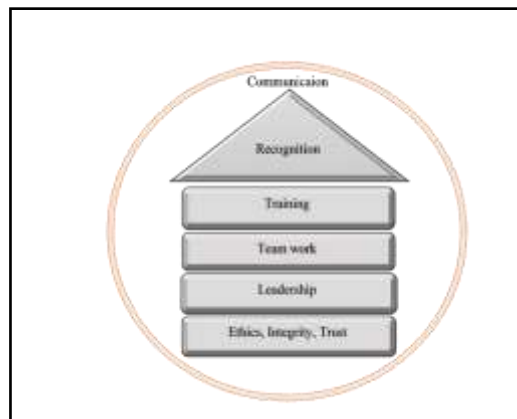


Figure 2. The TQM Elements Key

4. BENEFITS OF APPLICATION TQM AT CONSTRUCTION INDUSTRY

TQM is commonly regarded as allow Enable following. The quality at the industry, after being competitive worldwide introduced by most very competitive performance of organizations and productiveness management agencies, Services and manufactured industries in particular.

TQM's implementation in the context of business was noted as an essential policy for all facets of the organization, regarded as an integral service of any company [14].

1. TQM is a description of the distinctive features obtained by companies all over the world. It can develop financial efficiency and increasing Customer Satisfaction.
2. Increased product consistency.
3. The companies already understand their only method of succeeding in today's challenging world market is to be in a competitive global market. Comprehensive performance efficient company. It means, therefore, that organizations should begin to work for consistency. A way to achieve fair market or customer loyalty with your products [15].
4. Although it is not an easy task to implement the TQM, as it requires a complete change in the corporate culture, a transfer in accountability to management, and the continued involvement of all processes for improving quality [15]. Improved business morality and company-wide teamwork skills are improved with the successful implementation of TQM, more specifically, increased openness to the competition and customers.
5. The explanation by TQM enhances the organization's ability to detect future collapses before the disaster [16].
6. The companies think they must concentrate on preventing the troubles instead of try to solving it, which means the staff must implement the jobs without errors [17].
7. TQM application will provide about the enlightenment and encouragement of subalterns, in addition to understanding communication that is enhancing by the leadership.
8. TQM advantages involve enhancement of clients, preparation, and Staff training, customer loyalty. Top support for management.
9. Products with defects at the first shot, and cost-effectiveness.
10. TQM Implement leads to better quality products and facilities, supply, and the administration that will meet with customers' requirements at a given cost and administration.

5. VARIABLES AFFECT CONSTRUCTION QUALITY

Quality has recently become an extremely popular subject. Because of developments in the building industry that have been introduced. Quality Facilities It has many meanings, it will depend on individual perception to defining what variables impacts the quality:

5.1. The weakness of finance

This has been the major element in the Building and in any form of job where the contractor has worked Planning for payment to remove the risk is the project could be affected.

5.2. Communication Limitation

Building site Often It can be found in rural areas or far from the rural community. It may be a factor that has affected Transportation caused difficulties and delays, so it was a problem. The constraints that the contractor had to take into account [18].

5.3. Employment and salary limits

In several different location areas, labor-related Those may be the cause of work difficulty, failure, and delay, issues such as lack of experience, work complexity, and the difficult to reach employees.

5.4. Limitation of climate

One of the weather conditions was the weather's substantial limitations since it may sometimes not be avoided, such as rivers, storms, etc.

5.5. The constraint of Time

There had to be some building work Completed within a period, such as in urgent situations, that works. They have been able to restrict job preparation and they have also been able to other management issues have arisen. The contractor, therefore, had to consider this topic carefully.

5.6. Construction Technique Limitation

Construction Practice in those areas could not be carried out on an everyday Process since there were structures around buildings Place, the contractor would now have to find new methods suitable for construction and also used by professional engineers while some engineering was under development.

Training policies: Taking a look at general training policies, certified companies with ISO 9001 have more Concern regarding the training of their staff rather than the non-registered ones. Not only do they pay for the course fees, they even pay for the course fees, but They often allow them, during working hours, to undergo training. The business can, in the case of non-registered firms, reimburse the fees for the course, but workers must attend training Outside of working hours, meetings. Also, daily Technical and computer awareness training programs in many industries, have been widely issued. The Very Most The successful ISO 9001-organized training system Quality Awareness was the registered company [18].

5.7. Construction Plan Limit and Detail of Construction

Problems with the construction plan and specifications of the construction were considered as not clear as drawing, drawing problem, so the main problems in the building have also become.

5.8. Material limits

Some of the works which could use special machinery or equipment had to be properly informed to perform the job, and the planning for each task of suitable equipment.

5.9. Lack of collaboration between departments

Coordination for effective projects is very critical. This is because the departments could not communicate between Conduct incorrect execution or the series Its function may affect. For instance, the MEP Department is not properly coordinated with the executive team (Mechanical Electrical, Plumbing) and the plastering is now over by the execution team. Job before plumbing due to a lack of coordination is not done. In this case, it is important to rework so that the quality is immediately correct.

Failures happen because top management wants to drive with top-down strategies, improve. Failure to request and receive feedback on possible differences between their TQM ideology and the fact of execution precludes top management from understanding how their acts and policies can be responsible for the gap and making adjustments accordingly.

The services also weaken the dedication and engagement of employees. their desire to lead a transformation of TQM. The total output of the missing ingredient in the unsuccessful TQM transformation is the Management method for high-quality assessment and development at any step, the management team. Innovations like TQM are usually driven by the ability of upper management to enhance Performance. If top management adopts TQM, however, since TQM Some organizations have an appreciation of TQM and how it can be achieved. It will be used to boost the company's efficiency. If comprehension is low, dedication is also low and will below.

Early abandonment contributes to it. Their lack of understanding is capable of They can easily rely on staff groups or consultants to push them. Program for TQM. This drives the management team in effect at the Lower level to comply with the corporate TQM program passively Rather than out of faith, for political reasons, that TQM would be Enhancing their success [19].

6. BARRIERS TO EFFICIENT IMPLEMENTATION OF (TQM) IN CONSTRUCTION

As many will believe the TQM philosophy and ideals are valid, TQM programs have led many researchers to concentrate their efforts [20]. Attention to concerns connected with its execution. Several Concentrated on the TQM barriers. Others have been reducing their Concentrate on unique challenges to TQM, such as organizational culture, employee variables, and inadequate project causes. Administration.

The calculation of TQM was also emphasized by some Effects, especially its effect on financial results. This part of the paper would also include the author's Contribution,

to sum up, the digested observations and feedback in the study of literature.

These will give the company that is about to introduce or is currently implementing TQM in their organization a better understanding. Major obstacles to the successful implementation of TQM are shown below:

- Lack of time to apply for quality projects.
- Low inter-agency contact, poor communication.
- Lack of real employee empowerment.
- Lack of employee confidence in top management.
- The lack of an official plan for strategic change.
- Lack of strong motivation.
- Display the operating system as a quick solution.
- Target for short-term financial outcomes.
- Lack of management.
- Customer attention deficiency.
- Lack to define quality across a company.

7.CONCLUSION

In the industry, the dynamic and changing design of constructing the TQM concept remains ambiguous. Each project aims to achieve the objectives of the project. The customer's need and fulfillment within the specified time and budget without having any effect on quality. The methods of the implementation of TQM is one of the methods for detecting any in the building industry, defects.

This offers possibilities for improvement also encourages organizations to consider the challenges and advantages, which serve as a basis for performance appraisal, This research evaluates the potential advantages and obstacles of Implementation of TQM in the construction industry through a systematic review and recommendations on methods of construction in the building industry, TQM is strengthened using two as a yardstick, realistic methods.

This report, however, would serve as a guideline for the construction industry through its deep comprehension of TQM's advantages and obstacles.

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